Voice of FIPPI

Indian Wood & Allied Panels

Volume 20 • Issue 1 | A Quarterly Journal on Plywood and Panel Industry in India | January - March 2026

CELEBRATING ONE YEAR OF IMPLEMENTATION OF QUALITY CONTROL ORDERS (QCOs) ON PLYWOOD & PANEL PRODUCTS

INDIAN WOOD PANEL INDUSTRY

expresses its deepest gratitude to the Hon'ble Prime Minister, Shri Narendra Modi, for inspiring the industry towards manufacturing quality products.

"Let us resolve to improve the quality of whatever we manufacture"

MAKE IN INDIA

ZERO DEFECT, ZERO EFFECT

FEDERATION OF INDIAN PLYWOOD AND PANEL INDUSTRY (FIPPI)

CENTURYPLY®
CLUB PRIME
Raho Befikar

CLUB PRIME SE BETTER INVESTMENT HAI TOH BATAO!

+91 33 39403950

1800-5722-122

To know more, SCAN

GREENPANEL
—MDF KA DOOSRA NAAM—

Boil BLACK™

India's

Strongest, Toughest, Heaviest BWP HDF

- Boiling Water Proof*
- Ultra-High Density
- Low Emission
- Borer & Termite Proof*
- High-Dimensional Stability
- FR Variant*

INDIA'S NO. 1 MDF COMPANY®

MDF | HDF | PRE-LAMINATED MDF | WOODEN FLOORING | PLYWOOD

www.greenpanel.com | Toll Free No.: 1800 102 2999

*T&C Apply

VIR

MAXPRO
HDFWR

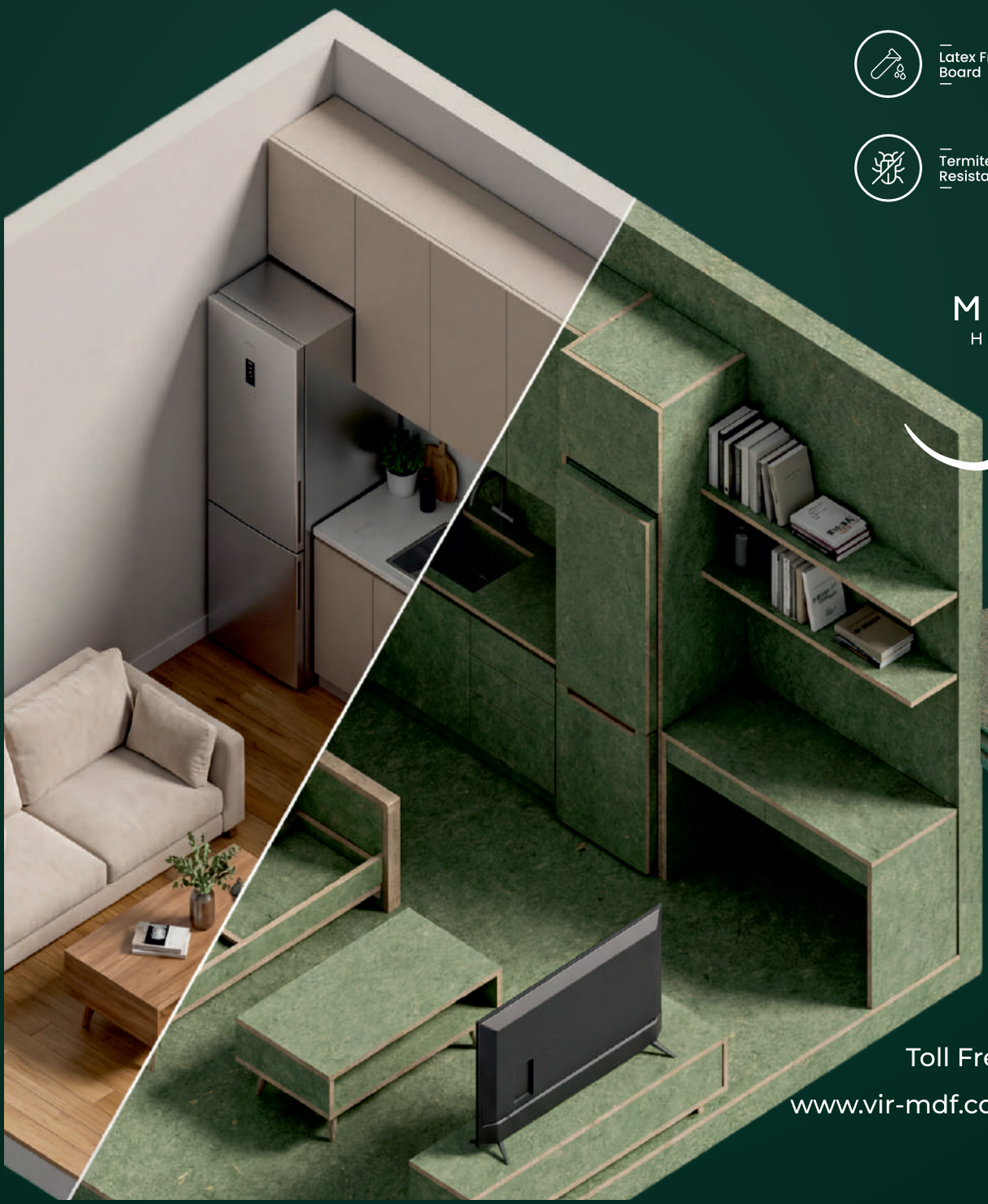
RUSHIL
DECOR LIMITED

HDFWR BOARD CRAFTED FOR STRENGTH, COMMITTED TO **SUSTAINABILITY**

STRONG | SMOOTH | SUPERIOR

FEATURES

- Weather Resistant
- Homogeneous Structure
- Environment Friendly
- Double Hardened
- Latex Free Board
- Resistant to Bending
- Termite & Borer Resistant
- Super Smooth Surface



MAXPRO
HDFWR GRADE

Toll Free No.: 1800 233 7952

www.vir-mdf.com | info@rushil.com

Voice of FIPPI

Indian Wood & Allied Panels

A Quarterly Journal on Plywood and Panel Industry in India

EDITORIAL & PUBLISHER'S OFFICE

Federation of Indian Plywood & Panel Industry (FIPPI)
1005, Vikrant Tower, 4 Rajendra Place, New Delhi-110 008, India
Tel: +91-11-25755649, E-mail: fippi@fippi.org, Website: www.fippi.org

Indian Wood & Allied Panels is published four times a year.

Printed & Published by **Federation of Indian Plywood & Panel Industry (FIPPI).**

Processed & Printed at **Polykam Offset,** C-138, Naraina Industrial Area, Phase – I, New Delhi-110028, India.

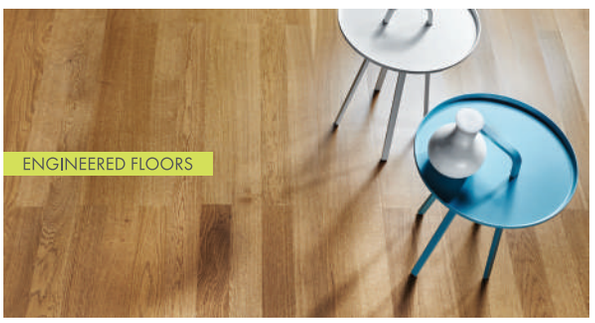
CONTENTS

(January - March 2026)

****

Greenlam®
Industries Limited

INTERIORS TO EXTERIORS, WALLS TO FLOORS, ELEVATE EVERY SURFACE WITH TIMELESS LUXURY!



Greenlam Industries Limited ranks among the top three laminate manufacturers globally and is a leading integrated substrate and surface solutions provider. The company offers a wide range of products to customers in over 120 countries, consistently delivering innovation and quality. Its diverse product portfolio includes decorative laminates and compact, interior and exterior cladding, restroom cubicles and locker solutions, decorative veneers, engineered wood floors & doors, plywood, prelam chipboard & MDF.

With five state-of-the-art manufacturing facilities in India, Greenlam upholds the highest standards of quality and sustainability with products certified to global benchmarks such as CE, UL, NSF, Greenguard, SEFA, Green Label, NEMA, and BS EN. Supported by a robust international sales and distribution network, Greenlam continues to transform spaces with precision and expertise.

For any query, please contact at our Toll-free No.: 1800 833 0004 www.greenlamindustries.com

Greenlam LAMINATES | Mikasa PLYWOOD | Mikasa LAMINATES | Mikasa DECOWOOD VENEERS | Mikasa REAL WOOD FLOORS | Mikasa DOORS & FRAMES | Greenlam MFC PRELAM CHIPBOARD

A Nationwide message by FIPPI in the "Times of India" Across All Editions, Highlighting the Transformative Impact of QCOs

BENNETT, COLEMAN & CO. LTD. | Estd. 1838 | VOL. 77 NO. 51 | NEW DELHI | SATURDAY, FEBRUARY 28, 2026 | PAGES 38 | DEHRADUN | PRICE ₹5.00

THE TIMES OF INDIA

INCLUSIVE OF DOON TIMES, TOI PULLOUT & WEDDING TIMES

INDIA'S LARGEST ENGLISH NEWSPAPER | To subscribe call 1800 1200 004 or visit subscribe.timesofindia.com

PM to launch nationwide free HPV vaccination for 14yo girls to prevent cervical cancer; 1cr+ to be covered annually

CELEBRATING ONE YEAR OF IMPLEMENTATION OF QUALITY CONTROL ORDERS (QCOs) ON PLYWOOD & PANEL PRODUCTS

"Let us resolve to improve the quality of whatever we manufacture"

MAKE IN INDIA

ZERO DEFECT, ZERO EFFECT

INDIAN WOOD PANEL INDUSTRY

expresses its deepest gratitude to the Hon'ble Prime Minister, Shri Narendra Modi,for inspiring the industry towards manufacturing quality products.

Federation of Indian Plywood & Panel Industry (FIPPI), along with its 20 regional associations, 10 lakh farmers, and 10 lakh carpenters & woodworking entrepreneurs, thanks the Hon'ble Minister of Commerce and Industry, Shri Piyush Goyal, for the implementation of QCOs on Plywood, MDF, Particle Board, and Wooden Flush Door Shutters. This visionary reform has brought the following transformations in the industry:

- Market is increasingly aware of the quality of plywood and panel products.
- Domestic production has risen 15%, driven by import substitution and increased consumer confidence.
- Compliance has significantly improved, with domestic licensed manufacturing units increasing from around 800 prior to implementation to over 2,400 currently.
- Quality improvement is becoming essential even for small manufacturers.
- Smaller factories are proactively exploring branding and market-positioning strategies.
- Driving the formalization of the previously fragmented sector, boosting government tax revenues.
- Through economies of scale, domestic manufacturers have absorbed rising input costs, ensuring price stability for consumers.
- Growing demand for standardized wood panels has enabled domestic producers to operate near installed capacity and has attracted over 3,600 crore in capacity expansion investments.
- Increased production supports agroforestry-based timber markets, boosting incomes for over 10 lakh farmers.
- Contributing to India's NDC goal of a 2.5–3 billion tonnes CO_2 carbon sink by 2030 through sustainable tree cultivation.
- Increased production is reinforcing employment generation across the sector, strengthening rural and semi-urban economic ecosystems.
- Directly supporting over 10 lakh carpenters and woodworking entrepreneurs registered under the PM Vishwakarma Scheme 2023, ensuring superior craftsmanship.
- Even Original Equipment Manufacturers (OEMs) are partnering with local factories for consistent supply of quality panels instead of importing.
- Demand for E1 formaldehyde-compliant boards is growing steadily.
- Demand for quality control staff and job opportunities is rising across the sector.

FEDERATION OF INDIAN PLYWOOD AND PANEL INDUSTRY

www.fippi.org

Supporting Partners

CENTURYPLY · TESA KOI NAHI AISA · Greenply · GREENPANEL · Greenlam Industries Limited · RUSHIL DECOR LIMITED WE'LL MAKE IT · DURO Innovating Since 1957 · merino ECONOMY • EXCELLENCE • ETHICS · VIRGO GROUP · E3 GROUP

WOOD IS GOOD: GROW MORE, USE MORE

The Pioneer
www.dailypioneer.com
facebook.com/dailypioneer @TheDailyPioneer
instagram.com/dailypioneer linkedin.com/in/dailypioneer
TRUSTED SINCE 1865
RNI No. 53466/91. Vol.36 Issue 48
NEW DELHI | WEDNESDAY, FEBRUARY 18, 2026 | PAGES 16 | ₹5.00
PUBLISHED FROM: DELHI LUCKNOW BHOPAL RAIPUR BHUBANESWAR RANCHI CHANDIGARH DEHRADUN HYDERABAD VIJAYAWADA

Quality as Nation Building: The Wood Panel Industry's New Chapter

Rajesh Mittal
President FIPPI & Chairman & Managing Director
Greenply Industries Limited

One year ago, India's plywood and panel industry crossed an inflection point. The implementation of mandatory Quality Control Orders (QCOs) marked not merely a regulatory reform, but the beginning of a structural transformation in a sector that has quietly supported India's housing, infrastructure and interior economy for over a century.

The Indian plywood and panel industry has historically been fragmented. Nearly 80 percent of the sector comprises MSMEs, while large, organized players account for only a small portion of production capacity. This fragmentation, though entrepreneurial in spirit, led to wide variations in product quality. In the absence of mandatory standards, a significant number of units operated without uniform benchmarks resulting in inconsistent output, safety risks, and market distortions.

For consumers, this meant uncertainty. For carpenters, it often meant rework and reputational damage. For compliant manufacturers, it meant unfair competition from substandard products.

The Government's decision to mandate QCOs requiring strict adherence to BIS-certified safety and quality standards-has begun correcting this long-standing imbalance.

From Fragmentation to Formalization

The completion of the first year of mandatory QCO implementation offers early but compelling evidence of impact.

Production has increased by nearly 15 per cent. Investment sentiment has improved. Most notably, the number of domestic units granted BIS licenses has surged from around 800 prior to QCO enforcement to over 2,400 today. This dramatic expansion in compliance reflects not contraction, but formalization.

An industry once perceived as largely unorganized is steadily transitioning into a structured manufacturing ecosystem aligned with national quality benchmarks. This formalization not only enhances product reliability but also strengthens tax compliance and transparency-benefiting the broader economy.

Import substitution has further supported domestic manufacturing. As compliance standards rose, low-grade imports found it difficult to compete. Domestic players have expanded capacity under a standardized regime, reinforcing the vision of Atmanirbhar Bharat in this segment.

Quality Without Burdening Consumers

Regulatory reform often raises fears of price escalation. However, the plywood and panel industry presents a counter example. Despite higher compliance costs and investments in testing and certification, consumer prices have remained stable. In fact, prices of MDF and particle board have declined by 10-12 per cent. Economies of scale arising from higher domestic production and improved efficiencies have allowed manufacturers to absorb input pressures.

The reform has thus improved quality without imposing additional financial burden on Indian households-a rare and welcome outcome in industrial policy transitions.

Restoring Trust in India's Vishwakarmas

Perhaps the most underappreciated dimension of this reform lies in its impact on skilled artisans.

Contrary to common perception, more than 90 per cent of plywood and panel products in India are not consumed by large furniture factories. They reach homes through dealers and retailers, where they are shaped and installed by millions of carpenters working on-site.

Before QCO enforcement, substandard boards frequently warped, delaminated or failed prematurely, forcing carpenters into repeated repairs. The consumer often blamed workmanship rather than material quality.

By ensuring that only BIS-certified products enter the market, QCOs have strengthened the professional credibility of over one million artisans registered under the PM Vishwakarma Scheme. Quality assurance is now protecting not only consumers but also the dignity of skilled craftsmanship.

A Green Industry with Rural Linkages

The plywood and panel sector is also uniquely positioned at the intersection of manufacturing and agriculture. Nearly 92 per cent of its timber requirements are met through agroforestry plantations. More than one million farmers are engaged in growing timber species integrated with agricultural crops.

As the industry expands under a quality-driven framework, timber demand rises-encouraging greater tree cultivation. This contributes to higher rural incomes and supports the Government's objective of enhancing farmers' earnings.

Beyond income, the environmental implications are significant. Increased agroforestry supports India's Nationally Determined Contributions (NDCs), particularly the target of creating an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent by 2030. A quality-driven wood panel industry therefore becomes a silent but effective contributor to climate mitigation and green cover expansion.

Inclusive Compliance: Handholding MSMEs

The transition to mandatory standards could have been disruptive for smaller units. However, industry associations such as the Federation of Indian Plywood and Panel Industry (FIPPI) have adopted a proactive handholding approach.

Over the past year, outreach programmes in manufacturing clusters across Mysore, Kerala and Gujarat have helped MSMEs understand compliance pathways. A proposed collaboration with Kannur University to establish a plywood testing laboratory aims to decentralize access to quality infrastructure. By bringing testing facilities closer to production centres, compliance becomes accessible rather than burdensome.

Such partnerships illustrate how regulatory reform, when combined with institutional support, can uplift rather than marginalize smaller enterprises.

Beyond Compliance: Building a Culture of Quality

As the industry enters its second year under QCOs, the focus must shift from enforcement to awareness. Homeowners must be educated about the long-term value of choosing BIS-certified products over inferior alternatives. Retailers and dealers must actively promote standardized materials.

The deeper objective is cultural: to embed quality consciousness across the value chain-from farmer to factory, from dealer to carpenter, from artisan to homeowner.

The first year of QCO implementation demonstrates that visionary policy, when designed with clarity and executed with collaboration, can transform an entire ecosystem. Farmers benefit from higher timber demand. MSMEs gain access to formal markets. Artisans regain professional trust. Consumers receive safer, more durable products. The nation advances toward green manufacturing and sustainable growth. Quality, at last, has moved from aspiration to obligation and from obligation to opportunity.❑

West Asia Conflict and Its Cascading Impact on India's Plywood & Panel Industry

How maritime chokepoints and petrochemical shocks are reshaping cost structures – and what manufacturers must do to navigate these headwinds

Ajay Kumar
Senior Economic Policy Advisor, FIPPI
and *Advisor,* Merino Industries Ltd

The ongoing geopolitical tensions in West Asia have once again exposed the fragility of global trade arteries. Three critical chokepoints—the Strait of Hormuz, Bab el-Mandeb, and the Suez Canal—serve as lifelines for energy and cargo flows connecting Asia, Europe, and beyond. Any disruption along these routes transmits economic shocks far outside their geography, reaching deep into industries that depend on integrated global supply chains.

India's plywood and engineered wood panel industry—spanning plywood, MDF, particle board, and laminates—is particularly exposed. Valued at approximately ₹30,000 crore (~$3.6 billion) and growing at a CAGR of 8–10%, this sector may appear domestically insulated, yet its input ecosystem is tightly interwoven with global petrochemicals, shipping logistics, and energy markets. The West Asia conflict has triggered a cascading impact across this value chain, creating immediate cost pressures and longer-term strategic vulnerabilities that manufacturers can no longer afford to ignore.

The Crude Oil Shock and Petrochemical Inflation: At the core of the disruption lies crude oil volatility. The Strait of Hormuz handles approximately 21 million barrels of petroleum liquids per day, representing 21% of global consumption, making it the single most consequential maritime chokepoint for energy markets. India imports nearly 85% of its crude oil requirements, rendering it acutely sensitive to any disruption in this corridor.

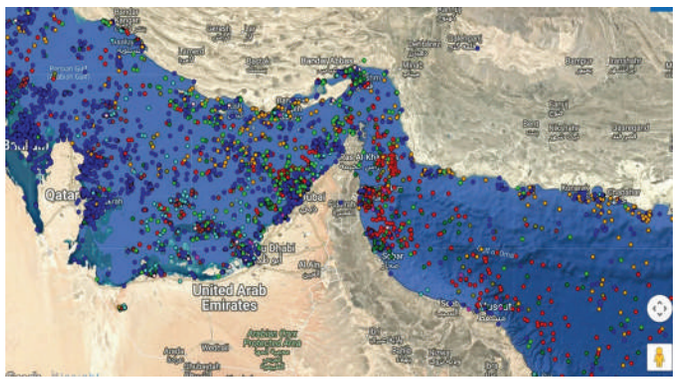
Petrochemical Cost Transmission

Resin and adhesive costs account for 25–40% of total board manufacturing cost. A 15–20% rise in crude prices typically translates into a 12–18% increase in UF/PF resin costs within 6–8 weeks, due to feedstock lag effects through the methanol-formaldehyde chain.

For India's panel industry, crude oil is far more than an energy input—it is the foundation of the petrochemical chain that underpins board manufacturing. The linkages are direct: methanol feeds into formaldehyde and ultimately into urea-formaldehyde (UF) and phenol-formaldehyde (PF) resins; melamine derivatives provide surface durability for laminates; and phenol is essential for exterior-grade plywood. When crude prices surge, the entire adhesive cost structure shifts upward, compressing margins, reducing pricing flexibility in competitive markets, and inflating working capital requirements.

Natural Gas Disruptions and Resin Instability

West Asia is also a major supplier of natural gas, a critical feedstock for ammonia, urea, and ultimately urea-formaldehyde (UF) resins—the backbone of cost-efficient



MDF and particle board production. The conflict has introduced significant uncertainty into LNG shipment flows, with global gas prices rising 35–50% above pre-conflict levels during peak disruption periods.

Melamine Import Exposure

India imports approximately 70–80% of its melamine requirements, primarily from China and West Asian producers. With melamine prices correlated to both natural gas (as feedstock) and freight (as logistics cost), a combined shock can increase landed melamine costs by 25–35%—directly affecting laminate and MDF surface-quality segments.

Since UF resins underpin the economics of volume panel manufacturing, any sustained increase in urea prices directly affects the competitiveness of, plywood, MDF and particle board—both domestically and against imported alternatives. Manufacturers face mounting pressure either to absorb higher formulation costs or to pivot to alternative resin systems that carry their own cost premiums of 20–30%.

The Red Sea Freight Shock

The Red Sea corridor—via Bab el-Mandeb and the Suez Canal—handles approximately 30% of global container traffic. Disruptions have forced mass rerouting via the Cape of Good Hope, adding roughly 9,000 kilometres and 14–20 additional sailing days to key trade lanes. The financial consequences have been severe.

Conflict Escalation → Red Sea Closure →Cape Rerouting → Freight +30–100% → Input Cost ↑→ Margin Compression

Container spot rates on Asia-to-Europe lanes, which had stabilised around $1,500–2,000 per TEU in 2023, surged to $5,000–8,000 per TEU during peak disruption periods. War-risk marine insurance premiums for Red Sea transits rose more than tenfold. For India's panel industry, the consequences are tangible: higher landed costs for imported inputs, erosion of export competitiveness, and supply-chain unpredictability that undermines production planning.

> *"The Strait of Hormuz and the Red Sea are not distant maritime abstractions—they are economic transmission channels with a measurable impact on EBITDA, working capital, and the long-term sustainability of India's panel manufacturers."*

Domestic Energy Costs Under Pressure

The global energy shock does not stop at India's ports. As international oil and gas prices rise, industries shift toward coal and biomass substitutes, driving up domestic fuel prices in turn. Wood panel manufacturing is energy-intensive—consuming an estimated 150–200 kWh per cubic metre of board produced—with energy costs typically representing 8–12% of total production cost. Rising fuel prices, intensifying competition for biomass and wood-waste resources, and pressure on captive energy strategies collectively add another material layer of cost inflation to an already stretched value chain.

Structural Pressures Building Beneath the Surface

Beyond direct cost increases, several structural shifts are quietly reshaping the competitive landscape. The import-versus-domestic balance has become volatile: while imported boards face higher freight costs, rising raw-material inflation simultaneously erodes the cost advantage of domestic production. Working capital stress is intensifying as higher input prices inflate inventory valuations—with typical plywood or any other panels like MDF or PB manufacturers' raw material inventory cycles extending from 30 to 45–60 days during supply disruptions.

Perhaps most significantly, the highly fragmented nature of the Indian plywood market—where unorganised players account for nearly 80% of output—severely limits manufacturers' ability to pass costs on to customers. This leaves organised players facing margin compression even where scale should provide a structural advantage.

Strategic Recommendations: From Vulnerability to Resilience

The industry's response cannot be limited to reactive cost management. Structural transformation is required—and urgently so across six fronts:

01. Real-Time Cost Intelligence

Build dashboards tracking Brent crude, methanol benchmarks, urea indices, melamine import prices, LNG rates, freight indices (BDI and container rates), and the INR/USD exchange rate. This enables early-warning signals to have better resource plans.

02. Diversify Sourcing

Reduce single-region dependence on West Asia and China. Engage with alternative suppliers in Russia, Latin America, and domestic markets. Build strategic inventory buffers during low-price cycles to absorb future shocks.

03. Resin Optimisation

Improve resin efficiency (lower GSM usage per board), invest in hybrid and low-emission resin systems, and accelerate R&D in bio-based adhesives to reduce petrochemical dependency.

04. Energy Resilience

Invest in captive renewable energy—biomass gasification and solar hybrids. Optimise boiler efficiency and heat-recovery systems. Secure long-term fuel linkages to insulate against price volatility.

05. Freight Hedging

Enter long-term freight contracts where feasible. Develop multi-port sourcing strategies and build inland logistics efficiency to reduce exposure to maritime disruption cycles.

06. Industry Coordination

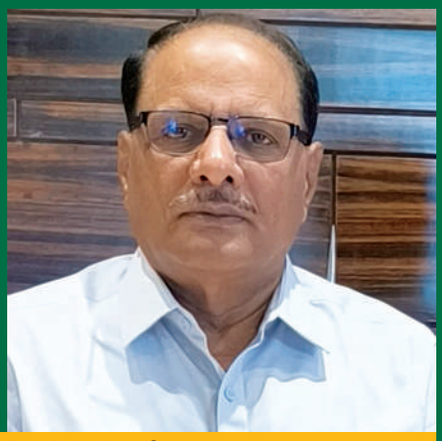
Through associations like FIPPI, advocate for stable import duties on key chemicals, engage government on energy security policy, and review with governments to have availability of key inputs including Urea at reasonable rates.

The Way Forward

The West Asia conflict is not a temporary disruption to be managed and forgotten. It is a symptom of a structurally volatile global order—and a direct input-cost event for India's wood panel manufacturers. The manufacturers who emerge stronger from this period will be those who treat geopolitical risk as a core business variable: anticipating shocks through data intelligence, building flexibility into sourcing and production, and investing in both energy and material efficiency.

Resilience, agility, and strategic foresight are no longer optional attributes in this industry. They are the prerequisites for survival—and, ultimately, for competitive advantage—in an increasingly turbulent global economy.❑

Specialty Plywood and Wood – Panel Products Manufacturing in India: Advancing India's Capability for High – Performance Furniture Applications



Dr. C. N. Pandey
Senior Technical Advisor, FIPPI

Dr. Richa Bansal
Assistant Director, FIPPI

The Indian furniture and interior industry have undergone a rapid transformation over the past decade due to the growth of modular furniture, organized retail, and the increasing demand for high-quality decorative panels. As a result, several specialty plywood products that were traditionally imported are now witnessing growing demand in India. These include pre-laminated plywood, synchronized melamine faced plywood, flexible or bending plywood, technical plywood substrates for short cycle lamination and foil lamination, advanced excimer coated decorative plywood, and birch plywood.

At present, many of these products are largely imported from ASEAN countries and Europe due to the availability of specific raw materials, advanced surface technologies, and historically limited domestic production. Now most of the organised Indian plywood manufacturers have evolved significantly in terms of manufacturing capability, technological adoption, and machinery availability. It is estimated that more than 50 plywood manufacturing units in India already possess the necessary machinery, press technology, sanding systems, and coating equipment required to produce several of these specialty plywood products. With appropriate technical focus, process optimization, and raw material sourcing, the domestic industry can significantly reduce imports and cater to the requirements of the rapidly growing Indian furniture sector.

A. Speciality Plywood Products

The technical aspects of manufacturing these specialty plywood products as described below have given opportunity for Indian manufacturers to develop domestic capability in these segments as per the need of the furniture industry.

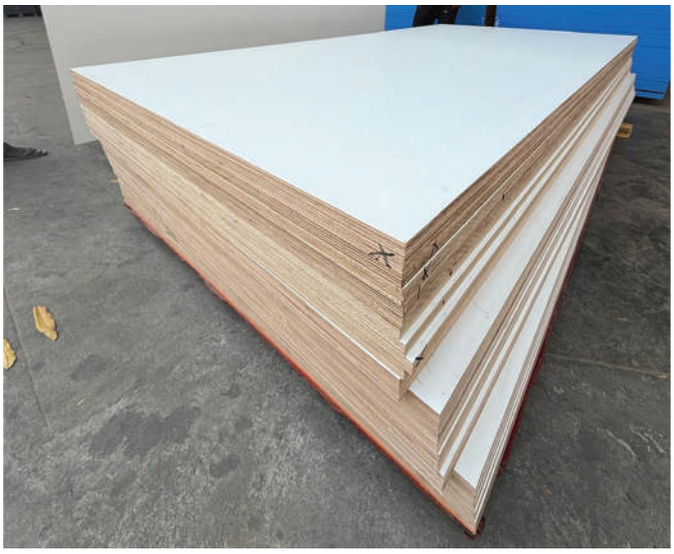
1. Pre-laminated Plywood

Pre-laminated plywood is manufactured by producing a high-quality calibrated plywood substrate followed by the lamination of decorative melamine impregnated papers directly onto the plywood surface through short cycle lamination technology. The base plywood is prepared using selected hardwood veneers which are rotary cut, dried to controlled moisture levels, and bonded using suitable adhesives such as phenol-formaldehyde or melamine-urea-formaldehyde under hot pressing conditions. After pressing, the plywood panels undergo multi-stage calibration sanding to ensure uniform thickness and smooth surface quality.

Decorative melamine impregnated papers containing solid colours or wood grain designs are then placed on the prepared plywood surfaces and pressed under high temperature (typically 170–200°C) and pressure in short cycle presses. During pressing, the melamine resin cures and permanently bonds the decorative surface with the plywood substrate, forming a durable and decorative panel. Careful control of surface preparation, moisture content, pressing parameters, and veneer quality ensures that the final product remains free from dents, patches, shadowing, and chipping. Balanced plywood construction and proper veneer grading help maintain dimensional stability and limit warping to approximately 1 mm per 1000 mm panel length. Prelaminated plywood provides an economical alternative to traditional high-pressure laminate (HPL) pasting on plywood

and is widely used as a ready-to-use furniture board in wardrobes, cabinets, and modular furniture components.

Prelaminated plywood is manufactured by leading companies such as Century Plyboards India Ltd. and Greenply Industries Ltd. Further details on prelaminated plywood manufactured by Greenply has been given in the article published in the subsequent pages of this magazine.



Prelaminated Plywood (Century Plyboards India Ltd.)

Prelaminated Plywood (Greenply Industries Ltd.)

2. Synchronized Melamine Faced Plywood

Synchronized melamine faced plywood represents an advanced decorative panel technology where the surface texture is synchronized with the printed wood grain pattern of the decorative paper. The manufacturing process begins with the production of a high precision plywood substrate constructed with carefully graded veneers and gap-free core layers. Core veneers are often scarf-jointed and tenderized to ensure dimensional stability and consistent edge straightness.

The plywood substrate is calibrated through precision sanding before applying melamine impregnated decorative papers. The lamination process takes place in specialized synchronized presses equipped with engraved steel press plates. These plates are designed so that their embossed texture precisely matches the printed wood grain pattern on the decorative paper.

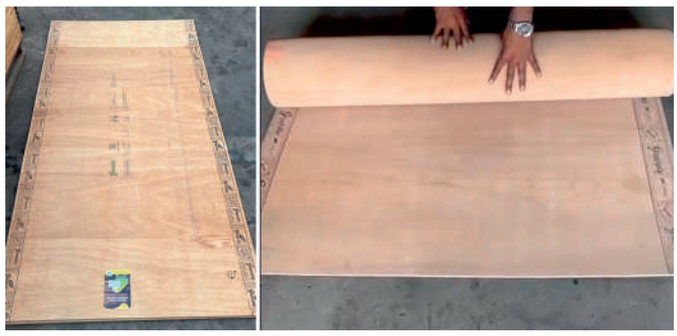
When the panel is pressed under controlled temperature and pressure, the melamine resin cures while the embossed press plate simultaneously transfers a synchronized texture onto the surface. The result is a highly realistic wood appearance where the tactile surface structure follows the printed grain pattern. This technology requires strict control over veneer quality, plywood calibration, and press alignment to ensure a defect-free surface and accurate synchronization. Such panels are widely used in premium furniture, wardrobes, kitchen shutters, and interior panelling.

3. Flexible or Bending Plywood

Flexible plywood, also known as bending plywood, is specifically engineered to allow controlled flexibility in one direction so that it can be easily bent and applied over curved surfaces. The manufacturing process involves the use of carefully selected lightweight wood species and thin rotary cut veneers.

Unlike conventional plywood, flexible plywood uses a specialized veneer arrangement where the grain orientation and veneer thickness are designed to reduce panel rigidity. Typically, a very thin core layer or specially oriented veneers are placed in the central section of the panel to allow bending without structural failure. Adhesives such as urea-formaldehyde or melamine-urea-formaldehyde are used to bond the veneers during hot pressing.

After pressing, the panels retain their flexibility along the desired direction while maintaining adequate surface integrity. Such panels can easily bend around cylindrical or curved structures and are widely used for manufacturing curved furniture components, decorative columns, reception counters, and interior architectural elements. This product category is particularly relevant for the interior fit-out and turnkey furnishing sectors.



Flexi Ply (Greenply industries Ltd.)

4. Raw Plywood for Short Cycle Lamination and Foil Lamination

Plywood intended for short cycle lamination or foil lamination serves as a technical substrate and therefore requires significantly higher manufacturing precision than conventional general-purpose plywood. The process begins with the selection of high-grade veneers that are free from knots, splits, or defects. Veneers are dried to controlled moisture levels and assembled in balanced cross-laminated constructions using high-quality phenolic or melamine-based adhesives.

One of the key requirements in manufacturing this type of plywood is the elimination of core gaps, veneer overlaps, and scarf joint marks that may become visible after lamination. After hot pressing, the plywood panels undergo precision calibration sanding using multi-head sanding machines to achieve a uniform thickness tolerance of approximately ±0.3 mm.

The surface must remain completely smooth and free from dents, holes, patches, or depressions to ensure proper adhesion of decorative papers or foils during short cycle lamination. Additionally, strict control of panel geometry ensures edge straightness of approximately 1 mm per 1000 mm. Such high precision plywood substrates are essential for producing high quality melamine laminated boards and decorative foil laminated panels used in furniture manufacturing.

5. Nitrogen Excimer Energy Coated Decorative Plywood

Nitrogen excimer coated decorative plywood represents a highly advanced surface finishing technology that significantly enhances the durability and aesthetic quality of decorative panels. In this process, a premium plywood substrate is first laminated with natural wood veneer or PET decorative films. The surface is then coated with specially formulated UV curable lacquers.

The coated panels are subsequently exposed to excimer ultraviolet curing in a controlled nitrogen atmosphere. The excimer curing process modifies the polymerization behaviour of the coating at the surface level, creating an ultra-matte micro-textured finish with extremely low gloss levels, often around 2° gloss. At the same time, the coating retains deep open pore structures of approximately 300–350 microns that preserve the natural appearance and tactile feel of the wood grain.

The resulting surface demonstrates exceptional resistance to scratches, abrasion, and fingerprints, while superficial micro scratches can often be repaired easily. Excimer technology also provides enhanced chemical resistance and surface durability, making such panels suitable for premium furniture, luxury interiors, and high-end architectural applications.

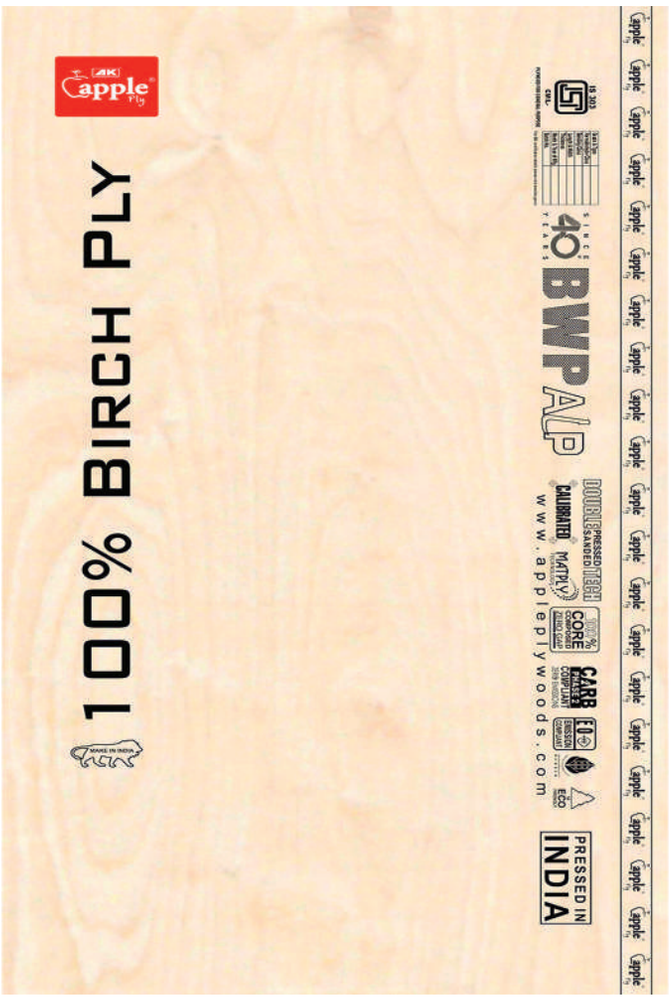
6. Birch Plywood (Plain and Film Faced)

Birch plywood is manufactured using veneers obtained from birch species, which are known for their fine and uniform grain structure, and excellent strength properties. These characteristics make birch plywood particularly suitable for high-quality furniture, cabinetry, and interior applications where durability, smooth surface finish, and dimensional stability are important. Since the availability of birch wood in India is limited and not available at a commercial scale, some of the plywood manufacturers import birch veneers from European countries and produce birch plywood domestically to meet the requirements of the furniture industry. The veneers are rotary cut into thin sheets and graded for uniform thickness and minimal defects. These veneers are dried and assembled in multiple cross-laminated layers using Urea-Melamine: formaldehyde or similar adhesives to produce strong and dimensionally stable plywood panels.

The panels are hot pressed and subsequently calibrated through precision sanding to achieve tight thickness tolerances of approximately ±0.2 mm along with a smooth and uniform surface finish. The dense structure and balanced construction of birch plywood provide excellent strength, dimensional stability, and resistance to bending or warping.

For film faced birch plywood, phenolic resin impregnated kraft paper films are applied on one or both surfaces during the hot-pressing stage. This produces a highly durable, water resistant, and abrasion resistant surface widely used in formwork systems for construction. Plain birch plywood is extensively used in CNC routing, laser cutting, toy manufacturing, educational products, die making, carom boards, and precision engineered wood products due to its uniform core structure and smooth surface.

AK Apple Ply has achieved a significant milestone for India's plywood industry by becoming the first company to manufacture 100% birch plywood domestically. A comprehensive article on this development is featured in this magazine.



Birch Ply (AK Apple Ply)

B. Specialty Particle Board Products:

The Indian wood-based panel industry has witnessed substantial progress over the past decade, particularly in the particle board segment, which has evolved from a commodity-driven sector into a technologically capable manufacturing base. With the widespread adoption of continuous press technology, precision mat forming systems, advanced resin formulations, and modern surface finishing lines, Indian manufacturers have achieved significant scale, consistency, and cost competitiveness in standard-grade particle boards. This strong manufacturing foundation now provides a natural pathway for the industry to diversify into specialty and technical particle board products tailored to advanced furniture and interior applications.

The transition towards specialty particle boards represents not merely a shift in product mix but a strategic progression aligned with changing market dynamics. The Indian furniture industry is increasingly influenced by global design trends, export requirements, and performance standards. As a result, there is a growing demand for panels that offer enhanced functionality such as fire resistance, electrostatic control, low emissions, improved strength-to-weight ratio, and premium surface characteristics. While a portion of this demand is currently met through imports, the domestic industry possesses the inherent capability to manufacture these products with minimal incremental investment, primarily through process optimization and material refinement.

1. Electrostatic Dissipative (ESD/ESA) particle board

ESD grade Prelam Particleboard (Merino Industries)

ESD grade Postlam Particleboard (Merino Industries)

One of the most niche yet strategically important categories is Electrostatic Dissipative (ESD/ESA) particle board. These boards are specifically engineered to control and dissipate static electricity, making them indispensable in environments such as electronics manufacturing units, defence establishments, medical equipment facilities, and aerospace applications. The production of ESD particle boards involves the incorporation of conductive materials and specialized surface treatments to achieve controlled electrical resistance. Indian manufacturers already equipped with sophisticated blending and lamination technologies, are well-positioned to develop such products. With the rapid expansion of electronics manufacturing in India under initiatives like "Make in India," the demand for ESD-compatible infrastructure materials is expected to rise, presenting a significant opportunity for domestic producers.

2. Fire-retardant particle boards

Fire-retardant particle boards constitute another important segment within specialty products. These boards are increasingly required in commercial buildings, public infrastructure, institutional furniture, and export-oriented applications where stringent fire safety standards are mandatory. International classifications such as European fire ratings, necessitate precise control over material composition and performance characteristics. Indian manufacturers can produce fire-rated boards by integrating fire-retardant additives into resin systems and optimizing pressing parameters. Given that most modern plants already operate under controlled processing conditions, the production of such boards is technically feasible, provided there is adequate access to testing and certification facilities.

Fire-retardant particle board (Greenlam Industries)

3. High and Low-density particle boards

Density optimization is another area where Indian particle board manufacturers demonstrate significant flexibility. Unlike conventional production that focuses on standard densities, modern manufacturing systems allow for a wide spectrum of density variations tailored to specific applications. Low-density boards, typically below

500 kg/m^3, are ideal for lightweight and modular furniture, enabling ease of handling and transportation. High-density boards, exceeding 900 kg/m^3, offer superior mechanical properties such as enhanced screw-holding capacity, improved machinability, and higher load-bearing strength, making them suitable for premium furniture and structural applications. The ability to produce such a range of densities is already embedded within existing continuous press operations; however, formal recognition and standardization of these categories within Indian regulatory frameworks would facilitate broader market acceptance.

4. Low-emission particle boards

Environmental sustainability and indoor air quality considerations are increasingly shaping material choices in the global furniture industry. Consequently, low-emission particle boards compliant with international standards such as EN 16516, CARB-P2, and F**** ratings are gaining prominence. Indian manufacturers have made notable advancements in this domain through improved resin chemistry, use of formaldehyde scavengers, and better process control. With further strengthening of certification systems and the development of traceable raw material supply chains, the domestic industry is capable of meeting stringent environmental norms required for both domestic and export markets.

5. Nitrogen Excimer Energy Coated Decorative Particle Boards

In the domain of surface technology, excimer-cured decorative particle boards represent a significant advancement. This technology utilizes nitrogen excimer energy to create ultra-matte, anti-fingerprint, and highly scratch-resistant surfaces with synchronized textures. Such finishes are increasingly used in high-end furniture and interior design applications due to their aesthetic appeal and durability. Many Indian manufacturers already operate advanced lamination and coating lines, and the integration of excimer curing systems would enable them to produce premium panels that currently rely on imports.

C. Specialty MDF Products:

The Medium Density Fibreboard (MDF) sector in India has experienced rapid and transformative growth in recent years, driven by substantial investments in state-of-the-art manufacturing facilities. Modern MDF plants equipped with continuous press technology, refined fibre processing systems, and advanced finishing lines have enabled the production of high-quality panels that meet international benchmarks. While the industry has achieved significant success in standard MDF grades, the next phase of growth lies in the development and commercialization of specialty MDF products designed to meet evolving performance, environmental, and aesthetic requirements.

The emergence of specialty MDF is closely linked to the changing needs of the furniture and interior design sectors, both domestically and globally. As consumer preferences shift towards high-performance, durable, and visually appealing materials, and as export markets demand compliance with stringent standards, the role of value-added MDF products becomes increasingly important. Importantly, Indian manufacturers already possess the core technological capabilities required to produce such products, with the transition primarily involving process optimization, raw material selection, and enhanced quality control.

1. Fire-rated MDF

Fire-rated MDF is one of the key specialty products gaining traction in the market. These boards are essential for applications where fire safety is critical, such as public buildings, commercial interiors, educational institutions, and healthcare facilities. The production of fire-resistant MDF involves the incorporation of fire-retardant chemicals into the fibre matrix and ensuring uniform distribution during processing. Indian MDF plants, with their advanced fibre refining and blending systems, are well-equipped to manufacture such boards. The development of domestic testing and certification capabilities will further support the adoption of fire-rated MDF in the Indian market.

Fire-rated MDF (Greenpanel Industries Ltd.)

2. Low-emission MDF

Another important category is low-emission MDF, which addresses growing concerns related to indoor air quality and environmental sustainability. International standards increasingly mandate low formaldehyde emissions, pushing manufacturers towards E0 and super E0 grades. Indian producers have already made significant progress in this direction by adopting improved resin systems, optimizing pressing conditions, and implementing emission control measures. With continued advancements and alignment with global certification systems, Indian MDF manufacturers can effectively cater to environmentally conscious markets.

It is a low formaldehyde emission MDF board, crafted to meet international green-grade standards. It's designed for health-conscious interiors, with zero-added formaldehyde and a composition that supports safe, sustainable living and working spaces. Made using renewable hardwood species, this board delivers high density, excellent bending strength, and superior screw-holding capacity — without compromising on indoor air quality.

3. High Density Fibreboard (HDF)

High Density Fibreboard (HDF) represents a specialized segment within the MDF category, characterized by densities typically exceeding 900 kg/m^3. HDF is widely used in applications requiring high strength and durability, such as laminate flooring substrates, door skins, and high-performance furniture components. The production of HDF does not require entirely new infrastructure; rather, it involves adjustments in process parameters such as pressing pressure, temperature, and fibre compaction. Many Indian MDF plants are already capable of producing HDF, and formal recognition of this category within Indian standards would facilitate its wider adoption and market development. This product is currently manufactured by Greenpanel Industries, the details of which are given in the article published in the magazine featuring BoilBLACK™ – India's Strongest, Toughest & Heaviest BWP HDF.

High Density Fibreboard (HDF) (Greenpanel Industries Ltd.)

4. Surface-finished MDF

Surface-finished MDF products constitute a rapidly growing segment driven by the demand for ready-to-use decorative panels. These include PU-coated MDF, acrylic-laminated MDF, PET-laminated boards, and paper-foiled panels. Such products offer enhanced aesthetics, durability, and ease of application, making them ideal for modular furniture and interior design projects. Indian manufacturers, equipped with advanced lamination and coating lines, have the flexibility to produce a wide range of customized surface finishes. This capability is particularly advantageous in catering to project-based requirements and design-driven applications.

5. Pine MDF

An emerging niche within the MDF segment is the production of boards suitable for laser cutting and handicraft applications. These boards are widely used by small-scale industries, artisans, and hobbyists for creating intricate designs. Conventional MDF manufactured from mixed wood species often exhibits inconsistent burning behaviour during laser cutting, leading to uneven edges and reduced precision. Indian manufacturers can address this challenge by selecting appropriate raw materials such as pine or rubber wood and optimizing fibre processing conditions to ensure uniform density and improved machinability. This represents a promising opportunity to support the growing handicraft and creative industries in India.

6. Nitrogen Excimer Energy Coated Decorative MDF

Similar to particle boards, excimer-coated MDF is gaining popularity in the premium segment due to its superior surface properties, including ultra-matte finish, resistance to fingerprints, and high scratch resistance. The adoption of excimer curing technology in MDF finishing lines can significantly enhance the value proposition of Indian products in both domestic and international markets.

Super Matte Decorative Boards through Excimer Technology (Balaji Action Buildwell Pvt. Ltd.)

Balaji Action Buildwell Pvt. Ltd. manufactures super matte decorative boards using advanced excimer technology. A comprehensive article on innovative products from Action Tesa is presented in the subsequent pages of the magazine.

Conclusion

The increasing sophistication of the Indian furniture and interior design sector is creating significant demand for technologically advanced plywood and wood-panel products. While several of these specialty panels are currently imported from Europe and ASEAN countries, the Indian plywood industry has already developed substantial manufacturing capability over the past decade.

Many domestic manufacturers possess modern veneer processing lines, multi-opening hot presses, short cycle lamination presses, calibration sanding machines, and coating systems that can be utilized to produce these specialty plywood products with suitable process modifications. With appropriate focus on raw material selection, process control, and product development, at least 50 plywood manufacturing units in India have the potential to produce these products domestically.

The Indian particle board industry stands at a critical juncture where the transition from standard to specialty products is both feasible and necessary. The existing manufacturing infrastructure, combined with technical expertise, provides a strong foundation. The key enablers for this transition include targeted market development, supportive policy frameworks, access to testing and certification infrastructure, and the establishment of relevant standards.

The Indian MDF industry has reached a level of maturity where the focus must shift from volume-driven growth to value addition through specialty products. The necessary infrastructure, technical expertise, and manufacturing capability are already in place across several modern plants. The key challenges lie in market development, standardization, certification, and alignment with global requirements. By addressing these factors, Indian MDF manufacturers can unlock new opportunities, reduce reliance on imports, and strengthen their position in the global wood panel market. The move towards specialty MDF products not only enhances profitability but also ensures long-term competitiveness, sustainability, and resilience of the industry in an increasingly demanding and dynamic market environment.

Encouraging domestic manufacturing of such specialty panels will not only reduce import dependence but will also strengthen the value chain of the Indian plywood and furniture industry. It will create opportunities for product diversification, technology advancement, and higher value addition within the sector. With growing demand from modular furniture manufacturers, interior solution providers, and export markets, the development of these specialty plywood products presents a promising growth avenue for the Indian plywood.❑

New Products and Recent Developments by Greenply Industries for the Furniture Sector

Hemant Vijay Sharan
General Manager (Quality Control)
Greenply Industries Limited

1. Birch-Faced Plywood by Greenply

The introduction of BIS Quality Control Orders (QCO) for wood panel products, including imported materials, created a significant shift in the Indian furniture and OEM landscape. A clear requirement emerged from import-dependent segments, where manufacturers and designers were relying on imported birch plywood for its superior aesthetics and performance, but now faced challenges in compliance, availability, and continuity of supply.

To address this evolving situation, Greenply has introduced a new Birch-Faced Plywood range, engineered to deliver high precision, aesthetically superior surfaces, and excellent dimensional stability. This development provides a practical and reliable solution aligned with Indian regulatory frameworks.

At the same time, furniture OEMs and interior solution providers were seeking a panel that could offer European-style birch aesthetics, consistent dimensional performance, and low formaldehyde emissions (E0–E1 levels), while being manufactured under Indian conditions, standards, and service support systems.

It is important to note that there is currently no separate BIS standard specifically defined for birch-faced plywood. However, Greenply's Birch-Faced Plywood is developed in compliance with existing standards such as IS: 303 (General Purpose Plywood) and IS: 710 (Marine Grade Plywood), depending on the bonding requirement and IS: 1328 for decorative and aesthetic performance, based on buyer-specific requirements.

Greenply's Birch-Faced Plywood thus effectively bridges the gap by offering a product with BIS-compliance value and locally manufactured alternative to imported panels, without compromising on design, quality, performance, or evolving standardization needs.

Product Details – Raw Materials, Paper, and Base Ply

Birch faced plywood from Greenply uses carefully selected birch face veneers sourced to meet decorative grade norms typically equivalent European face grades, which allow minimal knots and a clean, uniform appearance. The thickness of Birch face veneer is 0.30mm. The used base plywood is calibrated with tolerance of +/- 0.20mm.

The base ply is composed of multiple cross bonded layers of plantation hardwood or softwood veneers, selected for density, strength, and stability rather than traditional species names, in line with industry recommendations to define core by properties. High performance synthetic resins are used to achieve water resistant or boiling water proof bonding, depending on the targeted application.

Product Testing and Performance Values

During development, the birch faced plywood was evaluated for key performance parameters in line with BIS guidelines and industry best practices for decorative panels. Typical tests include:

- Glue shear strength in dry and wet conditions to verify bond quality against IS:1328/IS 303/IS 710 requirements.
- Water resistance through 24 hour water immersion and, for higher grades, cyclic boiling tests, to establish suitability for interior and semi wet applications.
- Mechanical properties such as MOR and MOE in both parallel and perpendicular directions to confirm load bearing capability and resistance to bending in furniture use.
- Dimensional stability checks – thickness swelling, water absorption, and linear expansion – to ensure minimal movement and better performance in India's variable climate.
- Formaldehyde emission tests aligned with E0/E1 targets to meet health focused market segments and export oriented specifications.

In Greenply's internal development, these test results were used to optimise core construction, veneer lay up, and adhesive formulation so that the birch faced panels not only deliver decorative value but also match the strength and durability expected from premium structural plywood.

Size and Thickness Availability

To suit both Indian and international project requirements, Greenply's birch faced plywood is offered in standard panel sizes commonly used in furniture and interior fit outs. Typical sizes include 2440 mm × 1220 mm (8 ft × 4 ft), with the possibility of additional dimensions such as based on market demand.

The thickness range is calibrated to cover light furniture components as well as heavier structural applications, aligning with prevalent industry practices. Representative thicknesses include 16/18 mm, with tighter tolerance control to support CNC machining, edge profiling, and precise joinery.

Key Advantages:

- Minimum thickness variations for precision work
- Ideal for CNC cutting, edge banding, and modular furniture
- Consistency across panels for large-scale projects

Additional sizes and thicknesses can be developed based on project-specific or market requirements.

2. Greenply's Hybrid Plywood & Block Board

The furniture and interior industry today are moving towards faster production, better finish, and higher precision. With the growing demand for modular furniture and factory-made components, manufacturers are looking for panel products that reduce processing time while maintaining Strength of Plywood & surface finish of MDF.

As expectations from panel products continue to rise, Greenply has responded with Hybrid Plywood & Block board, a thoughtfully engineered panel that combines the advantages of two materials into one.

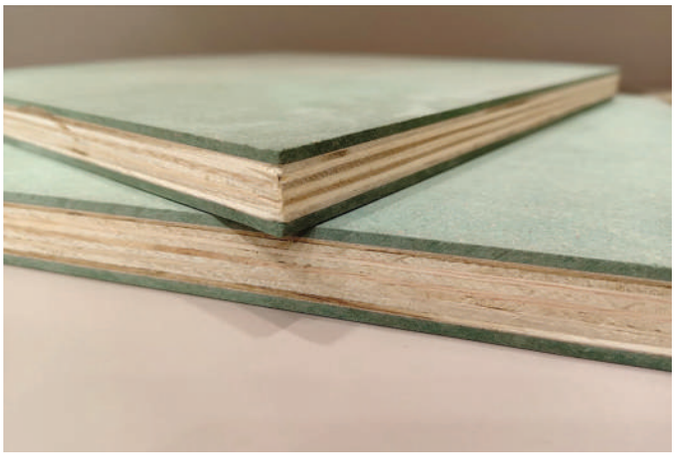
BIS Standards and Industry Development

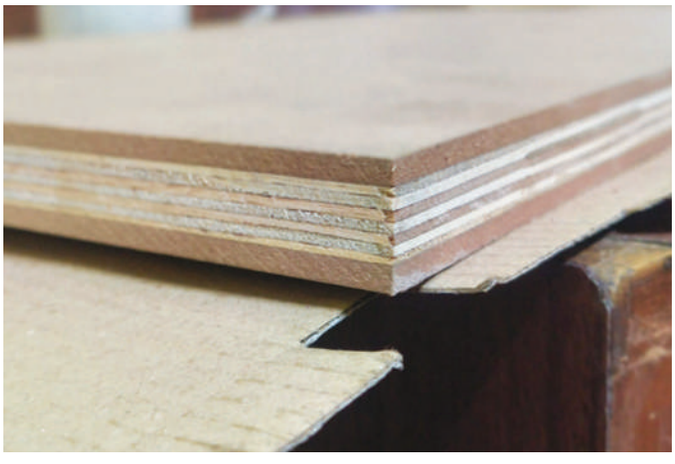
The hybrid plywood is developed in alignment with existing BIS standards:

- **IS:303 –** for Moisture Resistant/BWR plywood
- **IS:1659 –** For Block Board
- **IS:12406 –** for MDF/HDMR boards

While these standards cover individual components, it is important to note that there is currently no dedicated IS standard for hybrid plywood & Block board.

To address this gap, Greenply has taken an important industry initiative by sponsoring a project with IPIRTI (Indian Plywood Industries Research & Training Institute), in collaboration with FIPPI, to work towards developing a formal BIS standard for hybrid panels.





This step will help bring clarity, consistency, and confidence to the market as the use of such advanced panel products continues to grow.

Product Construction and Key Features

Greenply's hybrid plywood & Block board is designed with a balanced and precise construction:

- ✓ Base Core: Made from calibrated plywood/Block board using alternate or single hardwood species
- ✓ Double Calibration: Ensures thickness tolerance of ±0.20 mm at core level
- ✓ Surface Layers: 3 mm HDMR boards on both sides with density 750 kg/m^3 and above
- ✓ Final Accuracy: Finished panel achieves tight tolerance within ±0.20 mm

This structure creates a panel that is strong from inside and smooth on the outside.

Benefits for Furniture Manufacturers and OEMs

The real advantage of hybrid plywood & Block board lies in how it performs during actual furniture manufacturing.

For OEMs and furniture manufacturers, this means:

- ✓ Better Durability: Strong core ensures long-lasting furniture
- ✓ Excellent Workability: Smooth surface allows easy cutting, routing, and machining
- ✓ Superior Finish Quality: Ideal for painting, polishing, and lamination
- ✓ Time Saving: No need for additional MDF pasting or surface preparation
- ✓ Dimensional Accuracy: Tight thickness control ensures perfect fitting in modular designs
- ✓ Higher Productivity: Reduced processing steps improve overall efficiency

This combination makes the product highly suitable for modular furniture, wardrobes, cabinets, partitions, and interior paneling.

Product Testing and Performance

To ensure consistent quality, the product is tested as per relevant standards:

- Bonding Strength: As per IS:303/IS:1659 requirements
- Panel Stability: Maintains flatness and dimensional consistency
- Surface Quality: Smooth & uniform for better finishing
- Moisture Resistance: Suitable for interior applications
- Adhesion Strength: Strong bonding between plywood core and HDMR layers

These performance checks ensure that the panel delivers both strength and finish in real applications.

Sizes and Availability

The product is available in practical and industry-standard configurations:

- Standard Size: 2440 mm × 1220 mm (8 ft × 4 ft)
- Thickness Options: 16 mm, 18 mm, and 25 mm
- Customization: Available as per project requirements.

3. Greenply Prelaminated Plywood

The Indian furniture and OEM industry is emerging export sector in Indian Economy, witch has a lot to offer to the world in the time to come. With mandatory BIS QCO norms—a noticeable gap has emerged in the availability of ready-to-use, high-quality laminated panels thought Prelaminated particle board & MDF of superior grade is available but similar grade in ply was the need.What was once easily sourced from global markets has suddenly become scarce, leaving manufacturers searching for a dependable and efficient alternative.

But every disruption brings opportunity

This vacuum has accelerated a clear shift in demand. Today's furniture manufacturers are not just looking for strength—they want speed, consistency, and convenience. The need of the hour is a panel that reduces production steps, ensures a flawless finish, and performs reliably across applications.

Stepping into this space, Greenply has introduced Prelaminated Plywood—a thoughtfully engineered solution designed specifically for modern manufacturing needs. By combining the robustness of plywood with a factory-finished decorative surface, the product eliminates the need for secondary lamination processes at the user end.

The advantage is immediate and impactful. Manufacturers benefit from:

- ✓ Reduced processing time and labour
- ✓ Uniform, high-quality surface finish
- ✓ Improved workability for modular and OEM production
- ✓ Greater control over consistency and output

At its foundation, the product continues to meet trusted BIS standards: IS:303 – Moisture Resistant (MR/BWR) Grade & IS:710 – Marine (BWP) Grade

This ensures that while the surface delivers superior aesthetics, the core remains uncompromised—offering strength, durability, and moisture resistance required for long-term performance.

In collaboration with FIPPI and IPIRTI, Greenply is actively supporting the creation of standardized norms for prelaminated plywood—covering testing methods, quality benchmarks, and performance expectations. This initiative aims to bring structure and credibility to a rapidly growing product category.

In many ways, prelaminated plywood is more than just a new offering—it is a strategic response to a changing market landscape. By addressing the dual need for efficiency and aesthetics, it positions itself as a strong, homegrown solution for India's evolving furniture and interior ecosystem.

A challenge in supply has now transformed into an opportunity for innovation—and prelaminated plywood is leading that transformation.

Product Highlights: Engineered for Precision & Performance

a) Strong & Stable Core

Crafted using selected hardwood species, the base ply is designed for high strength and dimensional stability. A defect-free construction ensures a uniform, durable core that performs consistently across applications.

b) Precision with Double Calibration

With advanced double calibration, the panel maintains a tight thickness tolerance of ±0.20 mm—a critical advantage for modular furniture, where accuracy defines the quality of fit and finish.

c) Superior Mat Formation

A carefully engineered, gap-free and overlap-free mat ensures uniform density throughout the panel. This results in better bonding, enhanced strength, and a flawless surface finish.

d) Durable & Decorative Surface

The panel is finished with 80 GSM melamine-impregnated decorative paper, offering:

- High scratch and wear resistance
- Improved moisture protection
- Long-lasting surface quality

Using optimized pressing technology, LVP (Laminated Veneer Paper) is seamlessly bonded to the calibrated plywood—delivering both durability and refined aesthetics.

Available designs include Frosty White, Wood Textures, Antique Finishes, and other contemporary options to suit modern interiors.

Performance You Can Trust

Every panel is rigorously tested to ensure reliability:

- Bonding Strength: As per IS:303 / IS:710 standards
- Delamination Resistance: Proven durability under moisture variations
- Thickness Accuracy: Controlled within ±0.20 mm
- Surface Quality: Smooth, uniform, and resistant to scratches & stains
- Core Strength: Gap-free construction enhances load bearing and screw holding capacity

Sizes & Availability

- Standard Size: 2440 × 1220 mm (8 ft × 4 ft)
- Thickness: 16 mm & 18 mm
- Custom Sizes: Available to meet specific project needs.❑

AK Apple Ply Ushers in a New Era of 100% Birch Plywood Manufacturing in India

Dr. Prasanth M.A.
Director
AK Apple Ply

India's plywood industry is witnessing a significant milestone with AK Apple Ply emerging as the first company in the country to manufacture 100% Birch Plywood domestically. This development marks a decisive shift for an industry that has long relied on imports to meet the demand for high-performance Birch plywood used in specialized applications.

For years, India has had a consistent requirement for 100% Birch plywood, particularly in niche but critical segments such as toys, premium furniture, shuttering, and foam work. These applications demand uniform strength, superior finish, and durability—qualities that Birch plywood is globally known for. However, the absence of domestic manufacturing meant that this demand was largely fulfilled through imports.

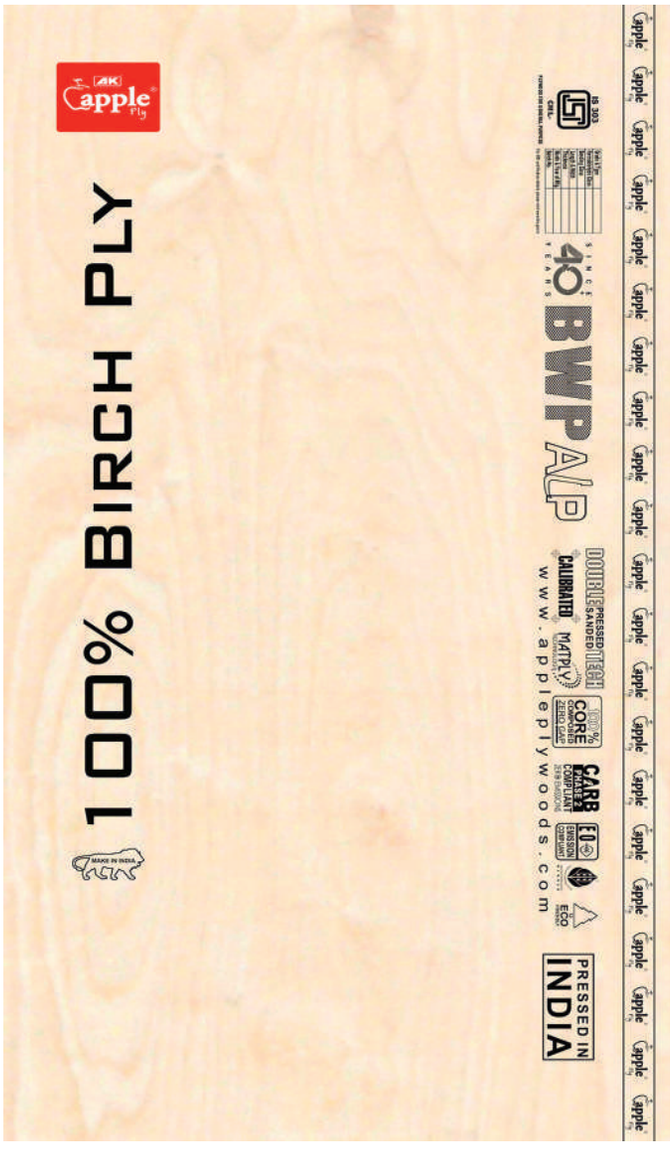
The scenario changed with the implementation of the Quality Control Order (QCO) for plywood. While the regulation was a step forward in ensuring standardized quality across the industry, it also posed challenges by restricting the easy import of specialized plywood products. Recognizing this gap and the pressing need of the market, AK Apple Ply took a strategic and forward-looking approach.

Instead of depending on finished imports, the company began importing high-quality Birch core and face veneers, enabling them to manufacture 100% Birch plywood within India. This hybrid model not only aligns with regulatory requirements but also ensures that Indian consumers continue to have access to premium-grade products.

One of the standout features of AK Apple Ply's offering is its 18mm Birch ply, which is engineered using 15 layers of fully composed core veneers and two Birch face. The plywood is meticulously calibrated, ensuring uniform thickness, enhanced strength, and superior bonding quality. Such precision manufacturing places the product at par with international standards.

The company has introduced its Birch plywood range in both BWP (Boiling Water Proof) and BWR (Boiling Water Resistant) grades, catering to a wide spectrum of applications. Further strengthening its market presence, AK Apple Ply manufacturing plywood since forty years, is currently producing a comprehensive range of thicknesses, from 4 mm to 25 mm, thereby addressing diverse industrial and commercial requirements.

This development highlights the importance of greater industry collaboration in improving cost efficiency. By working collectively with other manufacturers and importing



Birch core and face veneers in larger volumes, the industries can significantly reduce input costs. Such coordinated efforts have the potential to make high-quality Birch plywood more affordable and accessible in the Indian market, while also strengthening domestic manufacturing capabilities.

This initiative not only reflects innovation and adaptability but also signals a broader shift towards self-reliance in specialized plywood segments. With AK Apple Ply leading the way, India's plywood industry is poised to reduce dependency on imports, improve quality standards, and unlock new opportunities in both domestic and export markets.

As the industry evolves, such pioneering efforts underline the importance of strategic thinking, regulatory alignment, and collaborative growth—setting a strong foundation for the future of engineered wood products in India.❑

India has become the world's fourth – largest furniture market, reaching approximately USD 22 billion in value. The best part is that it largely relies on its own manufacturing to cater to the ever-growing demand for plain boards and advanced decorative panels

Rajeshwar Nair
Vice President & Plant Head
Balaji Action Buildwell Pvt. Ltd.

The Indian furniture market is undergoing a significant change, shifting from a highly fragmented and unorganised structure to a more consolidated and competitive landscape. Rapid urbanisation, increasing disposable incomes, and global integration are reshaping industry, and fostering efficiency. It also emerging as strategic hub in the Asia-pacific furniture economy. Another major change witnessed by this segment is shifting dominance of Plywood to Engineered Wood.

Action TESA, the leader of manufacturing Engineered Wood played a key role in this transformation. It not only presented the market with Category leader HDHMR, superior Boilo and value for money Moist Master, it also complimented the segment with great range with matte finishes under brand name 'OrnaMatte', wide range of UV and Acrylic finishes beside over 150 shades of premium Pre-Laminated boards.

Action TESA, a brand of Balaji Action Buildwell Pvt. Ltd., has invested in advanced manufacturing technologies to support this evolving market. Through modern production infrastructure and continuous innovation, the company emerged as first choice of Interior designers, Architects and End users.

The Evolution of Super Matte Decorative Boards through Excimer Technology

Action TESA operates a state-of-the-art 126-meter UV Excimer coating line, which has been operational since 2023, enabling the production of super matte decorative boards with extremely low gloss levels ranging from 2–10 Gloss Units (GU).

Excimer curing is an advanced UV-based surface treatment technology used globally to produce ultra-matte finishes. In this process, excimer radiation interacts with the coating surface to create controlled micro-foldings at the microscopic level.

These micro-fold structures diffuse light reflection uniformly across the surface, producing an extremely low-gloss, silky, and smooth matte appearance with superior tactile properties.

Unlike conventional matte coatings produced through standard paint or lacquer systems, the excimer process modifies the physical structure of the coating surface itself, rather than relying on chemical matting additives. This results in:

- Uniform ultra-matte appearance
- Excellent anti-fingerprint characteristics
- Enhanced surface durability
- Consistent gloss levels across the panel surface

Through this technology, Action TESA manufactures super matte decorative boards that set world-class benchmarks for premium interior surfaces.

OrnaMatte, Gold Without Glitter

Staying true to its positioning, Action TESA introduces OrnaMatte, its excimer-finished decorative boards crafted to express understated luxury. Designed to combine refined aesthetics with advanced coating technology, OrnaMatte reflects the richness of gold without the distraction of glitter.

OrnaMatte offers architects, designers, and furniture manufacturers a premium surface that balances sophistication with functionality and durability.

Key Attributes

Anti-Fingerprint Surface

The micro-structured excimer coating reduces fingerprint visibility and helps maintain a clean and elegant appearance even with frequent handling.

Surface Coating Deactivation Technology

Advanced coating technology ensures uniform matte characteristics across the entire surface while allowing a wide palette of colours and textures.

3H Scratch Resistance

The engineered surface offers enhanced scratch resistance and durability while preserving the distinctive ultra-matte finish.

High Gloss UV Coated MDF Panels

In addition to super matte panels, Action TESA manufactures High Gloss UV Coated MDF Boards, which are ready-to-use decorative panels requiring no additional surface finishing.

These boards are produced using high-quality European decorative papers laminated on exterior grade MDF boards, followed by a specialized pre-lamination process before UV coating.

The panels undergo a multi-stage UV curing process consisting of up to nine coating layers, resulting in:

- Ultra-smooth high gloss surface finish
- High surface hardness and durability
- Improved scratch resistance
- Consistent gloss levels and decorative quality

This advanced UV coating process ensures superior surface performance and aesthetic appeal for modern furniture and interior applications.

Acrylic Laminated MDF Boards

Further expanding its portfolio of premium decorative surfaces, Action TESA also produces High Gloss Acrylic Surface MDF Boards.

TESA Acrylic Boards combine the appearance of solid acrylic surfaces with the structural stability of MDF, delivering an ultra-high gloss finish with near mirror-like reflectivity.

These boards offer:

- Mirror-like high gloss surface quality
- Rich colour depth and clarity
- Smooth surfaces that are easy to clean and maintain
- Contemporary designs suitable for modern interiors

The acrylic panel collection includes a wide range of distinctive colours and designs, enabling designers and furniture manufacturers to create visually striking interiors.

Application Areas

Action TESA decorative panels are widely used in the furniture and interior design industry, including:

- Kitchen shutters
- Modular kitchen furniture
- Sliding wardrobes
- Wall paneling
- Furniture panels
- Decorative display panels
- Retail fixtures
- Product display units
- Interior wall cladding

These panels provide designers and manufacturers with versatile materials suitable for both residential and commercial interiors.

Through continued investment in advanced manufacturing and coating technologies, Action TESA is strengthening India's position as a global hub for high-value decorative panels. The company remains committed to driving innovation, elevating quality benchmarks, and enabling the next phase of growth in the furniture and interior design industry.❑

Development of Innovative Veneered Decorative MDF Products at Century Plyboards (India) Ltd.

The Indian wood panel industry has been undergoing a significant transition from conventional materials toward engineered, value-added products tailored for modern furniture and interior applications. Among the leading contributors to this transformation is Century Plyboards (India) Ltd., which has leveraged its strong manufacturing base and R&D capabilities to develop innovative decorative panel solutions, including high-quality veneered MDF products.

Sumit Roy, *Manager*
Century Plyboards (I) Limited

Emergence of Veneered Decorative MDF as a Premium Segment

Traditionally, decorative veneers have been associated with plywood substrates. However, with the rapid growth of MDF production in India and its increasing acceptance in modular furniture and interior applications, Century Plyboards has strategically expanded into veneered MDF panels. These panels combine the superior surface uniformity of MDF with the aesthetic richness of natural and engineered decorative veneers.

The company's innovation lies in adapting established veneering practices—traditionally used for plywood—to MDF substrates while ensuring performance consistency, dimensional stability, and superior surface finish.

Product Concept and Technical Features

The veneered decorative MDF panels developed by Century Plyboards consist of a highdensity MDF core (typically ranging from 3 mm to 25 mm thickness) overlaid with carefully selected decorative face veneers (0.15–0.4 mm thick). These veneers include premium natural species such as teak, walnut, oak, ash, and beech, along with engineered/ reconstituted veneers designed for uniform grain and color consistency.

Key technical features include:

- **Smooth and Uniform Surface:** MDF provides an base, free from core gaps or grain irregularities, ensuring flawless veneer bonding.
- **Dimensional Stability:** Reduced warping and twisting compared to solid wood.
- **Precision Machinability:** Ideal for CNC routing, edge profiling, and modular furniture manufacturing.
- **Enhanced Aesthetics:** Natural wood appearance with consistent grain matching and superior finishing quality.

Manufacturing Process Innovation

Century Plyboards has adopted a refined manufacturing process aligned with global best practices while incorporating learnings from Indian standards such as IS 1328:2025 Veneered Decorative Plywood Specification.

The key stages include:

1. MDF Substrate Preparation

Incoming MDF boards are calibrated and conditioned to maintain moisture content within 6–10%, ensuring compatibility with veneer bonding.

2. Veneer Selection and Preparation

Decorative veneers are carefully graded for surface quality, grain uniformity, and defects. Moisture content is controlled within 8–12% to prevent cracking and ensure bonding integrity.

3. Adhesive System Optimization

Advanced urea-formaldehyde (UF) and melamine-urea-formaldehyde (MUF) resin systems are used, with controlled spread rates to achieve optimal bonding strength and reduced emissions.

4. Pre-Pressing and Hot Pressing Technology

- Cold pressing for 30-60 min at 12 kg/cm2 ensures initial bonding and removal of entrapped air.
- Hot pressing is carried out under controlled

conditions (110–115°C, ~12 kg/cm^2 pressure, 4.5-5.5 min), ensuring strong adhesion and surface consolidation.

5. **Post-Processing and Finishing**

Panels undergo conditioning for 24 hours, precision trimming, and wide belt sanding. Value addition is achieved through PU, polyester, or melamine coatings, offering options from matte to high-gloss finishes.

Quality Assurance and Standardization

Although specific Indian standards for veneered MDF are still evolving, Century Plyboards aligns its product quality with the principles of IS 1328:2025 Veneered Decorative Plywood Specification to maintain high performance benchmarks.

Key quality parameters include:

- **Bond Strength:** Resistance to delamination under service conditions
- **Surface Integrity:** Free from cracks, patches, and visual defects
- **Moisture Control:** Maintained within 5–15%
- **Formaldehyde Emission:** Compliance with E1 grade emission standards
- **Dimensional Tolerances:** Tight thickness control for precision applications

In-house testing facilities ensure consistent adherence to these parameters, reinforcing product reliability.

Market Relevance and Commercial Viability

Century Plyboards has strategically positioned veneered MDF as a premium yet costeffective alternative to solid wood and veneered plywood. The product addresses the evolving needs of:

- Modular furniture manufacturers
- Interior designers and architects
- Real estate developers
- Retail and commercial fit-out sectors

With India's MDF market growing at an estimated CAGR of 15–20%, the demand for ready to-use decorative panels is increasing rapidly. Veneered MDF panels reduce processing time for furniture manufacturers, offering factory-finished surfaces that enhance productivity and consistency.

Competitive Advantages Over Conventional Materials

The innovative veneered MDF products offer several advantages:

- Superior surface finish compared to plywood
- Uniform thickness and density
- Lower overall cost for premium aesthetics
- Ease of machining and finishing
- Reduced material wastage in furniture production

These advantages make veneered MDF particularly suitable for modern, large-scale furniture manufacturing environments.

Risk Mitigation and Process Control

Century Plyboards has addressed key manufacturing risks through process optimization:

- **Raw Material Variability:** Strategic sourcing and grading of veneers and MDF

American walnut-MDF product.

- **Bonding Reliability:** Controlled adhesive formulation and pressing parameters
- **Veneer Cracking:** Moisture conditioning and handling protocols
- **Market Competition:** Focus on premium finishes and consistent quality

Future Product Development

Building on its current capabilities, Century Plyboards is actively exploring next-generation veneered MDF products, including:

- Fire-retardant veneered MDF panels
- Moisture-resistant and exterior-grade variants
- Low-emission and eco-certified panels
- Pre-finished, ready-to-install decorative boards

These developments align with global trends in sustainable and high-performance building materials.

Conclusion

The development of veneered MDF panels by Century Plyboards (India) Ltd. represents a significant step forward in the Indian decorative panel industry. By integrating advanced manufacturing techniques with established quality benchmarks such as IS 1328:2025 Veneered Decorative Plywood Specification, the company has successfully created a product that bridges aesthetics, performance, and cost efficiency.

As the demand for engineered wood products continues to grow, veneered MDF is poised to become a key material in the future of furniture and interior design in India, offering a compelling alternative to traditional materials while supporting industrial scalability and design innovation.❑

BWP High – Density Fibreboard: Addressing a Long – Standing Need in the Indian Furniture Industry

Purushottam Sharma
Head–Product Development & Research,
Greenpanel Industries Ltd.

For many years, the Indian furniture manufacturing community has consistently highlighted a critical gap in the availability of engineered panels—materials that can reliably withstand high moisture exposure while maintaining dimensional stability and mechanical strength. This need has been particularly evident in applications such as kitchens, bathrooms, and coastal installations, where conventional boards often fall short over time.

As furniture design in India evolves toward modular systems, precision manufacturing, and longer service life expectations, the demand for high-performance substrates has only intensified. In this context, the emergence of Boiling Water Proof (BWP) High-Density Fibreboard (HDF) represents a significant and timely development for industry.

Recent advancements, including those by Greenpanel Industries Ltd., indicate that the industry is actively responding to this long-standing requirement with solutions that combine strength, stability, and moisture resistance in a single panel.

Why the Industry Needed a Shift:

Furniture manufacturers across India have traditionally worked with MDF, particleboard, and plywood, each offering its own advantages. However, a persistent challenge has been achieving a balance between: (a) High strength and screw holding capacity (b) Resistance to moisture and swelling (c) Dimensional stability over time (d) Consistency in machining and finishing

In high-humidity conditions or moisture-exposed applications, conventional MDF and particleboard tend to exhibit swelling and loss of strength, while plywood—though moisture resistant—often presents limitations in surface uniformity and machining precision.

This gap has led to a continuous search within the furniture community for a material that can bridge these performance limitations without compromising process efficiency.

What Makes BWP HDF Different:

BWP-grade HDF addresses these challenges through a combination of high density (~1100 kg/m^3) and enhanced resin technology. The result is a panel with a highly compact fibre structure and strong internal bonding.

For furniture manufacturers, this translates into: (a) Superior screw holding strength, especially at edges (b) Improved load-bearing capacity for structural components (c) Reduced deformation during machining and service.

Such characteristics are particularly relevant for modular furniture systems, where precision and repeatability are essential.

Performance in Moisture-Prone Applications:

One of the most significant advantages of BWP HDF is its ability to withstand severe moisture exposure, including boiling water conditions. This is a critical improvement for applications where panels are exposed to: (a) High humidity

(b) Intermittent water contact (c) Temperature fluctuations

The dense fibre network, combined with a robust resin matrix, helps in: (a) Minimizing water absorption (b) Reducing thickness swelling (c) Maintaining structural integrity over time

For furniture manufacturers, this means fewer failures, improved product reliability, and better customer satisfaction in real-world conditions.

Dimensional Stability: A Practical Advantage:

In practical applications, dimensional stability is as important as strength. Warping, cupping, and joint failure are common issues faced in moisture-sensitive environments.

BWP HDF demonstrates strong resistance to such issues, maintaining its form even under cyclic wet–dry conditions. This stability is particularly valuable in: (a) Modular kitchen components (b) Bathroom vanities (c) Large panel shutters and partitions

It ensures that finished products retain their alignment and functionality over extended periods.

Processing Benefits for Manufacturers:

Beyond performance in service, ease of processing remains a key consideration for the furniture industry. High-density HDF offers: (a) Smooth and uniform surfaces for lamination and coating (b) Consistent behaviour in CNC machining (c) Reduced fibre tear-out and edge defects.

Additionally, developments such as uniform core structures (including darker core variants) support better edge aesthetics, which is increasingly important in modern furniture design.

A Material Aligned with Industry Evolution:

The Indian furniture sector is rapidly transitioning toward: (a) Factory-made modular furniture (b) Automated and CNC-based production (c) Higher quality benchmarks and durability expectations

Materials like BWP HDF align well with this transformation by offering both performance reliability and manufacturing efficiency.

Conclusion:

The introduction of Boiling Water Proof High-Density Fibreboard marks a meaningful step forward in addressing a long-standing requirement of the Indian furniture industry. By combining high density, moisture resistance, and dimensional stability, it offers a practical solution to challenges that manufacturers have faced for years.

As the industry continues to evolve, such advancements are expected to play a crucial role in improving product quality, reducing failure rates, and enabling furniture manufacturers to confidently meet the growing expectations of end users.❑

FIPPI Urges Government to Implement the Furniture (Quality Control) Order, 2025 on its Scheduled Date of 13th February 2026 to Close Loopholes in Plywood & Panel QCOs

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/80/3/FurnitureQCO-2025-26 January 6, 2026

To,
Shri Amardeep Singh Bhatia
Secretary
Department for Promotion of Industry and Internal Trade (DPIIT)
Ministry of Commerce & Industry
Vanijya Bhawan, New Delhi.

Kind Attention:
Shri Mohammad Isharar Ali,
Director,
Department for Promotion of Industry and Internal Trade (DPIIT).

Subject: Request for Immediate Implementation of the Furniture (Quality Control) Order, 2025 – To Close Loopholes in Plywood & Panel QCOs, Boost Domestic Value Addition, and Promote Agroforestry.

Respected Sir,

At the outset, the Federation of Indian Plywood and Panel Industry (FIPPI) reiterates its appreciation for the proactive role played by the Department for Promotion of Industry and Internal Trade (DPIIT) in supporting the sector through the enforcement of the mandatory Quality Control Orders (QCOs) on plywood and panel products, effective from February 2025.

FIPPI wishes to share that the QCOs have initiated a once-in-a-generation transformation in the Indian plywood and panel sector. By bringing unorganized players into the formal quality and taxation framework, these orders are promoting quality, discipline, transparency, and, importantly, increased tax revenues for the government. Furthermore, by permitting the import of plywood and panel products only from foreign manufacturers holding a valid BIS license, the QCOs are facilitating import substitution. The assurance that all plywood and panel products available in the market conform to the minimum prescribed quality standards is significantly boosting consumer confidence in domestically manufactured products. This enhanced market confidence is, in turn, fostering an environment conducive to investment and capacity augmentation by domestic manufacturers.

In addition, the growing demand for agroforestry plantations resulting from the QCOs is contributing significantly to the expansion of green cover and climate mitigation. The plywood and panel industry is highly labour-intensive, providing employment to over 3.5 million people across plantation activities, processing, and allied operations, with a substantial concentration in rural and semi-urban areas. The expansion of domestic manufacturing driven by the QCOs is therefore

reinforcing employment across the value chain, strengthening rural economic ecosystems, and supporting inclusive and sustainable industrial growth.

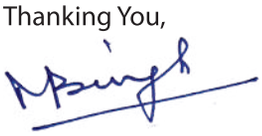
While the QCOs (Quality Control Orders) for plywood and panel products are already in effect, the QCOs for furniture are scheduled to come into force in February 2026, which has created a significant loophole for the circumvention of mandatory QCOs for plywood and panel products. Since furniture is typically being imported as fully assembled ready to sell as well as knock-down product – shipped in parts and assembled at the destination – this regulatory gap allows importers to bring in non-BIS-compliant plywood and panel products under the guise of finished furniture and furniture components. We highlighted this issue briefly vide our letter FIPPI/18A-2-2025 dated August 20, 2025.

Without the enforcement of QCOs on furniture, the effectiveness of the QCOs on plywood and panel products in restricting substandard imports is compromised. Moreover, the absence of furniture-specific QCOs hampers domestic value addition and employment generation, which are key objectives of the Government's Make in India and Atmanirbhar Bharat initiatives. Import substitution of furniture products through QCOs has the potential to boost demand for domestically manufactured plywood & panel products, agroforestry-sourced timber, thereby benefiting farmers, rural communities, and contributing to national climate mitigation efforts.

FIPPI places its full trust in the Bureau of Indian Standards (BIS) to continue strengthening testing infrastructure and the overall quality ecosystem in India. At the same time, we emphasize that this gradual improvement should not be used as a reason to delay the enforcement of QCOs on furniture, which must be implemented without any further delay to safeguard the integrity and effectiveness of the regulatory framework.

Therefore, FIPPI urges the Government of India to implement the Furniture (Quality Control) Order, 2025, as scheduled on 13th February 2026, without any delay. FIPPI assures its full support to furniture manufacturers throughout this transition period.

Thanking You,



Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

Government Issues Notification Implementing the Furniture (Quality Control) Order from its Scheduled Date of 13th February 2026 with Certain Amendments

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

CG-DL-E-13022026-270115

EXTRAORDINARY

PART II—Section 3—Sub-section (ii)

PUBLISHED BY AUTHORITY

No. 736] NEW DELHI, FRIDAY, FEBRUARY 13, 2026/MAGHA 24, 1947

MINISTRY OF COMMERCE AND INDUSTRY
(Department for Promotion of Industry and Internal Trade)

ORDER

New Delhi, the 12th February, 2026

S.O. 774(E).— In exercise of the powers conferred by section 16 of the Bureau of Indian Standards Act, 2016 (11 of 2016), the Central Government, after consulting the Bureau of Indian Standards, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following order to amend the Furniture (Quality Control) Order, 2025, namely: -

1. (1) This order may be called the Furniture (Quality Control) Amendment Order, 2026.

   (2) It shall come into force on the date of its publication in the Official Gazette.

2. In the Furniture (Quality Control) Order, 2025, to paragraph 2, after the third proviso the following provisos shall be inserted, namely:

Provided also that nothing in this order shall apply to import upto two hundred numbers of goods or articles specified in column(1) of the table for the purpose of research and development per financial year by the manufacturer of furniture certified by the Bureau or the manufacturer who has applied to the Bureau for certification of such goods and articles with the condition that such imported goods and articles shall not be sold commercially and shall be disposed of as a scrap and the manufacturers shall maintain a record of such goods or articles year-wise and furnish the same to the Central Government:

Provided also that nothing in this order shall apply to goods or articles specified in column (1) of the table domestically

manufactured or imported before the date of implementation of this order by the manufacturer certified by the Bureau or the manufacturer who has applied to the Bureau for certification of the relevant goods and articles and such manufacturer shall be permitted to sell or display or offer to sell such declared stock up to twelve months from the date of implementation, subject to the condition that such manufacturer shall furnishes a self declaration to this effect to the Bureau:

Provided also that nothing in this order shall apply to non-BIS marked goods or articles or its components/subassemblies imported by the manufacturer of furniture in India for export of furniture subject to the condition that the manufacturer furnishes a self-declaration in its letter-head signed by its authorised signatory, to the Central Government mentioning the invoice number and other relevant details of the import consignment and an undertaking that the goods or articles so imported shall not be put to any other use or sold in the domestic market and the manufacturer shall maintain the record of such goods and articles imported and its product for verification or audit by the Government authorities concerned".

[F. No. P-14031/99/2019-CI]
SANJIV, Jt. Secy.

Note.- The principal order was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (ii) vide number S.O. 801(E), dated the 13th February, 2025.

FIPPI Submits Comments to BIS on Draft Indian Standard: Wood-based panels – Determination of formaldehyde release: Desiccator method – Method of Tests

DOC. NO.	**CED 20 (33931) WC**
TITLE	**Draft Indian Standard** Wood-based panels – Determination of formaldehyde release–: Desiccator method – Method of Tests
NAME OF THE COMMENTATOR / ORGANIZATION	Federation of Indian Plywood and Panel Industry (FIPPI)

Sl No. **(1)**	**Clause/Sub- clause/ Para No.** **(2)**	**Comments/ Suggestions** **(3)**	**Modified Wording of the Clause** **(4)**	**Reasons/ Justifications for the Proposed Changes** **(5)**
1	5.12 Balance	Accuracy of weighing balance least count 0.001 g to replace with 0.0001 g	- -	This will enhance the accuracy by ten times and also help create harmonization with ISO standards
2	6.5 - Conditioning & 7.2-Test condition	25deg C to replace with 20 deg C		At 25°C, we cannot directly compare the E0, E1, and E2 emission values for wood-based products with those specified in foreign standards, where the reference temperature is 20°C. Therefore, harmonization of such standards may lead to differences in the results and their interpretation.❑

FIPPI Submits comments on Wide Circulation Draft of IS 2202 (Part 1 & Part 2) – Wooden Flush Door Shutters

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/16/3-2-2026 6 February 2026

To,
Shri Pradeep Singh Shekhawat
Scientist-E / Director
Civil Engineering Department
Bureau of Indian Standards, Manak Bhavan
9, Bahadur Shah Zafar Marg, New Delhi – 110 002.

Subject: Submission of comments on Wide Circulation Draft of IS 2202 (Part 1 & Part 2) – Wooden Flush Door Shutters.

Reference: Email dated 7 January 2026; Document No. CED 11(33345) WC Draft IS 2202.

Respected Sir,

The Federation of Indian Plywood & Panel Industry (FIPPI) respectfully submits its comments on the Wide Circulation Draft of IS 2202 – Wooden Flush Door Shutters – Specification (Part 1 & Part 2). The comments have been compiled based on structured inputs received from flush door manufacturers, as well as technical deliberations held during the stakeholder consultation meeting organized by the Institute of Wood Science and Technology (IWST) on 4 February 2026 to discuss on issues related to wooden flush door shutters in the context of the Wide Circulation Draft IS 2202 (Part 1 & Part 2).

We believe that addressing the concerns of applicable standards through a structured, inclusive, and technically sound consultative process will help ensure that the standards remain robust, practical, and implementable across manufacturers of all scales, while meeting quality, performance, and compliance objectives.

The detailed observations and comments of FIPPI are enclosed herewith as Annexure-I for your kind consideration.

Thanking you.

Yours sincerely,

Dr. M. P. Singh
Director General
Federation of Indian Plywood & Panel Industry (FIPPI)

Copy to:
Dr. Shakti Singh Chauhan
Director cum Chairman, CED 20
Institute of Wood Science and Technology (IWST),
Bangalore

Annexure I

FIPPI's COMMENTS ON WIDE CIRCULATED DRAFT IS 2202 Part 1 and Part 2

Doc. No./ IS Number & TITLE: CED 11(33345) WC/ IS 2202- Draft Indian Standard for Wooden Door Shutters (Solid Core Type) — Specification [Eighth revision of IS 2202 (Part 1) and Amalgamating IS 2202 (Part 2): 2022] ICS 91.060.50.

NAME OF THE COMMENTATOR/ORGANIZATION: FEDERATION OF INDIAN PLYWOOD AND PANEL INDUSTRY (FIPPI).

Sl. No. (1)	Clause/Sub-clause/Para No. (2)	Comments/ Suggestion (3)	Modified Wordings (4)	Reasons/ Justifications for the Proposed Changes (5)
1.	**Title of IS 2202 Wooden Door Shutters (Solid Core Type) — Specification** [Eighth Revision of IS 2202 (Part 1) and Amalgamating IS 2202 (Part 2):2022]	We request to abandon the proposed decision to amalgamate the standard IS 2202 Part 1 & Part 2	Wooden Flush Door Shutters (Solid Core Type) – Specification	• Flush door is a simple, flat door with smooth surfaces on both sides, lacking panels or decorative grooves, designed for a sleek, modern look where the door face sits perfectly level (flush) with the frame. • After careful review and internal assessment, we are of the view that maintaining IS 2202 Part 1 and IS 2202 Part 2 as separate standards would ensure better clarity, effective implementation, and continued compliance with the distinct technical and performance requirements covered under each part. The segregation of these standards helps manufacturers, testing agencies, and end users to clearly understand and comply with the applicable provisions without ambiguity.
2.	**1. SCOPE**	No change		
3.	**2 REFERENCES**	No change		
4.	**3 TERMINOLOGY**	No change		
5.	**4 TYPE, GRADE AND CONSTRUCTION** 4.1 Based on core construction, door shutters shall be classified into two types as follows: a) Box type construction (Core with stiles, rails and face panels); and b) Door blanks type construction (Core of door blank without stiles and rails, with or without face panels).	Technical	We want a separate standard for blank type doors (no rail and stiles)	We request to separate Door blanks type construction for better understanding.

6.	**Clause 5** Sizes	Remove the restriction of Table -1	Prevalent common the door shutters generally conform to the sizes given in Table 1. For grant of license, licensee can provide the maximum length and width of flush door based on the available production capacity rather than restricting the license to specific predefined sizes. To cover the thickness range, licensee can provide the maximum and minimum thickness he can produce, other sizes, that is, width and thickness, as agreed to between the manufacturer and the purchaser, are also permitted. Table 1 can be retained for general guidance, not compliance.	• In actual practice, the standard sizes of flush doors are seldom used exactly as specified. Doors are normally manufactured slightly oversized and are then trimmed or adjusted at the site or at the workshop to suit the exact opening of the door frame. This is necessary because door frames, especially those made at site or by different manufacturers, often vary in their internal dimensions due to construction tolerances, workmanship, and plastering or finishing thickness. • Grouping based on size and thickness is impractical for manufacturers who produce all variants. This approach will provide greater flexibility in manufacturing while ensuring full compliance with the standard. We request that the standard may permit the manufacture of any size and thickness within the approved maximum dimensions, similar to the practice followed under IS 303. Such a provision would eliminate unnecessary limitations, simplify implementation, and align the standard with current industry practices without compromising product quality or performance.
7.	**6.3 Face Panels** **6.3.2 Particle Board:** Particle board used as face panel in manufacturing of door shutters shall conform to the requirements of MR grade for MR grade door shutters, and HMR grade for BWR and BWP grade door shutters as per IS 3087. **6.3.3 Medium Density Fibre (MDF) Board:** MDF board used as face panel in manufacturing of door shutters shall conform to	Particle board, MDF & HDF used in door shutter under BOX/ BLANK type construction, conformity of glue adhesion test confined to MR and BWR grade.	---	BWP grade needs 4h boiling at 100-degree Celsius which is difficult for door made with PB, MDF & HDF used as infill/face panel. For MDF and PB boiling criteria should be reviewed as discussed in meeting. To exclude BWP grade keeping MR and BWR grade which applies when raw material is used other than plywood and HDF

	the requirements of MR grade for MR grade door shutters, and HMR-GP grade for BWR and BWP grade door shutters as per IS 12406. **6.3.5 Fibre Hardboard:** Fibre hardboard used as face panel in manufacturing of door shutters shall conform to the requirements of standard hardboard for MR grade door shutters and tempered hardboard for BWR and BWP grade door shutters as per IS 1658. **6.7 Door Blanks** **6.7.1 Particle Board:** Particle board, used as door blank in manufacturing of door shutters, shall conform to the requirements of MR grade for MR Grade door shutters and HMR grade for BWR and BWP grade door shutters as per IS 3087. **6.7.2 Medium Density Fibre Board:** MDF board, used as door blank in manufacturing door shutters, shall conform to the requirements of MR grade for MR Grade door shutters and HMR-GP grade for BWR and BWP grade door shutters as per IS 12406. **6.8 Alternative Materials** Laminated veneer lumber (LVL) (see IS 14616) and veneer laminated lumber (VLL) (see IS 16171) of any grade produced with any suitable synthetic resins, may be used for stiles and rails, provided that the door shutter shall comply with the requirements given in 9. MDF board and		

	HDF board conforming to MR grade for MR Grade door shutters and HMR-GP grade for BWR and BWP grade door shutters as per IS 12406, except density in case of HDF board, may also be used for stiles and rails.			
8.	**Clause 6.4** Decorative Skins of Face Panels 6.4.1 Decorative skin(s) used with face panels (see 6.3) can be of poly vinyl chloride (PVC) foils or other type of foils (as agreed between the manufacturer and the purchaser) or acrylonitrile butadiene styrene (ABS) sheets and shall pass 1H of pencil hardness test as per IS 101 (Part 5/Sec 1). **6.4.2** Face panel of prelaminated MDF board or HDF board or particle board or any decorative laminates (as agreed between the manufacturer and the purchaser except post-forming laminates) or continuous pressed laminates (CPL) shall meet the requirement of abrasion resistance of 75 revolutions when tested for surface abrasion resistance test as per method given in IS 14587.	Decorative skin performance is under- defined.	Include peel strength, impact resistance and heat resistance tests.	Modern PVC / ABS / laminated skins require comprehensive evaluation.
9.	Clause 6.6.2: Particle Board, MDF Board, HDF Board and Fibre Hardboard Particle board/ MDF board/ HDF board/ fibre hardboard used as the infill-board in core of the door shutters shall be tested for the 2 h thickness swelling due to general absorption as per IS 2380 (Part 17) and shall not exceed 5 percent. In	PB/MDF used as infill whose density less than 600 kg/m3 is recommended in draft standard.	We request to remove the specified density limit of 600 kg/m^3 for particle board and fibre board as prescribed.	• Density of MDF/PB whose lower limit starts with 600 kg/m3 and for HDF it starts more than 1000 kg/m3. • In practical manufacturing conditions, the density of particle board and fibre board may vary depending on raw material characteristics, intended application, and performance requirements. Fixing an upper density limit may unnecessarily restrict product development, despite the boards meeting

	addition, use of particle board and fibre board as infill-board of density less than 600 kg/m^3 is recommended.	Technical		all other prescribed physical, mechanical, and performance criteria. Boards with densities higher than 600 kg/m^3 can still fully comply with strength, durability, and serviceability requirements and may, in fact, offer improved performance for certain applications.
10.	**7 CONSTRUCTION** **7.1 Box Type Construction** **7.1.2** To hold the core, a frame comprising stiles and rails is provided. The width of the frame, including lipping where provided, shall be not less than 40 mm and not more than 75 mm. A second stile and rail of alternative material (other than LVL and VLL) (see 6.8) can also used; in such cases, the outer stile and rail shall be of timber or LVL or VLL and shall have minimum width of 30 mm after trimming and sizing. Butt joint shall not be used in stiles and rails and limited finger or scarf joints may be used in stiles at staggered locations, provided that, the door shutter shall comply with the requirements given in 9. The rails shall be made without any joints.		With reference to the construction requirements specified for door shutters, it is mentioned that limited finger or scarf joints may be used in stiles at staggered locations, whereas rails are required to be made without any joints. We request that the standard may be revised to permit the use of finger or scarf joints in rails also, subject to appropriate workmanship and bonding quality.	In practical manufacturing conditions, the availability of long, defect-free solid timber sections suitable for rails is increasingly limited. Allowing controlled and properly bonded joints in rails would enable better utilization of raw materials, reduce wastage, and support sustainable manufacturing practices, without compromising structural integrity or performance.
11.	**7 CONSTRUCTION** **7.4** Decorative laminates, PVC, ABS foils, CPL, MDFbboard, HDF board, fibre hardboard or similar facing options may be used as agreed between manufacturer and purchaser.	Technical	With reference to the clause stating that decorative laminates, PVC, ABS foils, CPL, MDF board, HDF board, fibre hardboard, or similar facing options may be used as agreed between the manufacturer and the purchaser, we request that film face may also be explicitly included in the list of permitted facing materials.	Film-faced panels are widely used in the industry and offer uniform surface finish, enhanced moisture resistance, abrasion resistance, and ease of maintenance. Their performance characteristics are well established and suitable for various applications where flush door shutters are used. Since the clause already allows facing materials to be used based on mutual agreement, explicitly mentioning film face

				would enhance its practical applicability and ease of compliance.
12.	**8 WORKMANSHIP AND FINISH** **8.4** Surface of the plywood face panels without any further crafting work, painting, polishing, shall be in conformity with type AA of IS 303 in case of non- decorative, and surface requirements as per IS 1328 in case of decorative type plywood face panels.	Allow the surface of plywood for Plywood face panel be in conformity with type AB, BB and CC also	Surface of the plywood face panels without any further crafting work, painting, polishing, shall be in conformity with type AA, AB, BB and CC of IS 303 in case of non-decorative, and surface requirements as per IS 1328 in case of decorative type plywood face panels. The surface of face panel is as agreed between the purchaser and manufacturer.	• As the quality of plywood face panel for crafting, painting and polishing is not required AA type surfaces in majority. • Allowing these surface grades would offer greater flexibility to manufacturers and align the standard with prevailing industry practices and varied end-use requirements. It may be noted that flush doors are widely used in applications where surface finishing such as lamination, veneering, painting, or other decorative treatments is carried out. In such cases, insisting on AA type surface quality may not be technically essential, as AB, BB, or CC grades are fully adequate to meet performance and aesthetic requirements after finishing, while still complying with all other structural and durability parameters of the standard. • Providing this option would help in cost optimization, reduce material wastage, and ensure better utilization of raw materials without compromising the functional performance, durability, or service life of flush door shutters.
13.	9 REQUIREMENTS	Technical	Technology and product-based innovations are changing rapidly. Multiple sandwich options exist with different panels such as PB, MDF, HDHMR, Hardboard etc. In such circumstances, we request to modify BWP and BWR grade tests by taking the sandwich and surface materials into consideration.	We submit that the existing BWP and BWR grade test requirements may not be fully representative of the performance characteristics of modern sandwich constructions. The interaction between core panels, surface materials, and bonding systems has a direct influence on test outcomes. Therefore, we request that the BWP and BWR grade test requirements be reviewed and suitably modified, taking into consideration the type of sandwich construction and surface materials used, rather than applying a uniform test criterion across all constructions.

14.	**9.1. Dimensions and Squareness Test** **9.1.1** Door shutters, when tested in accordance with IS 4020 (Part 2), the width and height of door shutter shall be within a limit of ± 5 mm. The door shutter shall not deviate by more than 1 mm on a length of 500 mm. The thickness of the door shutter shall be uniform throughout with the permissible variation of not more than 0.8 mm between any two points. The thickness of the shutter shall be within a limit of ± 1 mm.	Remove the requirement of thickness variation i.e. 0.8 mm between any two points	We request that the variation in thickness may be revised from the existing limit of 0.8 mm to 1.2 mm, and that the thickness of the flush door shutter may be permitted within a limit of 1.5 mm.	• Product is already having the permissible thickness tolerance i.e. + 1mm. So, variation in any two point is not actually required. • In practical manufacturing conditions, minor variations in thickness are inevitable due to factors such as veneer thickness tolerances, pressing parameters, moisture content variations, and sanding operations. The proposed limits are technically achievable, widely followed in industry practice, and do not adversely affect the structural integrity, performance, or serviceability of flush door shutters. Allowing the above tolerance would help in improving manufacturing efficiency, reducing rejection and wastage, and ensuring smoother compliance, while still maintaining the functional and performance requirements prescribed in the standard.
15.	**9.4** Impact Indentation Test: Door shutters, when tested in accordance with IS 4020 (Part 5), shall have no defects, such as cracking, tearing or delamination and the depth of indentation shall not be more than 0.2 mm.	Technical	We submit that the presently specified requirement that the depth of indentation shall not exceed 0.2 mm is not practically achievable under normal manufacturing and testing conditions. We propose to make the maximum limit 1mm.	• Based on industry experience and repeated testing, such a stringent limit does not adequately account for natural variations in material properties, density, veneer species, moisture content, and pressing parameters. We therefore request that the permissible depth of indentation be revised to a more practical and achievable limit, aligned with realistic manufacturing capabilities and field performance expectations. • Engineered panels such as MDF and particle board exhibit different surface deformation behavior compared to plywood; a higher limit better represents actual service performance without compromising functionality. • Presently timber being used is from Agroforestry, not from forests.

16.	**9.11. Varying Humidity Test** **9.11.2** This test shall be done only at least once in a year for a given construction of door shutter.	Technical	We request that the varying humidity test may be mandated to be conducted at least once in a year, irrespective of the type, size, or construction of the door shutter. Further, we request that the frequency of this test may be deleted from the standard and instead be specified in the product manual.	The varying humidity test is primarily intended to assess the dimensional stability and overall performance of a given manufacturing process under fluctuating environmental conditions. Limiting this test to once annually for a given manufacturing setup would be technically sufficient to demonstrate compliance, while also reducing repetitive testing, time delays, and unnecessary costs, without compromising product quality or end- use performance.
17.	**9.14 Glue Adhesion Test** **9.14.3** A door shutter shall be deemed to have passed the test if both the specimens tested pass the test when tested as per IS 4020 (Part 15). For BWP grade door, the test conditions are given in IS 4020 (Part 15). However, in case BWR grade door shutter, the specimen shall be submerged in boiling water for 2 h. And in case of MR grade, the specimen shall be submerged in water at 60°C ± 2 °C for 2 h.	Four-hour boiling test method does not adequately reflect performance of amino resin bonded MDF and particle board.	• The boiling test duration is stipulated as 4 hours for BWP grade and 2 hours for BWR grade. We propose that the boiling duration may be reduced to 2 hours for BWP grade and 1 hour for BWR grade. • Further, we request that the grade nomenclature may be renamed for better clarity and ease of understanding by consumers, as follows: MR Grade – Low Moisture Resistant • BWR Grade – Moderate Moisture Resistant • BWP Grade – High Moisture Resistant • Review and modify glue adhesion test methodology for engineered panels; introduce alternative or graded boiling / cyclic tests based on adhesive chemistry.	• When particle board conforming to IS 3087 is used in construction, it becomes practically difficult to achieve the existing boiling hour requirements, despite the product complying with all other relevant physical, mechanical, and performance parameters. Particle board has different structural characteristics compared to plywood, and prolonged boiling exposure does not realistically represent its intended end-use conditions. The boiling test is primarily intended to assess bond durability and resistance to moisture exposure. The proposed reduced boiling durations are technicallyadequate to evaluate adhesive performance and product integrity. Renaming the grades would provide clear performance levels of flush doors and help end users make informed product selections based on moisture resistance requirements, without altering the technical intent of the grades. • Amino resin based engineered panels are not directly comparable with phenolic plywood; applying identical boiling criteria results in technically unjustified failure despite acceptable service performance.

18.	**Clause 9.15:** Screw Withdrawal resistance test	Prescribed screw withdrawal value of 1000 N	• With reference to the screw withdrawal resistance test specified on the face of door shutters, we request that this requirement may be removed from the standard. • Reduce prescribed screw withdrawal value to 600–800 N when softwood (e.g., pine) rails and stiles are mostly used, as material declaration.	• Not required, this area is mainly covered by core (small wooden battons) and have lots of joints and cross bands. Also end user never apply screws on top side or bottom side of flush door. • The similar testing is also covered under clause 9.7 Shock resistance test. • In normal practice, screws are not fixed on the face of the door shutter; instead, they are primarily applied on the edge portions for fixing hinges, locks, and other hardware. Therefore, evaluating screw withdrawal resistance on the face does not provide relevant performance information. Moreover, the face of flush door shutters is generally intended for decorative finishes such as lamination, veneering, or painting, and subjecting it to screw withdrawal testing may lead to surface damage without offering any practical benefit in assessing product performance. • Pine timber has inherent low density and structural limitations; revised values ensure realistic performance assessment while maintaining hardware safety.
19.	**10.2 Criteria for Conformity** **Table 2** Sample Size and Criteria for Conformity Clause 10.1.3, 10.2.1 and 10.2.4	General	With reference to the random sampling requirements specified in Table 2, we wish to submit that the existing sample size continues to be a major concern for manufacturers, as there has been no change or relaxation in this requirement. We request that the sample size prescribed in Table 2 may be reviewed and reduced, adopting a more practical approach, while still maintaining the intent of quality and compliance.	• Allow one sample from each batch. • Batch: All the shutters of the same grade, type, core/infill-board and face materials and manufactured under similar conditions. • The current sample size prescribed for testing from a lot is considerably high and results in significant material loss, increased testing costs, and extended lead times, especially for large-size or high value door shutters. We submit that the objective of random sampling is to ensure process consistency and product conformity, which can be effectively achieved with a reduced and rationalized

				sample size, particularly when manufacturers are operating under controlled production conditions, consistent raw materials, and regular in-house quality checks.
20.	**11. Marking** 11.1 Each shutter shall be legibly and indelibly marked on any of its edges with the following information: a) Name of the manufacturer or brand name or trade-mark, if any; b) Type and grade of door shutter; c) Core/infill-board and face materials; d) Actual size (length, width & thickness) of the shutter in mm; e) Batch number; and f) Date of manufacture.	To mention in b) Construction	With reference to the marking requirements specified, it is stated that each door shutter shall be legibly and indelibly marked on any of its edges, we respectfully request that an additional option may be provided to allow marking on the door packing materials as well. a) Name of the manufacturer or brand name or trademark, if any. b) Type, construction and grade of door shutter; c) Core/infill-board and face materials; d) Actual size (length, width & thickness) of the shutter in mm; e) Batch number; and f) Date of manufacture	• Marking clause should incorporate construction details as box / blank type. • In practical manufacturing and supply conditions, marking directly on the edges of the door shutter may not always be feasible or desirable, particularly when shutters are supplied with factory finished edges, decorative treatments, or protective sealing, where permanent marking could affect appearance or finishing quality. Allowing marking on door packing materials would still ensure traceability, identification, and compliance, while avoiding potential surface damage to the shutter itself.
21.	Edge loading		Door shutters, when tested in accordance with IS 4020 (Part 7), the deflection of the edge at the maximum load shall not be more than 5 mm. On removal of the loads, the residual deflection shall not be more than 0.5 mm, failing which the test may be repeated on the other edge in the reverse direction. Also, there shall be no lateral buckling by more than 2 mm during loaded condition & no residual lateral buckling after removal of the load	Values of defection at max load and after removal of load (residual deflection) should be revised It should be 10 mm at max load and 2 mm after removal of load. And for lateral buckling it should be 5mm in load and after loading for residual lateral buckling it should be 2mm.

FIPPI Clarifies to DPIIT Regarding the List of Plywood Manufacturers, Consumption of Technical – Grade Urea and Proposed Mechanism to Monitor Its Use

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/Budget9/2025-26 February 20, 2026

To,
Shri Dheeraj Kumar Meena
Under Secretary to the Govt. of India
Consumer Industry Division
Department for Promotion of Industry & Internal Trade
Vanijya Bhawan, New Delhi.

Subject: Response to DPIIT's Request for the List of Plywood Manufacturers Along with Their Capacity to Assess the Total Demand for Technical-Grade Urea.

Respected Sir,

The Federation of Indian Plywood & Panel Industry (FIPPI) has been requested to provide the following information:

I. List of plywood manufacturers along with details of their installed production capacity

II. What is the Demand and consumption of Technical Grade urea (TGU) in Plywood and Furniture sector

III. What is the mechanism by which the usage of the TGU in the plywood industry can be monitored

With regard to the point I, FIPPI has submitted the list of BIS-licensed manufacturers for plywood for general purpose (IS 303), MDF for general purpose (IS 12406) and particle board of wood and other lingnocellulosic materials (medium density) for general purposes (IS 3087), by email on 10th February 2026 to the Department of Fertilizers. We have no specific information on the installed capacity of each manufacturer.

With regard to the point II, FIPPI has submitted the overall consumption of technical-grade urea based on the total installed estimated capacity of plywood and panel products vide its letter no FIPPI/Budget2/2025-26 dated 24th October 2025 and FIPPI/Budget8/2025-26 dated 8th December 2025. (Copy enclosed)

Coming to the point III, there are two separate BIS Standards for Urea, Fertilizer Grade (IS 5406) and Urea, Technical (IS 1781), which differentiates both these categories of urea. Following the implementation of the QCOs, BIS maintains data on production volumes according to issued licenses. Therefore, the usage of technical-grade urea in the plywood industry can be monitored through BIS. Diversion of fertilizer-grade urea is being controlled by the Fertilizer (Control) Order, 1985 (FCO) of the Essential Commodities Act, 1955 (ECA) for which all the member industries have been advised for its compliance vide letter no: FIPPI/Budget2/2025-26 dated 24th October 2025. (Copy enclosed)

Additionally, we have also requested the Secretary, Department of Fertilizers, requesting to introduce a government-directed pricing mechanism for technical-grade urea vide letter no: FIPPI/Budget2/2025-26 dated 11th October 2025.

(Copy enclosed) This can be implemented without extending any subsidies to the industry, by making the following policy interventions:

- Introduce a government-directed pricing mechanism: India should target reducing the price of technical-grade urea to approximately ₹25 per kg, supported by a government-directed pricing mechanism similar to China. This measure will create a level playing field for Indian manufacturers in the global market.
- Price industrial urea based only on variable costs: Overhead and fixed costs should not be factored into the pricing of industrial-grade urea, as they can be fully absorbed by the subsidised agricultural segment, which accounts for over 99% of total urea consumption.
- Ensure decentralized supply through select public sector plants: The Government should direct 100% government-owned urea plants located in the four corners of the country and one in the central region to supply technical-grade urea for industrial use. This will ensure consistent and regionally accessible availability to wood panel and resin manufacturers across India.

It is further reiterated that FIPPI and the plywood and panel sector remain committed to cooperating with the Government to ensure proper regulation, traceability, and responsible use of technical-grade urea in accordance with IS standards and the Fertilizer (Control) Order, 1985 (FCO) of the Essential Commodities Act, 1955 (ECA).

Thanking You,

Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

Copy to:
Shri Mohammad Isharar Ali
Director
Department for Promotion of Industry & Internal Trade

FIPPI Requests IWST for a Training Programme for BIS Officials Associated with Testing of Plywood and Panel Products

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

12 March 2026

To,

1. **The Director General**
   Bureau of Indian Standards (BIS), New Delhi

2. **The Director**
   Institute of Wood Science and Technology (IWST), Bengaluru.

Subject: Request for organizing a Training Programme for BIS Officials Associated with Testing of Plywood and Panel Products.

Dear Sir,

The Federation of Indian Plywood & Panel Industry (FIPPI) wishes to highlight the growing importance of ensuring uniformity, accuracy, and clarity in testing procedures for plywood and wood-based panel products across laboratories engaged in conformity assessment under the Bureau of Indian Standards.

With the increasing implementation of Quality Control Orders and the expanding scope of product certification, testing laboratories play a critical role in maintaining product quality and compliance. However, FIPPI has been receiving feedback from regional associations and manufacturers that variations in the execution of certain testing procedures sometimes lead to inconsistencies in test results across laboratories.

In view of this, FIPPI respectfully proposes that the Institute of Wood Science and Technology (IWST) and Bureau of Indian Standards (BIS) may jointly organize a training programme for officials and technical personnel associated with testing of plywood, block boards, particle boards, MDF, and related wood-based panel products under BIS.

FIPPI would be pleased to extend its cooperation in facilitating industry participation and supporting the successful organization of this programme.

We sincerely request the kind consideration of the Bureau of Indian Standards and the Institute of Wood Science and Technology in organizing this important capacity-building initiative at a mutually convenient date.

Yours sincerely,

Dr. M.P. Singh
Director General
Federation of Indian Plywood & Panel Industry (FIPPI)

FIPPI Proposes Workshop on "Innovative Approaches on the Development of Urea – Free Resin: Open Discussion and Need for Validation"

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/IWST-WORKSHOP-1-2026 12 March 2026

To
The Director
Institute of Wood Science and Technology,
Bengaluru, Karnataka.

Subject: Proposal for Organizing a Workshop on "Innovative Approaches on the Development of Urea- Free Resin: Open Discussion and Need for Validation".

Dear Sir,

On behalf of the Federation of Indian Plywood & Panel Industry (FIPPI), I would like to propose the organization of a joint workshop in collaboration with the Institute of Wood Science and Technology (IWST), Bengaluru, on the theme "Innovative Approaches on the Development of Urea-Free Resin: Open Discussion and Need for Validation."

The exploration of urea-free resin technologies has become an important area of development for industrial interest. In the process, different innovative methods are being adopted for the manufacture of urea-free resin in different parts of the country. A dedicated workshop bringing together scientists, researchers and industry representatives would provide an excellent platform for exchanging ideas, discussing emerging technologies, and identifying pathways to scientifically validate the performance, durability, and acceptability of urea-free resins for plywood and panel products.

The Federation of Indian Plywood & Panel Industry would be pleased to collaborate in planning the technical sessions, facilitating participation from industry members, and supporting the overall coordination of the event.

I shall be grateful for your kind consideration of this request and look forward to your favourable response on organizing the workshop at a mutually convenient date.

Yours sincerely,

Dr. M. P. Singh
Director General
Federation of Indian Plywood & Panel Industry (FIPPI)

Copy to
All Affiliated Members

FIPPI Issues Advisory to All Members on the Mandatory Use of Technical Grade Urea (TGU) for Industrial Applications

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

March 13, 2026

Advisory to All Member Units

Subject: Advisory on the Mandatory Use of Technical Grade Urea (TGU) for Industrial Applications.

Dear Members,

The Federation of Indian Plywood & Panel Industry (FIPPI) would like to bring to the attention of all member units that, under the prevailing Urea Policy of the Government of India, Technical Grade Urea (TGU) is designated for industrial use, while Agricultural Grade Urea (AGU) is intended strictly for agricultural purposes and should not be used, directly or indirectly, in the manufacture of plywood, MDF, particle board, or any other panel products.

In this context, members are requested to ensure that their manufacturing processes and procurement practices remain aligned with the applicable regulatory framework.

Accordingly, member units are requested to ensure the following:

- Only Technical Grade Urea (TGU) is procured and utilized for all industrial applications.
- Resins manufactured in-house or procured from external suppliers are exclusively based on TGU and are supported by appropriate declarations and compliance documentation.

FIPPI members are expected to lead by example and uphold the highest standards of regulatory compliance and ethical sourcing. Any deviation by individual units may adversely affect the credibility, regulatory standing, and policy position of the entire industry.

This commitment:

- Safeguards the industry from regulatory action and reputational risks.
- Strengthens long-term policy advocacy efforts aimed at ensuring stable and globally competitive input pricing.

This advisory is in continuation of earlier advisory to all members dated 24 October 2025 and the position held by FIPPI to support the Government endeavour in this regard. FIPPI is also supporting projects and other initiatives to promote use of urea-free resin for our sector.

Members are kindly requested to take note of this advisory and ensure appropriate compliance in their respective units.

With regards,

Dr. M.P. Singh
Director General
Federation of Indian Plywood & Panel Industry (FIPPI)

Development and Extension of Alternatives and Substitution to Urea Resins

Mamatha. B. S.*

Sujatha D*

Abstract

The development of alternatives and substitutions to urea-based resin technologies has become increasingly important for the plywood and wood-based panel industry, and their adoption is now approaching inevitability. Growing concerns regarding the health and environmental impacts of formaldehyde emissions, coupled with uncertainties in the supply and rising cost of imported urea, have accelerated the search for safer and more sustainable adhesive systems.

In recent years, there has been a renewed interest in soy-based adhesives as potential substitutes for urea–formaldehyde resins. This shift is primarily driven by the availability of effective co-reactants that enhance the reactivity and performance of protein. Furthermore, substantial quantities of low-cost soy flour, often unsuitable for human consumption, are readily available and can be efficiently utilized in wood adhesive formulations.

Similarly, other bio-based materials such as lignin and tannin have significant attention as potential substitutes resin systems for higher grade panels. In addition, carbohydrates represent one of the most abundant and cost-effective classes of natural materials available in pure form. The utilization of monosaccharides as low-cost raw materials for wood adhesives has also been increasingly explored, offering promising pathways toward sustainable and environmentally friendly adhesive technologies.

These systems not only utilize renewable raw materials but also reduce harmful emissions, improve workplace safety, and decrease dependence on imported petrochemical resources. Furthermore, such adhesives can often be synthesized in shorter processing times making them attractive for large-scale industrial adoption.

This paper presents the list of alternatives or substitutions to urea and formaldehyde adhesive technologies developed by the ICFRE-Institute of Wood Science and Technology (ICFRE-IWST) for easy adoption by the plywood industry. It also provides a list of these adhesives along with their production cost and potential application areas.

1. Introduction

Resins are chemical substances widely used as adhesives, coatings, and binding agents in many industrial applications. In the wood-based panel industry, resins play a crucial role in bonding wood particles, veneers, and fibers together to produce materials such as plywood, particleboard, and medium-density fiberboard (MDF), block board, flush door, laminated veneer lumber, compreg, etc.

Traditionally, urea–formaldehyde (UF) resin has been the most widely used adhesive in the plywood and wood-based panel industry because of its low cost, fast curing, and strong bonding properties. During the early development of urea-formaldehyde (UF) adhesives. The proportion of formaldehyde was higher and this adhesion was mostly accepted for panel products However, this also resulted in higher levels of formaldehyde emissions from finished products. The widespread use of UF adhesives in indoor applications raised health concerns related to these emissions. As a result, regulations have steadily reduced the permissible levels of formaldehyde emissions from composite wood panels. This effort reached a major milestone wherein government and other international regulations were established significantly stricter emission limits for wood based panel products.

UF resins release formaldehyde, a volatile organic compound that can negatively affect indoor air quality and human health. In addition, the plywood and panel industry

Scientists, Plywood and panel products division, ICFRE – Institute of Wood Science & Technology, IWST-IPIRTI Campus, HMT Link Road, Off Tumkur Road, Yeshwanthpur Post, Bengaluru–560022.

in India faces uncertainty in the supply of urea, as it largely depends on imports, leading to issues related to cost stability and long-term availability. As a result, the development of urea-free and formaldehyde-free resin technologies has become an important focus for the plywood and wood-based panel industry.

There are many alternatives of resins are available for the manufacture of plywood without urea for MR, BWR and BWP grade plywood. The research at IWST has been focused utilising biomaterial to improve bond quality and accordingly economic feasibility at commercial, applications. Below are the list of adhesives can be adopted at commercial scale.

- Soya based adhesives
- Tannin based adhesives
- Lignin based adhesives
- Cardanol based adhesives

2. Soya based adhesives:

Recently IWST has initiated the work on demonstrating the soya based adhesives at Industry for different grades of plywood under the project title "Extension and adoption of bio based adhesives" in the funding support by M/S FIPPI.

Soy flour(deoiled) is widely regarded as one of the most promising renewable protein sources for adhesive applications. It is abundantly available in large quantities, exhibits consistent quality, while having minimal impact on human food resources. Thus the soya flour after oil extraction can readily be used unlike other biomaterials wherein the isolation process is required. In this project commercial adhesive systems based on soy flour combined with co-reactants during synthesis and or extension have been developed, with research focused to enhance their bond quality along with economic feasibility for different grades of plywood.

2.1 Phenol soya formaldehyde resin:

These adhesives has been demonstrated for the manufacture of plywood satisfying boiling water resistant grade by replacing upto 30% of soya flour in phenol during resin synthesis. More than 30% replacement has shown good bond quality, however practical utility at commercial scale becomes challenges due to increase in viscosity within short period. These adhesives demonstrate very negligible formaldehyde emission and suitable for exterior grade.

Currently, the global crisis, in addition, the plywood and panel industry in India faces uncertainty in the supply of urea, leading to issues related to cost stability and long-term availability. Thus soya based adhesives has gained interest with other amino materials.

2.2 Melamine soya formaldehyde:

The adhesive synthesized has demonstrated boiling water proof grade properties. soya incorporation during resin synthesis at higher than 30% yields very less shelf life, which becomes difficult for commercial adoption. The demonstration of the soya based extended resin has been taken up to increase the addition of biomaterial. The extending denatured soya with more than 40% with melamine formaldehyde resin satisfies the board properties for BWR and MR grade depending on the amount of replacement.

Conventional MF resins utilizes 33-36% of melamine for the synthesis of Melamine formaldehyde resin thus the developed soya based melamine adhesives replaces almost 23 % of melamine during the synthesis and also confirms to BWP grade plywood requirements. In case of extended resin upto 60% of basic MF resin can be replaced for MR grade plywood.

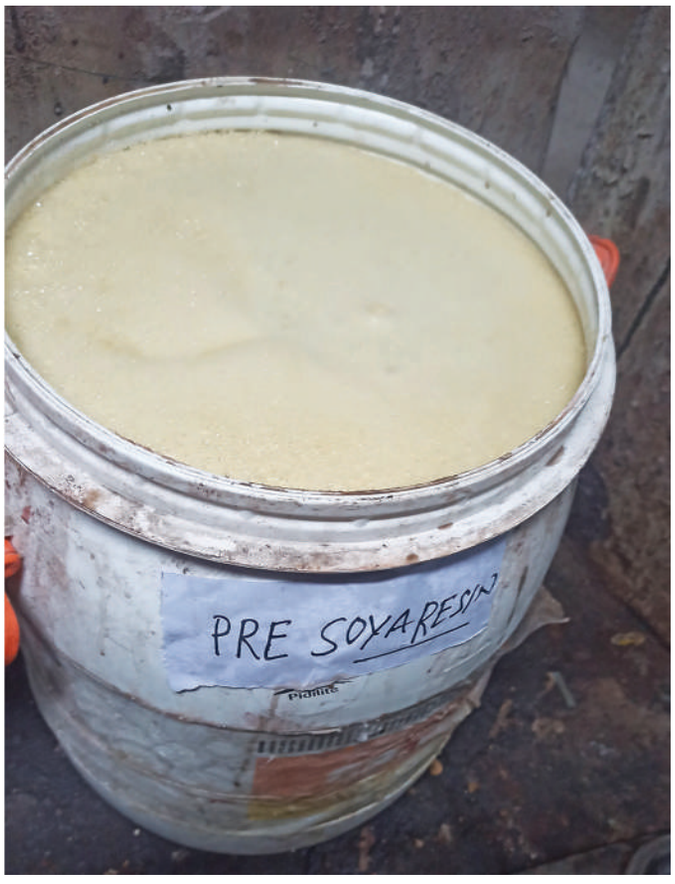
2.3 Soya urea melamine formaldehyde adhesive:

The synthesis of resin was also demonstrated for BWR and MR grade plywood. The resin displayed viscosity and other properties very similar to conventional UF resins. The curing and hot pressing properties of the plywood made using soya based adhesives are similar to the pressing conditions adopted for conventional amino resin system. Thus adoption of these adhesives by the industry would be easier.

In the formulation of conventional urea formaldehyde resin 30.3% urea and 22.6 % urea with 15.1 % of for the formulation melamine urea melamine formaldehyde resin is used. Whereas the developed soya based adhesives with urea and melamine utilises only 12 % urea and 8% melamine which leads in the reduction of 33.3% of urea and 34 % of melamine respectively when compared to the conventional systems.

Below are the images of demonstration at Industry

Team took demonstration at M/s Green ply, Kolkata.



Denatured soya solution.

Soya melamine formaldehyde resin is being unloaded from kettle.

Soya urea melamine formaldehyde resin on 2nd day of cooking and its flow property in B4 cup.

Soya-based adhesives that are copolymerized with phenolic or melamine groups can be used in both direct pressing and pre-pressing techniques, depending on the manufacturing practices followed in the industry. The formulation and pressing conditions can be tailored to achieve the desired bonding performance.

3. Other alternatives of Resins in terms of urea free & or substitution for high moisture content veneers

3.1 Phenol Tannin formaldehyde adhesive:

The rate of reaction of tannin with formaldehyde is very fast thus the flowability and reactivity of the tannin adhesive is lowered. In order to overcome this problem, solution of mimosa wattle Tannin in adhesive formulations of phenol formaldehyde has been demonstrated. The use of high moisture content veneers 14-16 % at commercial scale demonstrating excellent bonding properties of plywood confirming to boiling water-proof grade properties as per IS:848-2006. Reactivity of tannin is fast thus the high moisture present in the veneers tends to decrease the fast curing action of the tannin extended resin adhesive. This in turn helps to maintain the glue coated veneer moisture content level to that of the conventional PF resin coated veneers, thereby giving good bond quality. The tannin utilisation not only reduced the cost of adhesive but also reduces overall cost of the product as the energy required for the drying of veneers is drastically decreased.

3.2 Hands on experience during visit to Vietnam:

The resin adhesives employed at Vietnam has the ability to yield good bond quality even when coated on veneers having high moisture content (10- 17%). The resin synthesises involve crosslinking of urea, melamine, PVA and formaldehyde at optional ratios in two stage process. The adhesive formulation and the hot press parameters are designed in such a way that the adhesive formulation maintain a very high solid content, that can lead to absorb excess moisture from the veneers. Further moisture stabilisation happens during the prepressing stage of the assembled panel. The final hot press with increased duration yields the requisite bond quality for MR grade plywood. The technology comprises automated process system from the initial veneering stage which forms continuous rolling for glue coating and assembling to requisite thickness which is further loaded for prepressing and Hot pressing. The manpower involvement during production is minimised, with cost reduction in overall production with enhanced bond quality for Moisture resistance grade plywood.

3.3 Lignin phenol formaldehyde adhesives:

Black liquor/lignin has phenolic groups and act as an adhesive component similar to phenol in phenol formaldehyde resins. But condensation of lignin with formaldehyde by heat or acid has shown lower reaction due to the less number of free positions in the nuclei Lignin is not very reactive with formaldehyde, thus methyolation of lignin is to be carried out in alkali condition. Methyolation of lignin is important so as to create more active functional groups in the chain. Black liquor contains lignin of different molecular weight which on utilising for manufacturing of adhesive has not shown consistent bond quality. The developed adhesive using black liquor based on ultrafiltration technique. Wherein black liquor is fractionated to particular molecular weight (8000-15000 KDa) using ceramic membrane and then used as an alternative raw material for phenol in phenol formaldehyde resin satisfies the boiling water proof (BWP) grade plywood. Lignin powder has also been used in phenol formaldehyde resin during synthesis forming phenol lignin formaldehyde adhesive. Utilisation of this Phenol lignin formaldehyde by replacing up to 60-80 % lignin resin will satisfy boiling water resistance, boiling water proof and moisture resistance(MR) grades of plywood.

3.4 Phenol cardanol formaldehyde resins:

Cashew Nut Shell Liquid (CNSL) is one of the few economically viable natural sources of phenolic compounds. The primary constituents of CNSL are anacardic acid and cardanol, typically present in an approximate ratio of 90:10. Upon distillation of commercial CNSL, the main decarboxylated product obtained is cardanol, which consists of a mixture of monohydroxy phenols with a linear side chain located at the meta position. This side chain generally contains an average of two double bonds.

Cardanol is capable of undergoing most of the chemical reactions typical of the phenolic nucleus. When cardanol reacts with formaldehyde, it forms resins that generally require organic solvents for formulation as adhesives. However, when cardanol and phenol are used in nearly equal proportions by weight and reacted with formaldehyde in the presence of an alkali catalyst, the resulting resins are water-dispersible.

Adhesive formulations have been developed using cardanol as a partial substitute for phenol in phenol–formaldehyde (PF) resin adhesives, which are suitable for manufacturing BWR and BWP grade plywood. Substituting phenol with cardanol in PF resin adhesives can reduce the overall resin cost by approximately 30% compared to the conventional PF resins currently used in the plywood industry.

4. Other routes of manufacturing with solely biomaterial based without formaldehyde or phenol or urea or melamine.

4.1 Lignin Glyoxal adhesive:

Glyoxal is one such aldehyde which is non-toxic, non-volatile that can be used as an alternative to formaldehyde in wood adhesives. Glyoxal is less reactive than formaldehyde, but makes it a good replacement for formaldehyde due to its nontoxic nature, requires very meagre amount and as produced from biobased feedstocks. Instead of methyolation, glyoxylation of lignin has been investigated. Wherein glyoxylated lignin with tannin solution has provided plywood satisfying MR grade properties with more than 75 % wood failure. This adhesive has been extended to particle board manufacturing satisfying the properties of board as per IS 3087.

Currently, Lignin is the lowest cost, non-food source bio material available at commercial scale. Lot of research on replacement of phenol to lignin has been demonstrated and recently the replacement of formaldehyde with glyoxal has been carried out with maximum utilisation of lignin. Therefore, lignin-based wood adhesives would be the most sustainable practically approachable adhesive alternatives to the synthetic resins generally used in the wood industry.

4.2 Carbohydrate based adhesive:

Carbohydrates are the widely available organic polymer and are available in a relatively pure state at low cost. Glucose

Table 1: List of Resin adhesives urea alyternatives/substitutions and or formaldehyde free with cost and its demonstration level. Considering the cost per kg in Rupees of formaldehyde 25/-, Phenol -140/-, Melamine – 135/- and urea 54/-)

Raw Material and its cost per kg	Stage of work carried out at IWST	Available for commercialisation	Demonstration level at Industry	Resin /adhesive Cost per Kg	Products / Application
Lignin Lignin Rs 80/-	1) Phenol lignin formaldehyde upto 60 % replacement 2) Phenol lignin formaldehyde upto 80 % replacement	Ready Ready	Upto 60 % replacement of lignin has been demonstrated Pilot study	Rs. 46.8 for BWR grade Rs.44.1 for MR grade	Plywood Particle board MDF Blockboard Flush door and any products
Tannin Tannin Rs 50/-	Upto 30 % replacement of tannin for high moisture content veneers.	Ready	Demonstrated	Rs.25.82 for BWR	Plywood Particle board
Lignin glyoxal Glyoxal Rs 75/-	Lignin glyoxal tannin adhesive Glyoxal requirement is very less and maximum biomaterials are used	Pilot scale	---	Rs 35.44 for MR grade	Plywood Particle board
Phenol cardanol formaldehyde resin Cardanol rs. 75/-	Upto 40% replacement	Ready	Demonstrated at industry	Rs 45.1 for BWP/ BWR grade	Plywood /Blockboard, LVLK, flushdoor Particle board MDF
Soya based adhesive Soya flour Rs 50	1) Soya phenol formaldehyde resin 2) Soya melamine formaldehyde resin 3) Soya urea melamine formaldehyde resin	Ready Ready Ready	Demonstrated Demonstrated Demonstrated	Rs.48-50/- BWR/ BWP grade plywood Rs 53/- BWR/BWP grade plywood Rs 39/- for MR grade plywood	Plywood Blockboard Flush door
Carbohydrate based adhesive Glucose and citric at Rs 60 each	Glucose citric acid	Ready	-------	Rs 31/- for BWR/MR Rs 40 for MR grade	Plywood Particle board MDF Blockboard Flush door and any products

is one such carbohydrate which has five hydroxyl groups. Glucose a, monosaccharide was incorporated with citric acid for the synthesize glucose citric acid adhesive. Optimized the molar ration of citric acid to glucose for the manufacture of resin suitable to the manufacture of MR grade plywood of 8ft x 4ft. This resin requires a very less synthesizing time and has very long shelf life. Study illustrated that reaction mechanism is predominantly dependent on the molar ratios of citric acid and glucose. Clear mechanism is being explained by us using NMR 13C and 1H between glucose and citric acid forming ester groups and also crosslinking between ester groups and wood components and hydrogen bonding between glucose hydroxyl end groups and wood hydroxyl groups. This developed resin has been extended for particle board manufacturing of 2ft x 4ft satisfying all the properties of IS 3087 for grade -2 particle board.

5. Advantages of these adhesives:

One of the most significant benefits is their low or near-zero formaldehyde emission, which contributes to improved indoor air quality and reduced health risks. In addition, these resin systems generally exhibit better moisture and water resistance, enhancing the dimensional stability and service life of the final product. Low or zero formaldehyde emissions. Improved Occupational and consumer Safety

From an environmental perspective, the production and use of such resins support eco-friendly manufacturing practices and help meet increasingly stringent international safety and emission standards. Furthermore, their use aligns with the principles of sustainable material development, making them particularly suitable for modern green building.

6. Advantages of free formaldehyde Resin

Urea-free and formaldehyde-free resin systems offer several environmental, health, and performance advantages compared with conventional urea-formaldehyde-based adhesives used in wood composite manufacturing.

- Environmentally Friendly and Sustainable.
- Better Consumer Safety
- Viscosity of this resin makes it suitable for plywood, particle board and or MDF
- The liquid resin formulation has a relatively longer storage stability, typically exceeding three months, which facilitates ease of handling and industrial processing.
- These resins can often be synthesized through a simple one-pot reaction process within a short duration, making them suitable for cost-effective manufacturing and easier scale-up.

7. Conclusion

Elimination and or substitution of urea and reducing formaldehyde emissions, these resins provide a safer and more environmentally friendly alternative to conventional UF adhesives. These bio based adhesives represent an important advancement in the development of safer and sustainable adhesive materials. These resins significantly reduce harmful emissions, improving indoor air quality and minimizing health risks. They also support stricter environmental regulations and promote sustainable manufacturing practices. Therefore, the adoption of urea-free and formaldehyde-free resins is a promising step toward producing eco-friendly wood products and adhesives while maintaining good performance and durability. As industries move toward sustainable manufacturing and stricter environmental regulations, urea-free and formaldehyde free resins will play a crucial role in the future of eco-friendly materials.❑

The Evolution of Urea – Free Resins in India – Early Shelving to Recent Advancements

H. Vaidyanathan***

Urea Formaldehyde (UF) resin is one of the most widely used synthetic resin binders in the wood composites manufacturing sector, worldwide. It is also widely used along with other resins in the leather, textiles & carton-box manufacturing sectors. Historically, the Urea raw material that is used for the manufacture of UF resins, has been taken for granted in India, from the subsidised agriculture fertiliser supply-chains across the country. Where industrially used Technical Grade (TG) Urea was priced in the range of ₹38 to ₹45, the illegally diverted agriculture fertiliser urea was easily available at ₹7/- per Kg, until recently. This helped to keep UF Resin costs as low as ₹15/- per Kg for the manufacturer. India had easy and unrestricted access to the cheapest MR Grade resin in the whole world.

How the thought process started?

Being an eco-sensitive individual with a fair degree of conscience, I have been thinking of replacing urea from the MR Grade plywood and panel resins in India, since the time I was working with a group based down South during 2013. Seeing massive number of trucks being brought in to factories illegally all-over the place, developed an inner pain, leading to a resolve to be the change I wished to see around.

The First Ever Success – 2014: In the year 2014, I made a crude MF moulding powder dryer fabricated using an empty phenol drum, with 2 x 500W bulbs as the heating source. Thereafter got the Melamine Formaldehyde dried flakes to be pulverised to fine powder of maximum possible fineness (80 mesh) using available pulveriser equipment.

The First Urea – Free Glue Mixing: 25 parts of this MF powder was mixed with 75 parts of water, using a high speed OHS, and then 15 parts of all-purpose flour (maida) was mixed homogenously into the glue system. Plywood was made using Rubber-Eucalyptus core veneer combination. Eucalyptus being the glue-core. The 9-layer assembly was pressed along with 0.3mm gurjan face veneers, at 130 deg C, for 15 minutes, using the direct pressing technique. The resulting plywood samples showed excellent MR Grade properties in lab tests. This was again tried with 20 parts MF powder : 80 parts water : 15 parts maida, which also returned good results, passing MR Grade plywood requirements exceedingly.

Shelved for infinity: Discussing with industrialists never returned favourable responses, since the process was tedious, time-consuming, and planning-driven. Subsidy urea was available just like over-the-counter vegetable buying. When resin itself used to be available for ₹16/- ex-factory + GST, this glue system was too costly.

Between 2013 and 2018, I have self-tested more than 4,500 plywood samples using various formulations, materials, additives, and glue-mixtures – ranging melamine, phenol, resorcinol, glyoxal, lignin, cardanol, epichlorohydrin, epoxies, starches, soy variants, nano-fibres, celluloses, etc.

Fast Forward to 2022 June – The Inspirational Chat with a Veteran: During the year's Indiawood exhibition at Bengaluru, I had a chance to meet with Shri Ajay Baldawa Sir of Century Group. This must have been the 2nd of June, 2022, if I remember right. Baldawa sir asked me – Vaidya, I want to replace maida from being added as an extender for glue-making. I want you to work on it. I responded saying I shall work on it. It was an order for me, more than a suggestion/ request.

By the second week of June, I happened to test a starch-based crosslinker formulation, to be blended with pure MF resin, at different ratios, in order to make various grades of plywood samples for testing. What started as an extender-removal work, ended up as a successful urea-removal work, within a matter of couple of weeks.

The Techno-commercial Thought Process

Matching the basic cost economics of Urea Formaldehyde resin/glue, requires that any resin system developed must be able to compare point-blank, against the illegally diverted urea-based cost to the industry – the gold standard. Whatever the resin, whatever the blend, this had to be the baseline.

Keeping this in mind, the next scenario moves toward the technical perfection of such a resin system, which can work across almost all of the current manufacturing practices, wood species used, process parameters used, as well as work approaches used, pan-India. This is not an ordinary work at hand, given such vast variations in almost all of the parameters within factories – work, technical, social, political, and emotional. And then, as the silver lining of limitations

to plywood manufacturing in India, there is the – 'Green me hota hai kya?' mindset.

The primary approach was to utilise the superiority of a higher resin (such as MF & PF) to create the base pre-polymer, and create a blendable/harmonizable low-cost crosslinker, that can retain bond performance at an optimised level of blend ratio(s). Unless we have the courage and technical confidence to enter into unchartered, yet imaginable territories in the realm of science, new innovations can never be arrived at, leave apart implemented. There is a basic thumb-rule in scientific work – 'if it can be imagined, it can be done'. Being unable to conceive technical imaginations, is not a problem of science – it remains a problem of mindset and attitudes.

Etherification and Crosslinking: The "magic" happening in the glue-line is not just simple mixing. It is the play of a complex Interpenetrating Polymer Network (IPN). The methylol groups (-CH2OH) from the melamine formaldehyde resin react with the hydroxyl groups (-OH) found on the bio-crosslinker chains. This creates strong covalent ether bonds.

Heat and pressure of the plywood press increases the surface area in bio-crosslinker structure, allowing the MF resin to penetrate the matrix more effectively. As the water evaporates, MF resin undergoes polycondensation, forming a rigid, three-dimensional network that physically traps the bio-crosslinker molecules. This prevents the matrix from re-absorbing moisture, which is usually the "Achilles' heel" of pure bio glues.

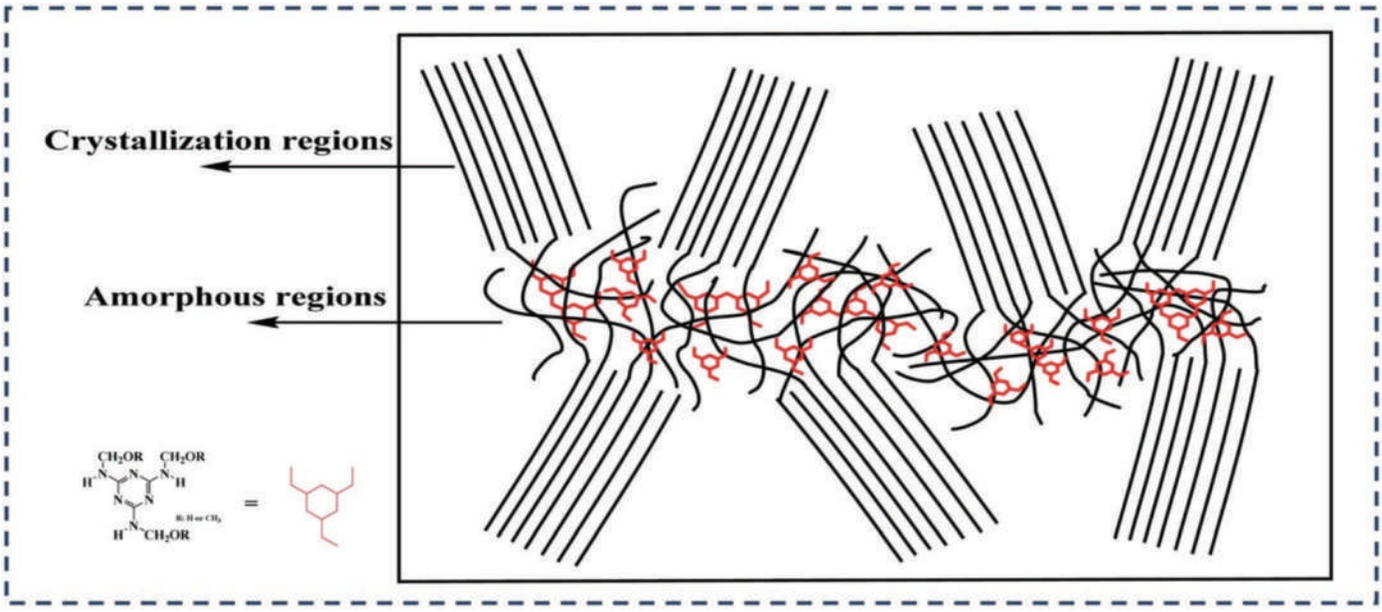


Figure 1: Schematic representation of chemical crosslinking between MF & Bio-crosslinker.

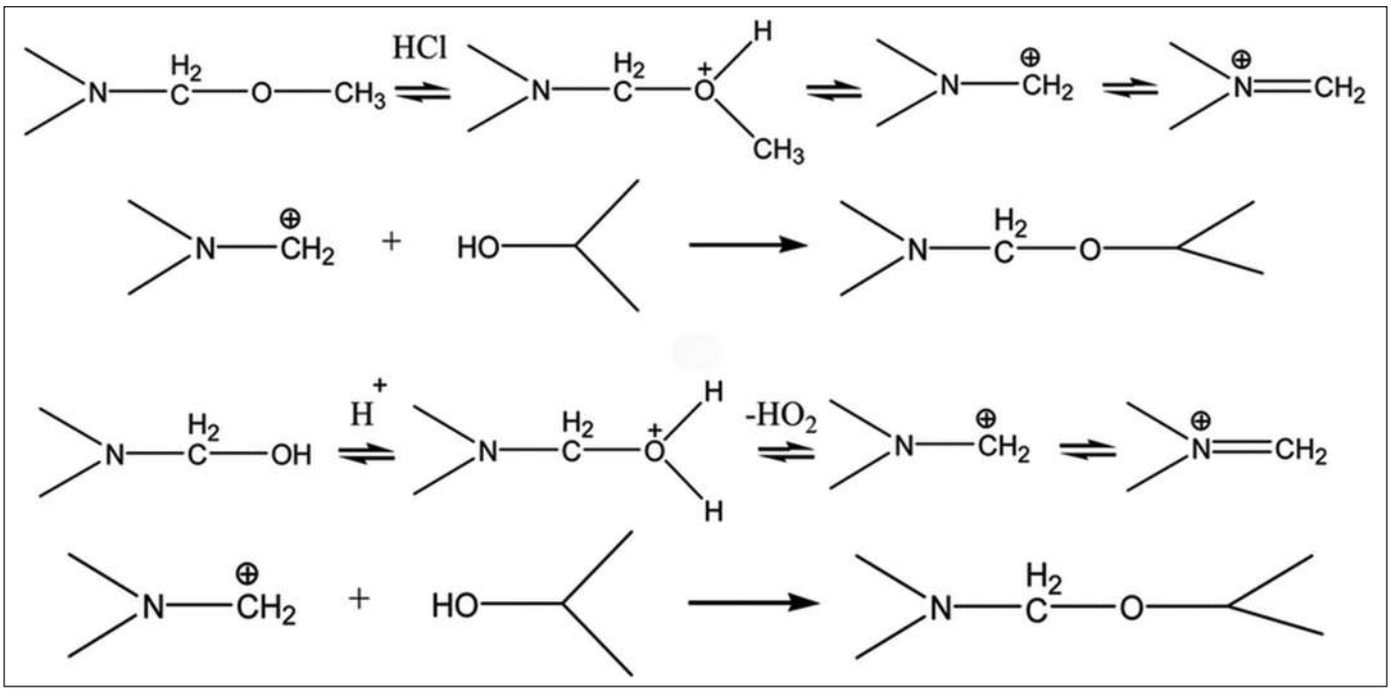


Figure 2: Reaction between methoxy groups (above), and hydroxymethyl groups (below) of MF, with the hydroxyl groups present in the bio-crosslinker.

The smart utilisation of this crosslinked polycondensation process remains the key to implementing NUR glue systems at an economical cost, with bond performance, as well as bond durability – thereby passing the accelerated aging tests prescribed in the BIS Standards.

The Secret Sauce – Homogenisation

MR Grade plywood properties were comfortably passed at 20:80, 25:75, 30:70 ratios of MF:Bio blends. The key to reducing cost – homogenisation efficiency - the most critical factor for bio-resin blends. With the perfect homogenisation in blending stage, I was able to achieve 20 MF : 80 Bio glue, without the need for extenders.

The addition of certain unique, proprietary materials, in the final base formulation – BioReX™, helps further, to improve the homogenisation capability of the blend, during the time given in Cowles Dissolver Mixing (popularly known as the Chinese glue-mixing).

Choosing the Glue-Mixer

Identification/design/choice of the glue-mixer decides cost as well as performance efficiencies in the Non-Urea Resin (NUR) glue system. The key aspects of choosing the right glue-mixer in NUR glue systems (recommended for any glue system in general, irrespective of the type) are –

- ✓ The Cowles Dissolver mixing process.
- ✓ Design and dimensions of the blade, with respect to the tank dimensions.
- ✓ RPM manipulations during glue-mixing.
- ✓ Time provided for the glue-mixing (homogenisation process).

The Onward Journey

Since 2023, the country has been witnessing large number of raids on factories that use illegally diverted fertiliser urea, for manufacturing UF resins for Plywood, PB & MDF. The first official request for practical NUR implementation came from Maharashtra (2023), followed by Kerala (May, 2025), Karnataka (June, 2025), and UP (Jan, 2026).

NUR glue system is fully operational in India, since 2023 mid, officially and commercially, in plywood manufacturing. When NUR glue system is mentioned, it belongs to the commercial classification of wood composites glues within the maximum cost of ₹20/- per Kg (using the general chemical price index).

By 2025 mid-year, I have been able to develop and test the following types of NUR glue systems, which have been practically running in different industries across India, by now.

Base Material	Blends
Melamine Formaldehyde	Starch-bio blends
	All-purpose flour (maida) blends
	Direct dilutions
	BioReX™ blends
Phenol Formaldehyde	Protein-bio blends
	Phenolic-bio blends
	Direct dilutions

Each of the above glue systems have their advantages and disadvantages, and these cannot be universally applicable to all factories. The NUR glue system has to be "set-up" for each factory, based on available conditions, infrastructure, and work-approaches. Currently, around 30 plywood factories & one PB unit are running on these NUR glue system implementations, with more factories in the pipeline.

Key Factors of NUR Glue Economics

- ✓ Resin kettle material-mixing design.
- ✓ Glue mixer design.
- ✓ Discipline in two-component blending/mixing.

The most critical factor in reducing cost of NUR glue, is the mixing infrastructure and mixing efficiency. Scientifically established, and well-planned glue-mixing infrastructure can help reduce costs beyond believable levels.

As I write this article, there is a great news for the Plywood manufacturing sector – BioReX™ based synthetic-bio hybrid resins officially conforms to IS-303:2024 MR Grade Plywood Standards, as well as IS-848:2025 Synthetic Resin Adhesives for Plywood Standards, based on an unbiased third-party testing through random sampling. Test reports are available for download in the PlyQi™ website.

Key Acknowledgements & Gratitude: Shri Abdul Razak Tanirbhavi Ibrahim (Akolite Synthetic Resins), Shri Subhash Jolly (WTA), Shri Ritesh Mundra (Trubond Industries Pvt Ltd), Shri Haresh Ajbani (Vritti Impex Pvt Ltd), Shri Naresh Tewari (AIPMA), Dr. Prasanth M.A. (A K Apple Ply Pvt Ltd), Shri Riaz M. H. (SOPMA), Shri Pragat Dwivedi (Ply Reporter), Shri Suresh Bahety (Ply Insight), Dr. M. P. Singh (FIPPI).

****The writer, H. Vaidyanathan (aka Vaidya), is a field expert in plywood & composites manufacturing sector, spanning a career of 22 years, working on LFE Resins, NAF Resins, Bio-hybrids, Plywood, Compreg, Particle/Fibre Composites, Coir Fibre & Bamboo. Vaidya is involved in R&D, Product Development, Skilling and Training activities. He is the Founder of PlyQi™, a consulting & advisory Firm providing services in technologies, strategy, mentorship, materials, R&D, QC, and PD.*❑

Interactive Meeting-Held at ICFRE – IWST, Bengaluru on 11th February 2026 between ICFRE Institutes and FIPPI to finalize the collaborative project "Evaluation & Extension of Clones / Varieties Developed by ICFRE for the Plywood and Panel Industry"

FIPPI convened an interactive meeting between the participating industries and the collaborating institutes of the Indian Council of Forestry Research and Education (ICFRE) on 11 February 2026 at ICFRE–IWST, Bengaluru, to finalize the project titled "Evaluation and Extension of Clones/Varieties Developed by ICFRE for the Plywood and Panel Industry".

The session brought together key stakeholders for insightful discussions, knowledge exchange, and collaborative planning aimed at strengthening research–industry linkages and promoting sustainable raw material development for the sector.

During the meeting, it was decided that five ICFRE institutes—Institute of Wood Science and Technology (IWST), Institute of Forest Genetics & Tree Breeding (IFGTB), Institute of Forest Productivity (IFP), Forest Research Institute (FRI), and Rain Forest Research Institute (RFRI)—will participate in this collaborative research initiative. The project framework was finalized based on the detailed deliberations held with FIPPI, participating industries, and representatives from the ICFRE institutes.

Minutes of the Interactive Meeting-Held at ICFRE–IWST, Bengaluru on 11th February 2026 to finalize the proposed collaborative project between ICFRE Institutes and FIPPI.

Dr. Shakti Singh Chauhan, Director, IWST, in his welcome address, briefed the participants about the importance and background of formation of proposed project and presented the project activities, methodology, deliverables, and timelines. He underscored the urgent need for assured, high-quality raw material sources for the wood panel sector and emphasized the importance of short-rotation plantation species capable of producing superior wood for plywood manufacturing. He noted that most clones developed so far by ICFRE institutes have primarily targeted the paper and pulp industry, with limited focus on plywood and panel applications. The Director explained that clone selection for plywood should be based on critical wood quality parameters such as density, lignin content, modulus of elasticity, log girth, peeling quality, and drying behaviour, along with key physical, mechanical, and anatomical characteristics influencing product performance. He highlighted the

advantages of clonal planting material, especially, uniformity, enhanced productivity, and quality assurance; and stressed the need to shift focus toward developing and evaluating clones specifically suited for plywood and panel industries, given their strong potential for large-scale industrial deployment.

Dr. Ajay Kumar Thakur, Scientist-G of ICFRE-Forest Research Institute delivered a presentation on Corymbia hybrids and Poplars. He highlighted their yield superiority over existing clones of the parental species and other commercially important species, and described trials under farmers' fields for large-scale demonstration of the developed high-yielding clones. He noted that macro-propagation in these hybrids was largely unsuccessful, achieving only about 17% rooting. Consequently, the team adopted micropropagation through tissue culture, which proved successful for mass multiplication. Dr. Thakur emphasized that Corymbia hybrids possess higher wood density than many other species, making them suitable for load-bearing columns, flooring, and related structural applications. He said FRI has identified clone E14/FRI- CH-1 as the best-performing genotype and recommended its release for the Trans-Gangetic region.

Dr. Thakur further informed the committee that 16 Poplar clones have been developed at FRI, of which four were identified as high-yielding and suitable for first-level screening for plywood applications. Among these, FRI-PD 11 and clones 6, 7, 8, and 9 were highlighted for further demonstration trials and industrial evaluation where macro propagation from cuttings are very successful.

In response to queries from industry representatives, he clarified that only tissue culture is a viable option for mass multiplication of selected Corymbia clones, and that micropropagation protocols can be standardized to support large-scale plantation programmes. Regarding technology transfer, he emphasized that clonal material should transferred through a formal Material Transfer Agreement (MTA), either on a one-time payment basis or through a royalty- based model, as mutually agreed.

Industry representatives also suggested establishing demonstration plots in North and South India to promote adoption. Dr. Thakur informed that field demonstrations have already been conducted in Uttarakhand, where farmers are achieving encouraging growth and economic returns. Further, demonstration trials can be established in southern parts of India also. He assured that planting materials will be supplied by FRI. The screening for wood properties and peeling properties for plywood can be taken up for Corymbia hybrids under this project. He emphasized that Corymbia hybrid clonal plantations through tissue culture can be effectively scaled up, ensuring higher productivity, uniformity, improved wood quality, and enhanced economic benefits for both farmers and wood-based industries.

Dr. M.P. Singh sought clarification on the genetic gain achieved in the newly developed clones over those currently cultivated by farmers. Dr. Ajay Thakur of Forest Research Institute informed that the improved Poplar and Corymbia clones demonstrated more than 30% yield advantage, with superior growth compared to existing eucalyptus clones; 413 and P 23 and 7 times more productivity than parental species.

The Director, IWST, confirmed that wood density had been assessed for the four best- performing clones among the 16 evaluated. Responding to queries from Mr. J.K. Jain of Greenply Industries Ltd., Dr. Thakur clarified that tissue culture propagation does not pose mutation risks and does not result in significant variation during mass multiplication. He further informed that licenses for clonal multiplication have been issued to three companies located at Raipur, Muzaffarpur, and Maharashtra.

Mr. Ashish Mishra of Greenlam Industries Ltd. inquired about the feasibility of farmer-level trials with tissue cultured planting stocks taking into consideration of high costs of planting materials and the timeline for transferring clonal material from institute to field. Dr. Thakur stated that although macropropagation success remains below 17%, tissue culture-based planting material has already been adopted by farmers in Punjab, Haryana, and Uttar Pradesh.

Dr. M.P. Singh sought clarification on the rotation or productivity gain of Corymbia over Eucalyptus; Dr. Thakur indicated substantially higher returns (over 30%) under comparable conditions. Queries regarding cellulose, hemicellulose content, and longitudinal density variation in Corymbia were raised; Dr. Thakur noted these analyses had not yet been undertaken, while the Director observed that density may initially increase upward before stabilizing.

Participants emphasized establishing demonstration plots all over India to encourage farmer adoption. Dr. M.P. Singh recommended inclusion of macropropagation research and demonstration components in the project. The Director, IWST reiterated that the proposed project includes demonstration trials and evaluation of the best-performing clones for plywood and panel industries.

The participants also discussed the process of the Material Transfer Agreement (MTA) between institutes and industries. Scientists from ICFRE-IFGTB explained that the MTA procedure includes two parts: (i) a one-time payment at the time of licensing (which varies from species to species), and (ii) a 1% royalty paid to the breeder. They also informed that IFGTB has issued 11 licenses to industries and farmers.

Dr. B. Nagarajan, Scientist G and GCR of ICFRE-Institute of Forest Genetics and Tree Breeding (IFGTB) presented the concept of "Industrees for Industries," emphasizing the role of genetically improved clones in delivering superior wood quality, particularly for pulp and paper industries. He stressed that genotype is the foundation of any breeding programme and referred to C. M. Donald's (1968) ideotype concept for defect elimination, yield selection, and ideotype building for enhanced veneer recovery.

He discussed technical approaches such as converting

conical to cylindrical volume for improved industrial utilization, anatomical wood assessment, and veneer-quality–assisted sampling for superior genotype selection. Key clones highlighted included Eucalyptus (EC4; hybrids EH1 and EH2), Melia dubia (GK10), Neolamarckia cadamba (five superior clones under multilocation trials), tissue-culture–multiplied teak clones adopted by farmers, and Casuarina clones CJ9 and CH5 (speed clone) with potential for plywood and panels. He noted strong site responsiveness of clones, underscoring soil effects on performance, and emphasized forward–backward linkages and the Veneer Tree Crops (VTC) Consortium model to strengthen industry–farmer integration.

Responding to queries, Dr. Nagarajan stated that high-density Casuarina plantations generally follow 1 m × 1 m spacing with ~2.5-year rotations for pulp and pole markets; specific Casuarina junghuhniana clones (e.g., CJ9) may be suitable for plywood after evaluation. Addressing branching concerns of junghuhniana species, it was informed that Clone CJ9 has straight stem and less branching.

Industry representatives noted that Toona ciliata and Bombax ceiba are mainly used for particle board and MDF, and suggested inclusion of researchers from TNAU and FCRI in future meetings, with emphasis on plywood suitability studies. IFGTB scientists further briefed on plantation parameters for Eucalyptus, Melia dubia, Kadamba, Teak, and Casuarina-spacing ranging from 3.0 × 1.5 m to 1.5 × 1.5 m and a rotation age of ~30 months.

Dr. M. P. Singh, recommended a two-phase project approach, with Phase I focusing on systematic screening, evaluation, and extension of the best-performing clones before scaling up for industrial deployment.

Dr. Aditya Kumar, Scientist-E from ICFRE-Institute of Forest Productivity (IFP) Ranchi, informed the committee that five Poplar clones have been released by IFP Ranchi for the Indo-Gangetic plains are currently being evaluated for growth performance against control and farmer-grown varieties. He stated that first and second-generation progeny trials of Melia dubia have been established in Bihar and Jharkhand under rainfed conditions, though not under waterlogged sites. At present, improved varieties (but not specific clones) are available in Melia. He further noted that 15 Casuarina progeny trials have been established in Bihar, with advanced breeding material being shared by Dr. Nicodemus from ICFRE-

Institute of Forest Genetics and Tree Breeding (IFGTB) for testing. Progeny trials of Gmelina arborea are also available.

Dr. Satyam Bordoloi, Scientist-E from ICFRE-Rain Forest Research Institute (RFRI) Jorhat Assam, presented tree improvement activities covering clones, progeny trials, and seedling seed orchards of ten species, including teak, Terminalia, Dipterocarpus, Gmelina arborea, Melia composita, Pinus, Magnolia champaca, Poplar, and bamboo. He informed that bamboo planting material is licensed to industries or farmers for five years, with no royalty system currently in place, though the institute is considering introducing one in future.

Dr. M.P. Singh IFS (Rtd.), Director General, FIPPI, suggested that the project title may be revised and it was discussed among participants.

During discussions, participants suggested evaluating Duabanga grandiflora and Khaya anthotheca for their potential suitability in plywood and panel product applications.

After the lunch break, industry partners emphasized that the plantation methodology under the project must be practical and scalable for large-scale adoption.

Mr. Ashish Mishra of Greenlam Industries Ltd. proposed implementing the project in clearly defined phases:

1. Identification Phase

- Identification of clonal material and preliminary suitability assessment for plywood & panel products.

(i) New clones suggested by ICFRE institutes
(ii) Already proven, high-productivity clones available with industries but not yet evaluated for plywood and panel suitability

2. Evaluation Phase

- Detailed suitability assessment based on:

(i) Wood property testing
(ii) Field performance evaluation of new clones through Multi-Location Trials (MLTs)

- Assessment of productivity and wood quality parameters relevant to the plywood and panel sector

3. Selection and Deployment Phase

- Identification of best-performing clones
- Establishment of a germplasm bank for immediate and mass propagation through institutes and nursery partners
- Extension of selected clones to farmers' fields

Industry Involvement

Guidelines may be developed for processing protocols, wood testing standards, and establishment of clone trials within industry catchment areas, with technical guidance from research institutes. Participants also stressed the importance of transparent and accessible data sharing between R&D institutions and industry partners.

Mr. J.K. Jain of Greenply Industries Ltd. suggested that screening of potential indigenous species and clones be undertaken zone-wise (North, East, South, and West).

Accordingly, participants tentatively allocated species and progeny trials as follows:

- **North Zone:** Ailanthus excelsa, Toona ciliata
- **East Zone:** Duabanga, Gmelina arborea
- **South Zone:** Adina cordifolia, Ailanthus triphysa
- **West Zone:** Ailanthus excelsa, Neem

The meeting further discussed key wood properties to be analyzed, including:

- Rapid screening of existing clones using Non-Destructive Testing (NDT)
- Increment core sampling for colour assessment, basic density, Modulus of Rupture (MOR), Modulus of Elasticity (MOE), and growth parameters

It was agreed that veneering and panel processing trials would be carried out by industry partners, while detailed wood property testing would be undertaken at ICFRE-IWST.

It was decided that shortlisted existing clones of ICFRE for species namely, Corymbia Hybrids, Poplars, Teregrandis hybrids, Melia dubia, Casuarina, Eucalyptus, Cadamba, Gmelina arborea, and Ailanthus triphysa will be included for demonstration trials in catchment areas of Industries.

Each industry participant shared their catchment area where clonal demonstration plots can be established:

I. Greenply Industries Ltd.

1. Nagaland – Tizit
2. West Bengal – Kriparampur
3. Uttar Pradesh – Sandila
4. Gujarat – Rajkot

II. Greenpanel Industries Ltd.

5. Andhra Pradesh – Srikalahasti
6. Uttarakhand – Rudrapur

III. Century Plyboards (India) Ltd.

7. Andhra Pradesh – Kadapa
8. Tamil Nadu – Chennai
9. Punjab – Hoshiarpur
10. Assam – Guwahati

IV. Action TESA

11. Uttarakhand – Rudrapur
12. Andhra Pradesh – Visakhapatnam

V. Greenlam Industries Ltd.

13. Andhra Pradesh – Nellore/Tirupati
14. Tamil Nadu – Tindivanam
15. Uttar Pradesh – Sitapur

VI. Rushil Decor

16. Karnataka: Chickmagaluru

The Final Recommendations

The project envisages to be carried out in a phased manner with specific deliverables to the industries, in terms of raw material augmentation, qualitative improvement and induction of new clones. The project activities shall be as follows:

1. Project Title was decided: "Evaluation and Extension of Clones/Varieties Developed by ICFRE for the Plywood and Panel Industry"
2. Evaluation of wood properties of the clonal material currently used by the industries for assessing the variability and identification of superior clones optimal for plywood and panel products besides farm productivity.
3. Rapid screening of existing clones/varieties developed by ICFRE institutes (Eucalyptus clones and Hybrids, Casuarina clones and hybrids, Kadamba, Poplar, Corymbia, Melia, Ailanthus triphysa etc.) for wood quality parameters by NDT and identification of superior clones / varieties.
4. Lab scale studies on suitability of identified clones for panel production (plywood, particleboard and MDF). The participating industries will provide wood material of the prevailing species/clones (billets / logs / veneers / chips / fibers).
5. Evaluation of wood properties of ICFRE clones to identify the superior clones for plywood and panel industries in ICFRE-IWST.
6. It was decided to take up NDT and veneering studies of FRI clones at FRI institute only.
7. Supply of quality planting material and technical guidelines/package of practices of shortlisted clones/varieties by the respective ICFRE research institutes to the participating industries.
8. Demo plot of shortlisted clones shall be established at industrial catchment areas by the industries with the technical support from the participating ICFRE institutes (about 16 catchment areas pan India).
9. Initiation of progeny trials of potential indigenous species for plywood and panel products in the areas suggested by the participating industries. (the species shall be shortlisted on mutual agreement).
10. The periodical morphometric/yield data generated from the study shall be accessed by both the participating industries and the institutes of ICFRE.
11. It was decided to have second phase of the study with the support from the MoEF&CC, GoI or any other prospective funding agency to promote alternative indigenous species (region wise) suitable for panel products.
12. All participants decided and agreed upon on zone wise indigenous species for 2nd phase of the project as follows.

    North Zone: Ailanthus excelsa and Toona ciliata

    East Zone: Duabanga grandiflora and Gmelina arborea;

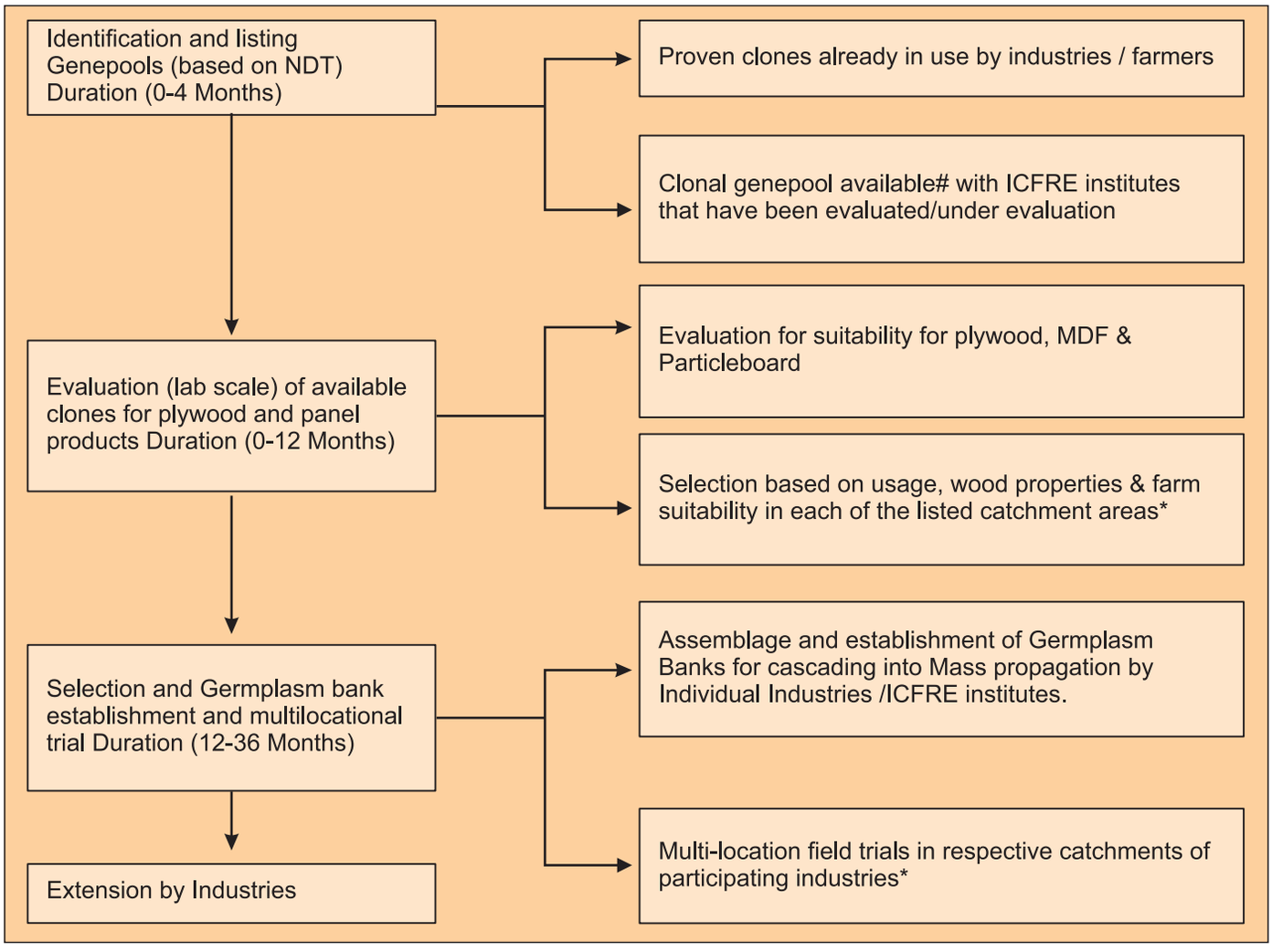
    South Zone: Adina cordifolia and Ailanthus triphysa

    West Zone: Ailanthus excelsa, Schima wallichii (DC.) Korth and Neem

BROAD FRAMEWORK FOR PROJECT

PHASE – I

Objective: To identify available clonal genepools of various species & evaluate their suitability for plywood & panel industry.



List of Participants Present during the Finalization Meeting of the Collaborative Project

A. Participants from FIPPI , Plywood & Panel Industries

1. Dr. M. P. Singh, IFS (Rtd.), Director General, Federation of Indian Plywood & Panel Industry (FIPPI)
2. Mr. J K Jain, Greenply Industries Limited
3. Mr. Ashish Mishra, Greenlam Industries Limited
4. Dr. Dr. Purosottam, Greenpanel Industries Limited
5. Mr. Vinay Kumar T., Century Panels Limited
6. Mr. R P Joshi., Balaji Action Buildwell Pvt. Ltd. (Action TESA)

B. Participants from ICFRE Institutes

1. ICFRE-IWST, Bengaluru (Institute of Wood Science and Technology)

1. Dr. Shakti Singh Chauhan, Scientist G, Director
2. Shri Rajesh S Kallaje, IFS, GCR
3. Dr. Manoj Kumar Dubey, Scientist G
4. Dr. Maheshwar T Hegde, Scientist G
5. Dr. V Prakash, Scientist E
6. Dr. Archana R, Scientist C
7. Dr. Ruby Patel, Scientist C
8. Mr. Rohit Sharma, Scientist B

2. ICFRE-IFGTB, Coimbatore (Institute of Forest Genetics and Tree Breeding)

1. Dr. B. Nagarajan, Scientist G & GCR
2. Dr. D. Rajasugunasekar, Scientist G
3. Dr. S Saravanan, Scientist G

3. ICFRE-FRI, Dehradun (Forest Research Institute)

1. Dr. Ajay Thakur: Scientist G (Attended Online)

4. ICFRE-RFRI, Jorhat (Rain Forest Research Institute)

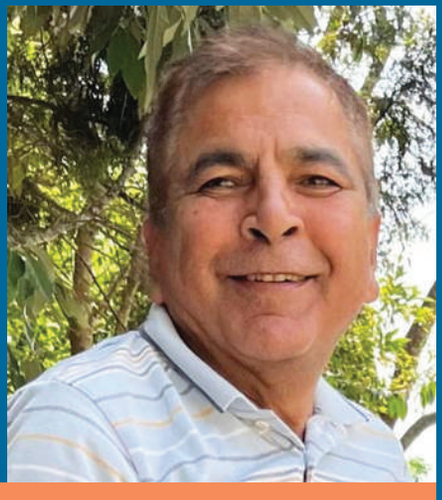
1. Dr. Satyam Bordoloi: Scientist E

5. ICFRE-IFP, Ranchi (Institute of Forest Productivity)

1. Dr. Aditya Kumar: Scientist E.❑

A Case Study of Claiming Tax – Free Agriculture Income from the Sale of Agroforestry Grown Wood

R C Dhiman*



T D Khurana**

Introduction

Wood production and supply has gradually shifted from forests to agriculture land post-enunciation of Indian Forest policy 1988 which advocated conservation oriented management of government forests for ecological and environmental services. The policy also advised wood based industry (WBI) to grow wood raw material on agriculture land with the help of farmers. According to ICFRE recent estimates of 2025, wood production from forests is now only 2.23 Mm3 (million cubic meters) whereas trees predominantly grown on agriculture land produce 207.58 Mm3 wood. There are around 10106.8 M trees in agriculture land constituting wood growing stock of 1606.81 Mm3. These trees now constitute a significant wood resource for meeting both the domestic and industrial wood supplies in addition to supply of 88.88 Mm3 fuelwood and 23 Mt of tree fodder. A huge value chain has developed around these trees which has created significant economical activities to generate financial benefits to numerous stake-holders. The process of growing trees for economical gains on agriculture land was systematically started around 1975 which has gradually matured in around five decades period.

Overwhelmingly, farmers grow these trees with an intention of economical considerations. Estimated 30 M farmers are engaged in growing trees in agroforestry which is helping in doubling their income and economical empowerment. Many farmers report some production models viz., Poplar- and Leucaena-based agroforestry is currently generating around Rs. 5 lakh/ha/year net returns and motivating numerous fellow farmers to grow trees for improving their economical condition by selling their wood and helping in averting the wood crisis in the country. Crop harvests from agriculture fields are treated as agriculture produce and Income from them as agriculture income. Growing trees on agriculture fields is also treated as agriculture activity and income from them as agriculture income at par with other crops. Agriculture income is treated as tax-free under Indian taxation regulations. This paper reviews the interpretation of legal status of agriculture income from trees grown on agriculture land and presents a case study of a farmer who has accounted handsome agriculture income in his Income Tax Return (ITR) from selling the wood from such trees.

Legal status of Agriculture income

Legislations to levy taxes in India are enacted by both the states and centre. Income Tax Act 1961 which provides overall taxation structure in the country is a central legislature whereas enacting legislation on tax on agriculture income is in the state jurisdiction. Agricultural income, as defined under Section 2(1A) of the Income Tax Act, 1961 is generally exempted under Section 10(1).

The definition of "Income" is given under Section 2(24) of the Act which includes all earnings or gains received or accrued to a person during a financial year; whether in cash or kind and includes items like salary and wages, profits and gains of business or profession, income from house property, capital gains, interest, dividend, commission, perquisites and allowances, voluntary contributions, winning from lotteries, gaming, betting, any benefit or perquisite arising from business or profession, and deemed income (not actually received during the years).

"Agriculture Income" is defined under Section 2 Sub-section (IA) of the Income Tax Act 1961. It includes income derived from land situated in India and used for agriculture purposes. It may include rent from agriculture land in India, revenue directly linked to agriculture use, and income from farm building located on or near the agriculture land. It reads as:

*Advisor-Sustainable Agroforestry Initiatives, Greenlam Industries Ltd. (Ex-Unit Head, Wimco Seedlings ITC-PSPD).

**Ex-Unit Finance Head, Wimco Seedlings-ITC PSPD, Rudrapur, Uttarakhand.

(a) Any rent or revenue derived from land which is situated in India and is used for agricultural purposes.

(b) Any income derived from such land by-

I. Agriculture; or

II. The performance by a cultivator or receiver of rent-in-kind of any process ordinarily employed by a cultivator or receiver of rent-in-kind to render the produce raised or received by him fit to be taken to market; or

III. The sale by a cultivator or receiver of rent –in-kind of the produce raised or received by him, in respect of which no process has been performed other than a process of the nature described in paragraph (ii) of this sub-clause;

(c) Any income derived from any building owned and occupied by the receiver of the rent or revenue of any such land, or occupied by the cultivator or the receiver of rent-in-kind, of any land with respect to which, or the produce of which, any process mentioned in paragraph (ii) of sub clause (b) is carried on.

Agricultural income could be claimed by individuals or corporate having own land or on lease to practice agriculture. WIMCO Ltd. was the first corporate house in India which started engaging in Agroforestry activities in India onward 1975. Wimco Seedlings Ltd. was created after7 years thereafter based on the ongoing poplar promotion programme of WIMCO Ltd. The company acquired agriculture land and started growing poplar trees and intercrops on such land. Wimco Seedlings Ltd has been claiming and being allowed exemption related to agricultural income since its inception (Indian Kanoon 2007).

Case Study

A progressive farmer (identity not disclosed) in the Poplar growing region of Northwestern India cultivated 14.944 ha irrigated agriculture land including agriculture land of his sons residing abroad. He is a progressive farmer who has been one of the beginners of starting growing Poplar since early 1980's and subsequently diversified his agriculture by including Eucalyptus trees, Mango & Guava orchards, and Sugarcane as commercial crops. He also invariably grew traditional crops like wheat and some others for own consumption and sale. During the year 2023-24, he harvested 2000 Poplar trees (8 years old) and 1900 Eucalyptus trees (12 years old), the wood of which was supplied to the nearby wood based units. In addition; he also sold Mango & Guava fruits; and supplied sugarcane to a local sugar mill during that year.

Total sale of agriculture produce during the year was Rs. 102 Lakh out of which Rs. 90 Lakh was from Poplar and Eucalyptus wood and Rs.3.245 Lakh from sugarcane. He also supplied Mango & Guava fruits worth of Rs. 4 Lakh and 5 Lakh respectively to fruit trading parties. In addition, he received Rs. 2.25 Lakh Interest Income on his deposits in banks. Money received from all these activities (except interest) was claimed by him as Agriculture Income in the ITR for the financial year 2023-24 (AY 2024-25). His ITR went through securitizing and the Income Tax Department issued assessment notice to him under section 142(1) of the Income Tax Act 1961 asking for submission of the following documents to substantiate his income claims:

1. The nature of business and modus operandi during the year under consideration;
2. Certified copy of the Income and Expenditure A/c or Profit & Loss A/c., Balance sheet, Audit report along with annexure and schedules, Computation of income and Cash flow statement for the year under consideration;
3. Copy of Form 26AS along with the reconciliation of the same with receipts (Income);
4. Copy of all bank statements for the period under consideration with narration for each debit and credit entries;
5. For Agriculture Income during the year under consideration, the following documents may be supplied:

I. Nature and type of Agricultural Income along with the details of processes undertaken;

II. Measurement of agricultural land;

III. Whether agricultural land is owned or held on lease;

IV. Whether agricultural land is irrigated or rain fed;

V. Name of the district & PIN Code of location where agricultural land is situated;

VI. Copy of Khatauni (crop record maintained by State Govt);

VII. Documentary evidences on mode of sale of agricultural proceeds along with copy of contracts, if any;

VIII. Crop-wise details, yield/acre, sale invoices/mandi receipts, expenses incurred (such as for seeds, fertilizers, labour, irrigation), and net income earned;

IX. Documentary evidences with regard to expenses : seed, fertilizer, pesticides, labour charges, water bill, electricity bill, processing cost, depreciation on fixed assets, land-cess, other taxes and Interest on working capital;

X. In case of land held on lease, the amount and documentary evidences of lease rent paid;

XI. In case Agricultural Income is declared first time then date & source of investment in land, if any;

XII. Details of sale of immovable property during the year, if any;

XIII. Nature & details of total income, if any;

XIV. Details of Kissan Credit Card;

XV. Cash flow statement;

XVI. Copy of bank statements to support the claim;

XVII. You have claimed higher agricultural income in the current year as compared to the previous year, despite the landholding remaining the same. Please explain the reasons for this increase and substantiate it with documentary evidences, including changes in cropping pattern, improved productivity, or rise in market price;

XVIII. Submit complete documentary evidence to substantiate the Agricultural Income claimed in your ITR;

6. Please furnish the details of any scrutiny assessment completed in earlier 3 years in the case under reference along with copy of such assessment order passed and also furnish details of appellate status, if any. Please ensure that the information should be complete and uploaded systematically in the given format and in the same sequence. The pages of the reply should be duly numbered and indexed. Please ensure that the answers and annexure should be to the point. Also ensure that uploaded file is not password protected. You are requested to co-operate and comply with the above within the time period stimulated in the notice for early completion of assessment in your case. Kindly note that non-compliance to this notice may lead to completion of the assessment of your case u/s 144 of the Income tax Act, 1961 and proceedings u/s 272A(1)(d) of the Income Tax Act, 1961 could also be initiated against you.

Table 1: Summary of income and expenditure submitted by the Assessee and appended in the Assessment order.

Annex-1 Agricultural Income & Expenditure During FY 2023-24	
Particulars	**Amount (Rs)**
Agricultural Income	
Sale of Wood	9,016,827.00
Sale of Fresh Fruits	890,000.00
Sale of Sugarcane	324,249.50
Total Agricutural Income	**10,231,076.50**
Agricultural Expenditure	
Purchase of Poplar Saplings	75,000.00
Interest on Kissan Credit Card	111,378.00
Purchase of Fertilizer	4,410.00
Purchase of Diesel	9,900.00
Wage Payments	264,015.00
Total Agricutural Expenses	**464,703.00**
Net Agricultural Income	9,766,373.50
Interest Income	224,909.00
Total income as per ITR	**224,909.00**

Assessee farmer submitted the summary report with demanded documents in consultation with his Council (Co-Author of this paper). The reply includes summary of the desired information with special focus on agriculture proceeds and includes the sale of Poplar and Eucalyptus wood with proofs worth of around Rs. 20 Lakh, 13 lakh, 28 Lakh and 29 Lakh from 4 different parties along with receipts of Rs. 4 Lakh from sale of Mango fruits, Rs. 5 Lakh from Guava fruits from fruit trading parties and around Rs. 3.25 Lakh from sale of sugarcane. The Income from sale proceeds of claimed agriculture produce was received through banking channels. He submitted Khasra-Khatauni of the land having recorded trees on it which also includes address and location of the Assessee to substantiate his claims on agriculture land and agriculture produce. The statement of Income and Expenditure submitted by the Assessee is appended as Table 1. Wood sale transactions were supported by Mandi receipts, ledger copies provided by the concerned wood based units. The genuineness of the transactions was also proved by the corresponding banking entries. Mandi form No 6 (which is commonly referred as 6-R) details included dates of sale proceeds, quantity, rate/qtl amount and mandi fees (marketing fees) were also appended as Annexure (sample as Table 2).

Income from the sale of trees does not automatically qualify for tax-free agriculture income. As per the income tax rules, agriculture income is taken into account for the purpose of partial integration while determining the tax rate on taxable income, to ensure that higher agricultural earnings can affect the rate of tax applied to non-agricultural income, if the agricultural income exceeds Rs 5,000, even though the agricultural income itself remains tax-free. For claiming agriculture income, the taxpayer needs to prove that the trees were the result of active cultivations with operations like soil preparation, purchase of saplings and their planting with the intent to harvest. The taxpayer also needs to prove that his agricultural income is genuine one. The burden of proof lies entirely on the taxpayer. If the grower is unable to prove the genuineness of the Agriculture Income, department will likely classify the income as taxable and levy taxes by considering it from Other Sources. The provision of income tax exemption is applicable to the only crops including trees which are intentionally grown for sale with certain cultural operations and human skills. Spontaneous grown crops and trees are not in the exempt list. In few states, some other agricultural activities of commercial crops like tea, coffee etc. are normally taxed without exemption.

Wood traded from agroforestry is in unorganized sector, as such, it is predominantly unregulated and the payment system for traded tree produce is not very transparent. Tree

Table 2. A sample of submitted summary of Mandi Form No. 6 containing lorry-wise detail of wood sold.					
S No.	**Date**	**Weight (Qtls)**	**Rate per Qtl**	**Amount**	**Mandi Fee**
1	05-06-23	92.60	500.00	46,300.00	694.50
2	06-06-23	80.00	500.00	40,000.00	600.00
3	08-06-23	70.50	500.00	35,250.00	528.75
4	08-06-23	62.25	480.00	29,880.00	448.20
S	10-06-23	101.50	480.00	48,720.00	730.80
6	12-06-23	68.60	500.00	34,300.00	$14.50
7	13-06-23	86.00	500.00	43,000.00	645.00
8	14-06-23	96.80	500.00	48,400.00	726.00
9	15-06-23	103.10	480.00	49,488.00	742.32
10	17-06-23	98.90	480.00	47,472.00	712.08
11	18-06-23	95.40	480.00	45,792.00	686.88
12	19-06-23	86.00	480.00	41,280.00	619.20
13	20-06-23	84.50	480.00	40,560.00	608.40
14	20-06-23	91.20	480.00	43,776.00	656.64
15	01-07-23	73.50	480.00	35,280.00	529.20
16	03-07-23	95.60	480.00	45,888.00	688.32
17	05-07-23	88.20	480.00	42,336.00	635.04
18	28-07-23	99.80	490.00	48,902.00	733.53
19	30-07-23	68.10	490.00	33,369.00	500.54
20	15-08-23	99.20	490.00	48,608.00	729.12
21	17-08-23	60.00	490.00	29,400.00	441.00
22	18-08-23	44.90	490.00	22,001.00	330.02
23	31-08-23	81.70	490.00	40,033.00	600.50

produce, unlike that of agriculture crops, have multiple supply points making wood trade more complicated than agriculture crop produce. There are many systems operative in the wood market which includes direct wood supply by farmers to directly WBI and /or contractors, middlemen, traders etc. Some contractors including a few WBI units also purchase the standing trees in lump-sum, grade it in tradable lots and supply each grade lot to appropriate industry having demand for such grade lot. On completion of wood supply in single or multiple lots, farmers get payment immediately and/or after some days/weeks in some cases. Payments are made through banking systems or as cash. A significant payment system is in cash which may often remain out of accounting system in spite being authentic money. As such farmers tend to spent unaccounted but authentic money outside banking system exposing themselves to income tax regulations. On harvesting trees, they again tend to establish new plantations with unaccounted but authentic money. Farmers thus loose the benefit of getting authentic money being spent unaccounted due to this complex prevailing system. The major reasons for the current system is predominantly ignorance on the part of farmers; complicated and multiple documentations required for proving the trees grown by the farmers on his land and also the current prevailing system by the multiple wood purchasers. However, if it is taken up sincerely, there is huge benefit of accounting genuine money in individual accounts for any financial investment

Emerging financial regulations and digital payment systems require financial transactions through banking systems. Payment systems transacted through non-banking systems if accounted in the income tax returns are often viewed with suspicion if they are not substantiated with appropriate documents. Tree produce is often large in volume as it is accumulated wood grown in trees from their moderate to long production cycles unlike that of agriculture crops which are often seasonal. The transacted money is very large from tree produce and its handling in cash, even if it is genuine money, poses serious security.

Income from agriculture activities has traditionally been

impactful as millions of farmers are connected with it. Income from sale of trees is gradually becoming much lucrative and attractive. Government proactively supports any agricultural activities including growing of trees which help farmers to earn more. There have been numerous drives and schemes with international, central, state and private sector support to promote growing trees in almost all states in the country during the last 5 decades. It has helped many growers to adopt growing trees as their regular agriculture activity. In the past many income generating activities including those from agriculture sector were nominal, considered easy going and were usually not accounted and noticed. In the digitally evolving world, many of the transactions are now quickly captured. Taxation provisions have often been misused in the past and it is probably still ongoing by including, excluding and clubbing agriculture related income with others. People often get panic on getting caught on the wrong side of regulations and therefore accounting genuine income from genuine activities like tree based produce is in the best interest of individual growers. They therefore need to come forward to avail the positive ingredients of tree-based agriculture income in financial empowerment.

To realize the benefit of tax-free agriculture income, farmer needs to be cautious from the date he takes up plantation activity to maintain proper documentation till the trees are finally harvested and income is realized.

An indicative list of documentation is suggested below:

1. Khasra Khatauni of the land from which agricultural income is derived.
2. Khasra should have correct record of crop like nursery, Poplar and Eucalyptus trees and it should be obtained from the revenue department, every year.
3. In case the land is taken on lease, the lease agreement should also be entered with the land lord and proof of rent payment should be obtained. It is also advisable to pay rent through banking channels. Tax deduction is not required for land rent payment up to Rs 6 Lakh per annum from the financial year 2025-2026.
4. Sale of plantation wood should be sold through Mandi and farmer copy of Mandi Receipt (6R) should be obtained.
5. Agreement with buyer if any.
6. Account statement or confirmation of purchase from the buyer.
7. Address, PAN/ GST number of the buyer.
8. With regard to expenses like fertilizer, pesticides, insecticides, HSD and seed proper bill should be obtained and payment should be made preferably through banking channels.
9. In case electricity is used for irrigation, electricity bill.
10. Bank statements of all bank accounts including Kissan Credit Card.

Once the Income Tax return is filed by the farmer, he may get assessment notice from department as has happened in the case study mentioned here. He needs not to get panic, if the documentation is complete to support genuine expenditure and income from different agriculture activities. Income Tax Department may ask many complimentary and supplementary documents to trace the transactions as in the current case. Better to take help of qualified chartered accounted who has handled such cases.

A few knowledgeable and large farmers have now started accounting their grown trees from the day of purchasing nursery plants to their planting, growing, harvesting and selling of wood; and accounting income obtained from them in their ITRs to claim Tax-free Agriculture income. Farmers following the proper accounting procedure in production and sale of trees help them to account genuine money for better financial empowerment. The case-study presented here illustrates how knowledgeable and aware farmers could create necessary documentation and claim agriculture tax-free income from selling the wood. He can save a huge taxation liability on his income which otherwise could have been treated as income from "Other Sources" and taxed. This also helped him to account his genuine income in his account for any further activity for genuine investment/ expenditure.❑

One Year Since QCOs Were Enforced: An Assessment of Import Trends in Plywood and Panel Products

Rishabh Gandhi
Economic Officer, Federation of Indian Plywood & Panel Industry (FIPPI)

1. A Year of QCOs on Plywood and Panel Products

1.1 Revisiting Why QCOs Were Enforced

The Indian plywood industry has a well-established history spanning over a century, with its origins dating back to 1906–07, reflecting its long-standing presence and evolution in the country. Despite this, the plywood and panel sector has long been characterized by a deep structural divide, with nearly 80% of the industry comprising MSMEs, while organized large-scale players constitute only a small share of the overall manufacturing base.

The challenge becomes more pronounced as a significant proportion of these fragmented, small-scale players operate outside formal quality and taxation frameworks, thereby gaining an undue competitive advantage over organized players manufacturing high-quality products. This, in turn, disincentivizes the transition of such players into the formal ecosystem.

In the absence of mandatory standardized benchmarks applicable to all products entering the Indian market, the sector witnessed a growing influx of plywood and panel products of inconsistent and, in many cases, substandard quality – originating from both domestic and foreign sources. Monthly imports of plywood and panel products reached a high of ₹482 crore in January 2025, with a considerable share comprising such lower-quality panels.

The widespread availability of inferior products in the market not only posed safety risks for end consumers but also created practical challenges for carpenters, who were often required to undertake rework, resulting in loss of time and diminished confidence in workmanship.

It was in response to these concerns that the Government of India enforced Quality Control Orders (QCOs) on plywood and panel products, with effect from February 2025. Specifically, the Plywood and Wooden Flush Door Shutters (Quality Control) Order, 2024 came into effect on 28th February 2025, while the Wood-Based Boards (Quality Control) Order, 2024 became effective on 11th February 2025. These orders mandate that all plywood and panel products entering the Indian market must be manufactured by entities – domestic or foreign – holding valid BIS (Bureau of Indian Standards) licenses.

1.2 Understanding How QCOs Are Transforming the Indian Plywood and Panel Industry

With over a year having passed since the enforcement of QCOs on plywood and panel products, their impact on the industry is already becoming evident. These orders are not merely regulatory requirements for domestic and foreign players to comply with; rather, they are key drivers of the structural transformation underway in the plywood and panel sector – transitioning it from an import-vulnerable and fragmented industry into one that is more transparent, disciplined, and investment-ready.

Foremost, these orders mandate compliance with prescribed quality standards by all domestic manufacturers and, in doing so, indirectly facilitate their integration into the formal taxation framework. This, in turn, contributes to improved government revenue realization while also creating a more level playing field for organized large-scale players who have traditionally produced high-quality products.

Importantly, the assurance that plywood and panel products available in the market conform to defined quality standards is strengthening consumer confidence. This has led to a greater willingness among consumers to pay for quality-assured products. Alongside, these orders have also contributed to import substitution by ensuring that only standardized and compliant panels are permitted entry into the Indian market.

These developments are not only enabling domestic manufacturers to utilize their installed capacities more effectively but are also creating a conducive environment for further investments and capacity augmentation within the sector. In essence, QCOs have laid the foundation for a more structured and resilient plywood and panel industry, thereby advancing the objectives of key policy initiatives such as Make in India and Atmanirbhar Bharat.

1.3 Understanding the Importance of Import Trends in the Post-QCOs Context

While the transformation in the Indian plywood and panel sector strongly signals the effectiveness of QCOs, their most direct and measurable impact is reflected in import trends. One of the primary objectives behind the implementation

of these orders on plywood and panel products has been to restrict the entry of substandard panels from foreign sources.

In this context, assessing import trends becomes critical to evaluating the effectiveness of QCOs implemented over the past year, particularly in terms of their success in limiting the entry of panels originating from foreign manufacturers not holding valid BIS licenses.

2. Import Trends in Plywood in Post-QCOs Period

2.1 Trends and Distribution of Plywood Imports by Source Country Post-QCOs

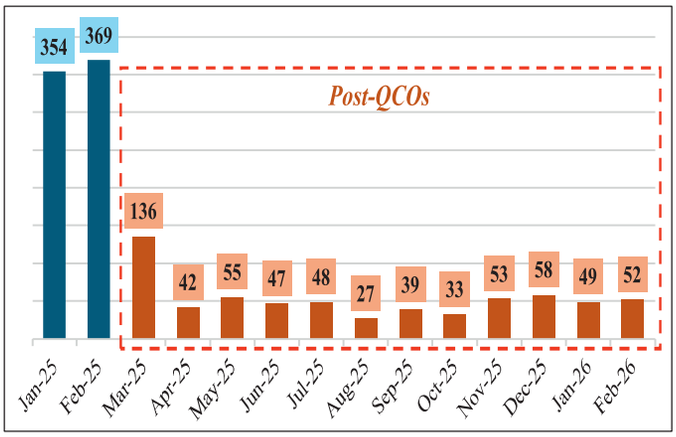


Figure 1: Monthly Trend of India's Plywood Imports (in ₹ crore).

During the months leading up to the enforcement of QCOs, India's plywood imports reached elevated levels, recording highs of ₹354 crore and ₹369 crore in January and February 2025, respectively. This surge was primarily driven by aggressive stockpiling by importers ahead of the QCOs implementation deadline.

However, following the enforcement of QCOs in February 2025, imports declined sharply to ₹136 crore in March 2025, marking a clear shift in import trends immediately after the introduction of the regulatory framework. Subsequently, imports continued to moderate in the following months, stabilizing at significantly lower levels, with imports recorded at ₹52 crore in February 2026. The absence of any meaningful rebound to pre-QCO levels suggests a structural correction in import patterns rather than a temporary fluctuation.

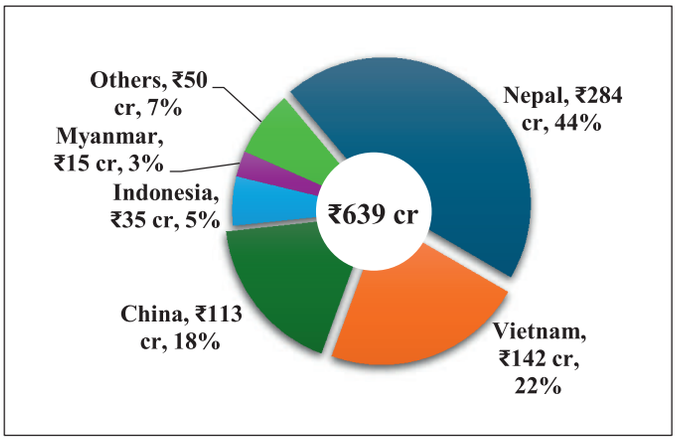


Figure 2: Distribution of India's Plywood Imports by Source Country Post-QCOs (Mar 2025 – Feb 2026).

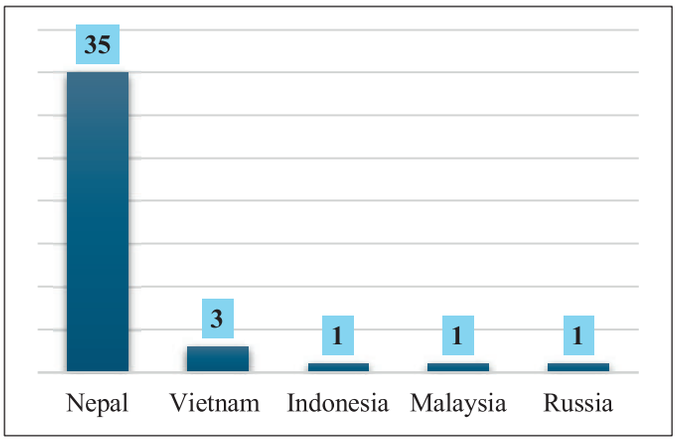


Figure 3: Number of Foreign Manufacturers Holding BIS Licenses for Plywood, by Country.

During the post-QCOs period (March 2025 to February 2026), India's total plywood imports stood at ₹639 crore, with nearly 84% of these imports concentrated among three countries – Nepal, Vietnam, and China. Nepal emerged as the largest source country, accounting for imports worth ₹284 crore and a share of 44%, followed by Vietnam and China, which accounted for 22% and 18% of total imports, respectively.

However, data from the BIS portal on licensees under the Foreign Manufacturers Certification Scheme indicates that, as on 30th March 2026, a total of 41 foreign manufacturers are issued BIS licenses for plywood, of which 35 are based in Nepal, 3 in Vietnam, and 1 each in Indonesia, Malaysia, and Russia. Notably, BIS licenses for Vietnam-based manufacturers have been issued only in the recent period.

Despite no China-based manufacturers being issued BIS licenses for plywood and Vietnam-based manufacturers receiving licenses only recently, both countries continue to remain among the top source countries for India's plywood imports in the post-QCOs period – highlighting a clear gap between import flows and compliance under the QCOs framework.

2.1.1 Vietnam in India's Plywood Imports Post-QCOs

Plywood imports from Vietnam exhibited a trend broadly

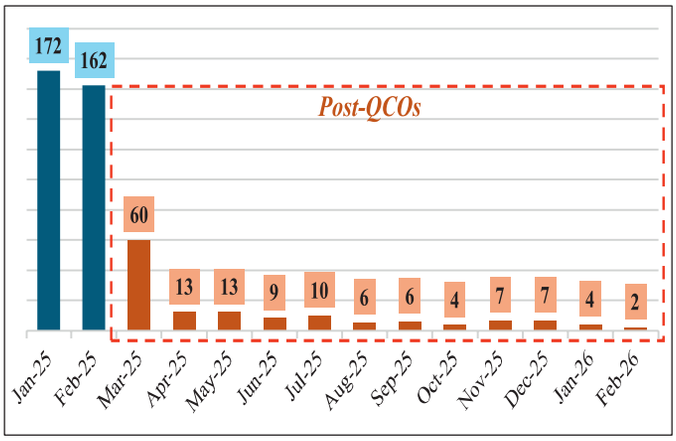


Figure 4: Monthly Trend of Plywood Imports from Vietnam (in ₹ crore).

similar to that observed in India's overall plywood imports. Imports rose to elevated levels in the months leading up to the enforcement of QCOs, reaching ₹172 crore and ₹162 crore in January and February 2025, respectively. However, following the implementation of QCOs, imports declined sharply to ₹60 crore in March 2025 and continued to moderate thereafter.

Notably, imports from Vietnam remained subdued in the subsequent months, declining to as low as ₹2 crore in February 2026. When viewed alongside the recent issuance of BIS licenses to Vietnam-based manufacturers, this trend suggests that earlier import flows may not have been fully aligned with the prescribed compliance requirements. The subsequent moderation in imports indicates a gradual strengthening of compliance under the QCOs framework.

Furthermore, the arrival port-wise distribution indicates that plywood consignments from Vietnam during the post-QCOs period (March 2025 to February 2026) were concentrated across a limited number of ports. Chennai Port emerged as the primary entry point, accounting for approximately 39% of such imports, followed by Jawaharlal Nehru Port (Nhava Sheva) in Navi Mumbai and Mundra Port in Gujarat, which accounted for about 31% and 20%, respectively.

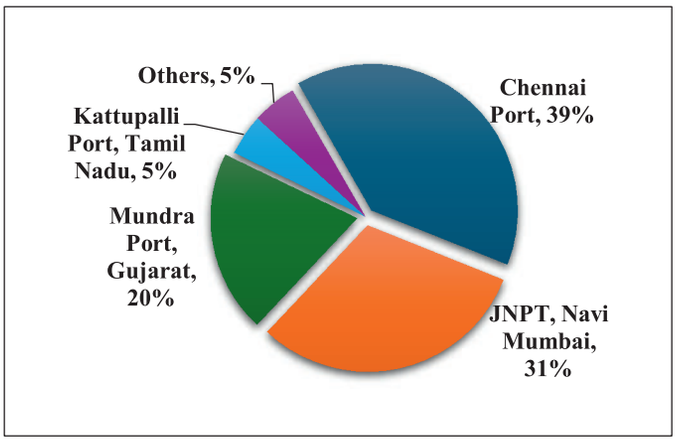


Figure 5: Distribution of Arrival Ports for Plywood Imports from Vietnam Post-QCOs (Mar 2025 – Feb 2026).

2.1.2 China in India's Plywood Imports Post-QCOs

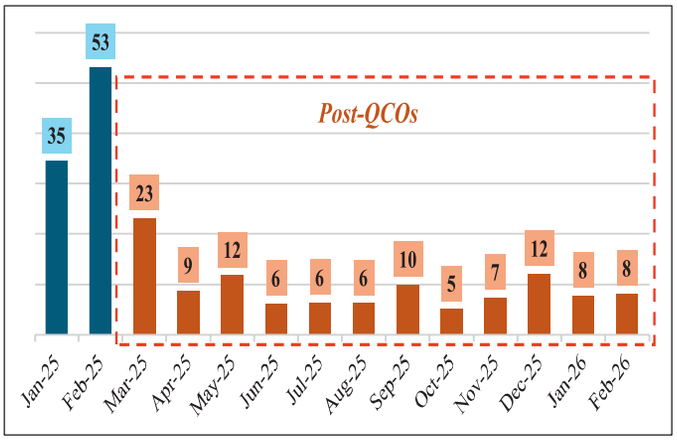


Figure 6: Monthly Trend of Plywood Imports from China (in ₹ crore)..

Plywood imports from China also exhibit a pattern broadly similar to that observed in India's overall plywood imports, particularly in the months leading up to the enforcement of QCOs. Imports rose to ₹35 crore and ₹53 crore in January and February 2025, respectively, reflecting a pre-implementation surge. However, following the implementation of QCOs, imports declined to ₹23 crore in March 2025 and moderated further in the subsequent months. While imports remained subdued thereafter, the extent of decline was relatively less pronounced compared to that observed in the case of Vietnam, with imports recorded at ₹8 crore in February 2026.

When viewed alongside the absence of BIS licenses for China-based manufacturers, this relatively moderate decline suggests that imports from China may not yet be fully aligned with the compliance requirements under the QCO framework. This stands in contrast to Vietnam, where imports have declined more sharply alongside the recent increase in BIS-certified manufacturers.

Moreover, the arrival port-wise distribution of plywood consignments from China indicates a relatively more diversified pattern of entry during the post-QCOs period, particularly when compared with imports from Vietnam. Chennai Port emerged as the largest entry point, accounting for approximately 30% of total consignments, followed by the Inland Container Depot (ICD) Tughlakabad in Delhi and Jawaharlal Nehru Port (Nhava Sheva) in Navi Mumbai, with shares of 22% and 14%, respectively.

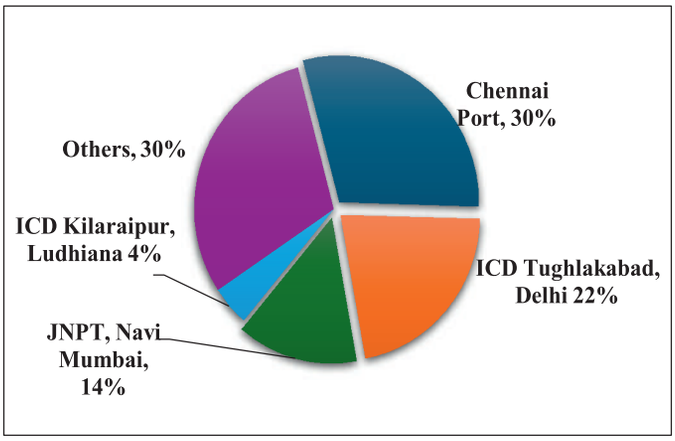


Figure 7: Distribution of Arrival Ports for Plywood Imports from China Post-QCOs (Mar 2025 – Feb 2026).

3. Import Trends in MDF in Post-QCOs Period

3.1 Trends and Distribution of MDF Imports by Source Country Post-QCOs

Similar to the pattern observed in the plywood segment, MDF imports rose significantly in the months leading up to the enforcement of QCOs, primarily driven by stockpiling by importers. Imports were recorded at ₹103 crore and ₹88 crore in January and February 2025, respectively.

However, the post-QCOs trend in MDF imports contrasts with that observed in plywood. While plywood imports stabilized at relatively lower levels following the implementation of QCOs, MDF imports exhibited greater

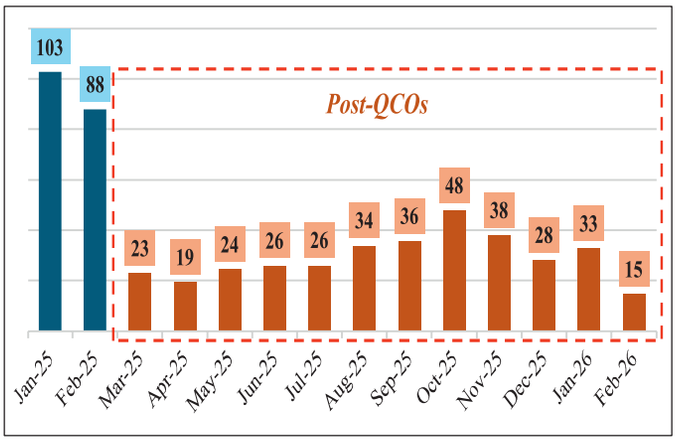


Figure 8: Monthly Trend of India's MDF Imports (in ₹ crore).

fluctuations. After declining sharply to ₹23 crore in March 2025, imports increased to ₹48 crore in October 2025 before moderating again to ₹15 crore in February 2026. This indicates that the structural correction in MDF imports has been less pronounced compared to the plywood segment.

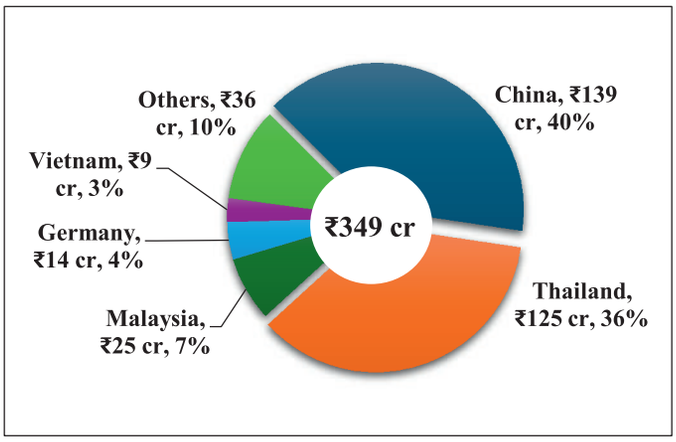


Figure 9: Distribution of India's MDF Imports by Source Country Post-QCOs (Mar 2025 – Feb 2026).

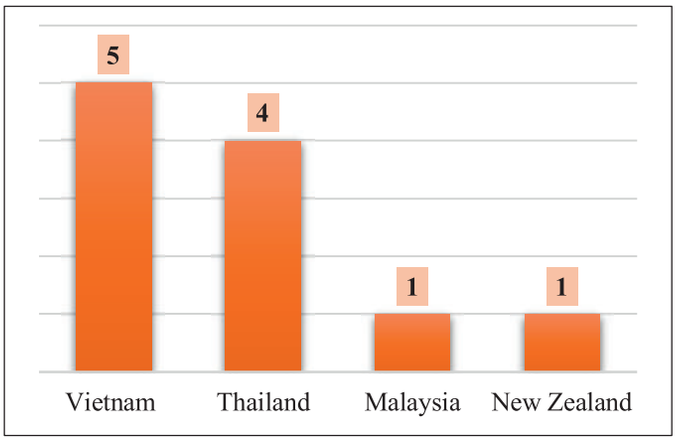


Figure 10: Number of Foreign Manufacturers Holding BIS Licenses for MDF, by Country.

During the post-QCOs period (March 2025 to February 2026), India's total MDF imports stood at ₹349 crore, with a significant proportion concentrated among a few key source countries. Notably, around 76% of these imports originated from just two countries – China and Thailand. China emerged as the largest source country, accounting for imports worth ₹139 crore and a share of 40%, followed by Thailand with a share of 36%.

However, a different pattern is observed when these trends are compared with the distribution of BIS-licensed foreign manufacturers. Data from the BIS portal on licensees under the Foreign Manufacturers Certification Scheme indicates that, as on 30th March 2026, a total of 11 foreign manufacturers have been granted BIS licenses for MDF, of which 5 are based in Vietnam, 4 in Thailand, and 1 each in Malaysia and New Zealand.

Despite no China-based manufacturers having been issued BIS licenses for MDF, China continues to remain the largest source country for India's MDF imports in the post-QCOs period – indicating a misalignment between import patterns and compliance under the QCOs framework.

3.1.1 China in India's MDF Imports Post-QCOs

While plywood imports from key source countries such as Vietnam and China declined sharply following the implementation of QCOs, MDF imports from China exhibited a contrasting pattern. Imports, which stood at ₹21 crore and ₹11 crore in January and February 2025, respectively, remained at comparable levels in the initial months after the implementation of QCOs, before declining significantly to ₹2 crore in February 2026.

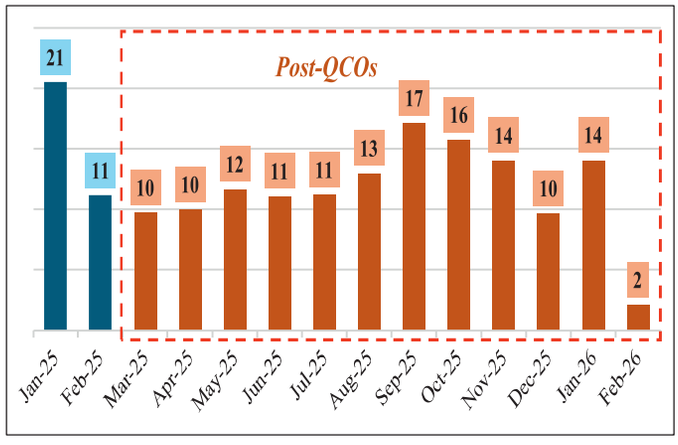


Figure 11: Monthly Trend of MDF Imports from China (in ₹ crore).

When viewed alongside the absence of BIS-licensed manufacturers in China for MDF, this trend suggests that imports from China continued at significant levels in the immediate post-QCOs period, although they have reduced and moved towards better alignment with compliance requirements in recent months.

4. Import Trends in Particle Board in Post-QCOs Period

4.1 Trends and Distribution of Particle Board Imports by Source Country Post-QCOs

Consistent with the patterns observed in the plywood and MDF segments, India's particle board imports rose in the months leading up to the enforcement of QCOs, primarily

driven by stockpiling by importers. Imports were recorded at ₹26 crore and ₹17 crore in January and February 2025, respectively.

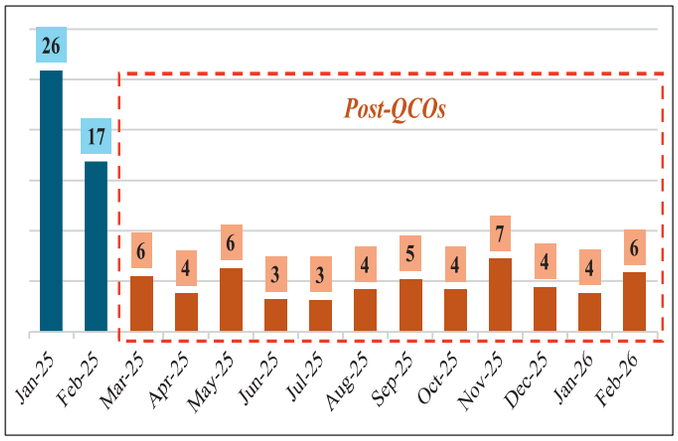


Figure 12: Monthly Trend of India's Particle Board Imports (in ₹ crore).

However, following the implementation of QCOs, imports declined sharply to ₹6 crore in March 2025 and remained at relatively low levels in the subsequent months. Imports continued to fluctuate within a narrow range thereafter, without any significant return to pre-QCO levels, and were recorded at ₹6 crore in February 2026. This sustained moderation indicates a structural correction in imports rather than a temporary decline.

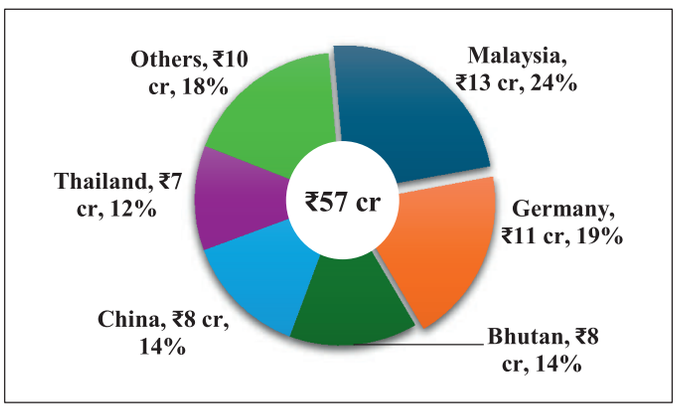


Figure 13: Distribution of India's Particle Board Imports by Source Country Post-QCOs (Mar 2025 – Feb 2026).

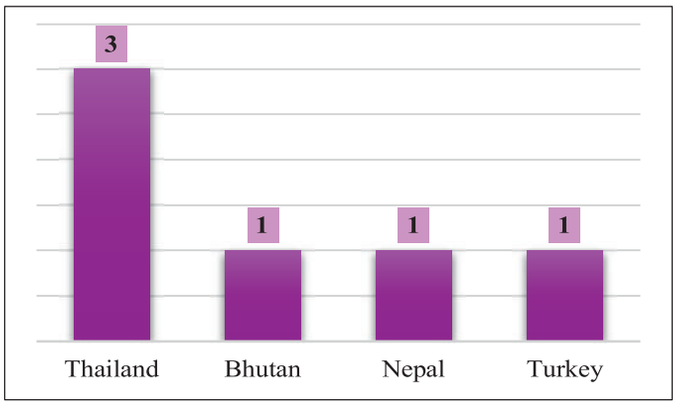


Figure 14: Number of Foreign Manufacturers Holding BIS Licenses for Particle Board, by Country.

During the post-QCOs period (March 2025 to February 2026), India's particle board imports stood at ₹57 crore, with a relatively more diversified base of source countries compared to the plywood and MDF segments. Malaysia emerged as the largest source country, accounting for imports worth ₹13 crore and a share of 24%, followed by Germany (19%), Bhutan (14%), China (14%), and Thailand (12%).

However, a different pattern is observed when these import trends are compared with the distribution of BIS-licensed foreign manufacturers. Data from the BIS portal on licensees under the Foreign Manufacturers Certification Scheme indicates that, as on 30th March 2026, only 6 foreign manufacturers have been granted BIS licenses for particle board, of which 3 are based in Thailand and 1 each in Bhutan, Nepal, and Turkey.

> *Despite no BIS licenses being granted to manufacturers in Malaysia, Germany, and China, these countries continue to remain among the top source countries for India's particle board imports in the post-QCOs period – indicating a notable disconnect between import patterns and the distribution of compliant manufacturing capacity.*

5. Concluding Observations on Import Trends and Compliance under QCOs

The analysis of import trends across plywood, MDF, and particle board segments in the pre- and post-QCOs period indicates that the implementation of QCOs has had a clear impact on moderating imports and strengthening the overall quality framework. Over a year since their enforcement, these measures have contributed to restricting imports from foreign manufacturers not holding valid BIS licenses. However, certain gaps in implementation continue to persist, as reflected in the continued presence of imports from countries without BIS-licensed manufacturers.

In the plywood segment, imports have declined substantially following the implementation of QCOs and have stabilized at lower levels, indicating a strong structural correction. In contrast, the MDF segment reflects a more gradual adjustment, with imports declining over time but not stabilizing at consistently low levels. In the case of particle board, despite a relatively diversified base of source countries, the absence of BIS-licensed manufacturers in several major exporting countries points to a comparatively weaker alignment between import patterns and compliance requirements. Overall, while QCOs have played an important role in improving quality standards and bringing greater discipline to the sector, the persistence of such gaps highlights the need for further strengthening of implementation and enforcement to fully realize the intended objectives of the framework.

Sources:

- DGCI&S, Ministry of Commerce and Industry (HS Codes: 4412, 4411, 4410).
- Bureau of Indian Standards (BIS) – Foreign Manufacturers Certification Scheme (FMCS) Licensee Database.❑

Trade Defence Mechanisms: Safeguarding Domestic Industry through Strategic Interventions

Rishabh Gandhi, Economic Officer, Federation of Indian Plywood & Panel Industry (FIPPI)

1. Introduction: Rising Trade Protectionism in the Global Economy

The announcement of sweeping tariff measures by the United States in April 2025 reflects a broader shift in the global trade landscape towards protectionist policies. This is not an isolated development, but part of a wider trend seen across major economies.

Over the past few decades, global trade moved towards greater openness, with countries reducing tariffs and encouraging cross-border trade. This led to the development of global value chains (GVCs), where production is spread across different countries, each specialising in a particular stage. As a result, economies became more interconnected and dependent on international trade.

However, this trend has gradually changed in recent years. Countries are now placing greater emphasis on protecting their domestic industries and reducing dependence on external sources. This shift has been driven by several factors, including disruptions in supply chains during the COVID-19 pandemic, rising geopolitical tensions, and concerns over excessive reliance on imports for critical goods. At the same time, excess production capacity in certain countries has resulted in the inflow of low-priced imports, which puts pressure on domestic industries. There is also an increasing focus on promoting domestic manufacturing and generating employment.

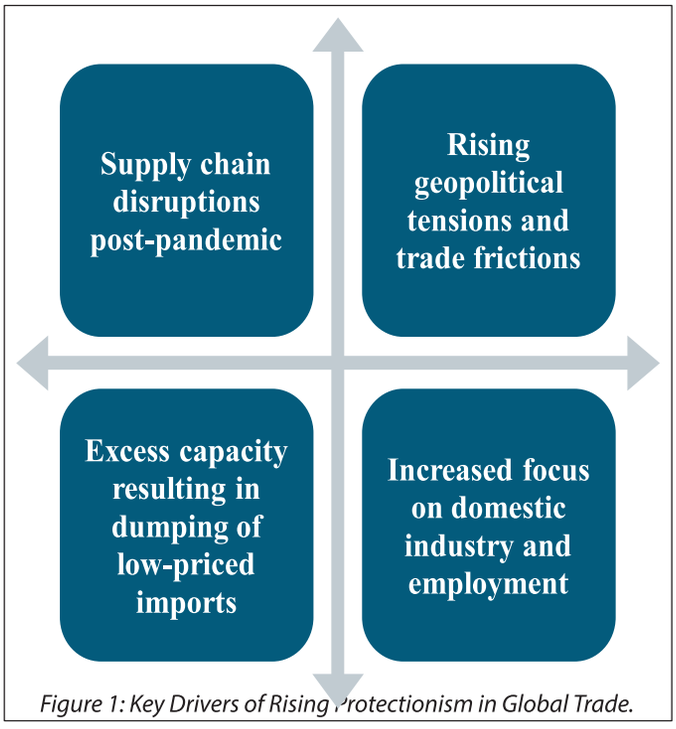


Figure 1: Key Drivers of Rising Protectionism in Global Trade.

In this changing global environment, countries are not only using traditional measures such as tariffs and quotas but are also increasingly adopting rules-based trade defence mechanisms to deal with unfair trade practices while remaining consistent with international trade rules.

2. Understanding Trade Defence Mechanisms

2.1 Concept & Rationale of Trade Defence Mechanisms

In an increasingly interconnected global economy, domestic industries can be significantly affected by unfair or trade-distorting practices adopted by other countries. These practices may include exporting goods at prices lower than their normal value or even below production cost (dumping), providing subsidies to exporters, or a sudden and sharp increase in imports of a particular product within a short period of time.

Such situations distort market conditions and create an uneven playing field for domestic manufacturers, making it difficult for them to compete effectively with their foreign counterparts. This can lead to loss of market share, reduced production, and in some cases, closure of domestic units, particularly in sectors dominated by small and medium enterprises (SMEs).

To address these challenges, governments use policy instruments known as trade defence mechanisms, which are aimed at safeguarding domestic industries from the adverse impact of such distortions. These mechanisms help restore fair competition by correcting market imbalances and ensuring that imports do not cause undue harm to domestic producers.

2.2 Trade Defence Mechanisms under the WTO Framework

The use of trade defence mechanisms is permitted under the framework of the World Trade Organization (WTO), subject to specific rules and procedures. These provisions allow countries to take action against unfair trade practices such as dumping, subsidised imports, and sudden surges in imports, provided there is sufficient evidence of injury to domestic industry.

Under this framework, three primary trade defence instruments are recognised – anti-dumping duty, countervailing duty and safeguard duty – each addressing a specific type of trade distortion. These instruments are applied following a defined process of investigation and are required to be transparent, evidence-based, and time-bound in nature.

Table 1: Key Trade Defence Instruments under the WTO Framework		
Instrument / Mechanism	**What it Addresses**	**When Applied**
Anti-Dumping Duty (ADD)	Imports priced below their normal value in the domestic market of the exporting country	When dumping causes injury to domestic industry
Countervailing Duty (CVD)	Subsidised imports benefiting from government support in the exporting country	When subsidised imports cause injury to domestic industry
Safeguard Duty (SD)	Sudden surge in imports (irrespective of source country)	When increased imports cause or threaten serious injury to domestic industry

Minimum Import Price (MIP): A Price-Based Policy Intervention

A targeted tool to regulate low-priced imports beyond conventional trade defence mechanisms

Unlike the key trade defence instruments under the WTO framework, the Minimum Import Price (MIP) is a policy instrument under which the government specifies a minimum threshold price below which imports of certain goods are not allowed into the domestic market. Unlike trade defence measures such as anti-dumping or safeguard duties, the law does not mandate a detailed investigation prior to its implementation.

MIP is typically used in situations where domestic industries face sustained pressure from low-priced or under-invoiced imports. By setting a minimum price condition, it prevents the entry of such imports and helps ensure a level playing field for domestic producers. In the Indian context, MIP is implemented through changes in import policy conditions, where imports remain 'free' only if they meet the prescribed minimum price threshold.

Key Features of MIP

- Acts as a minimum threshold price, below which imports are not permitted
- Functions as a preventive policy tool, unlike investigation-based measures
- Implemented through import policy restrictions, rather than duties
- Typically, temporary in nature and subject to periodic review
- Helps address issues such as low-priced and under-invoiced imports

In effect, MIP operates as a price threshold that restricts imports below a specified level, thereby preventing market distortion and supporting fair competition for domestic industry.

3. Conclusion

In an increasingly uncertain and evolving global trade environment, trade defence mechanisms have become essential tools for safeguarding domestic industries from unfair trade practices and sudden import pressures. As countries recalibrate their trade policies in response to disruptions, overcapacity, and shifting economic priorities, the need for effective and responsive policy instruments has become more pronounced.

Within this framework, instruments such as anti-dumping duties, countervailing duties, and safeguard measures play a critical role in addressing specific forms of trade distortion. Their rules-based application under the World Trade Organization (WTO) ensures that domestic industries are protected in a transparent and justified manner, while maintaining the balance of the multilateral trading system. However, these mechanisms often involve detailed investigations and procedural timelines, which may limit their effectiveness in situations requiring immediate intervention.

In such circumstances, policy tools such as Minimum Import Price (MIP) can provide timely and targeted relief. As a preventive and price-based measure, MIP can be deployed to address persistent low-priced imports in the short term, particularly where domestic industries face urgent pressures and cannot wait for the completion of investigation-based processes.

Going forward, a balanced and well-calibrated approach – combining rules-based trade defence mechanisms with flexible policy interventions – will be essential to ensure fair competition, strengthen industrial resilience, and respond effectively to emerging trade challenges.❑

FIPPI Calls for Graded Basic Customs Duty (BCD) and Minimum Import Price (MIP) for Plywood, MDF and Particle Board to Promote Domestic Value Addition

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/MIP1/2025-26 February 20, 2026

To,
The Chairman
Central Board of Indirect Taxes and Customs (CBIC)
Department of Revenue, Ministry of Finance
New Delhi.

Kind Attention:
Joint Secretary,
Tax Policy Research Unit – I, Department of Revenue, Ministry of Finance.

Subject: Request for Graded Basic Customs Duty (BCD) and Introduction of Minimum Import Price (MIP) for Plywood, MDF and Particle Board to Strengthen the Domestic Plywood, Panel and Furniture Industry.

Respected Sir,

We wish to introduce the Federation of Indian Plywood and Panel Industry (FIPPI), the apex body representing manufacturers and regional associations involved in producing plywood, medium-density fibreboard (MDF), and particle board across India. FIPPI acts as the primary representative of the sector in policy and regulatory discussions, committed to fostering sustainable and competitive growth within the industry.

The recent introduction of Quality Control Orders (QCOs) has ushered in a transformative phase for the Indian plywood and panel sector by integrating many fragmented units into the formal quality assurance framework, ensuring compliance with prescribed standards. Despite this progress, the current Basic Customs Duty (BCD) framework on crucial inputs and finished goods continues to favour foreign producers, creating an uneven cost structure that disadvantages domestic manufacturers both locally and internationally.

Notably, the uniform BCD rates on key raw materials like sawn wood and veneers, which are sometimes equivalent to duties on finished panels, along with only marginally lower duties on other essential inputs such as logs and chemical/resin materials, fail to incentivize domestic value addition. This restricts the industry's growth potential amid increasing demand fuelled by rising incomes, an expanding middle class, and robust growth in infrastructure, housing, and the furniture sector.

More critically, this scenario contradicts flagship government initiatives such as Make in India and Atmanirbhar Bharat, which aim to promote domestic manufacturing and increase self-reliance in vital sectors like wood-based products.

In light of the above, FIPPI respectfully urges the Government of India to rationalize the current BCD regime by lowering duties on essential inputs while raising duties on finished goods (wood panels and wooden furniture) to strengthen domestic manufacturing of plywood and panel products. Additionally, we propose the introduction of a well-designed Minimum Import Price (MIP) mechanism for plywood, MDF, and particle board to prevent underpriced and potentially substandard imports from undermining tariff measures and the QCO/BIS quality framework.

1. Rationale for Reducing BCD on Timber-Based Raw Materials to 0%

1.1 Proposed Change

For timber based raw materials used in plywood and panel manufacture, FIPPI proposes that BCD be reduced to 0%.

HSN Code	Product Description	Current BCD	Proposed BCD
4403	Logs	5%	0%
4407	Sawn Wood	10%	0%
4408	Veneers	10%	0%

1.2 Justification

Approximately 92% of industry timber inputs come from sustainable agroforestry, with 8% met through imports. These imports are driven not by cost advantages — as imported logs are typically pricier — but by restrictive state policies hindering large-scale agroforestry cultivation.

The 2024 ICFRE report estimates India's timber deficit at 40.64 million cubic meters, necessitating imports to meet demand. Moreover, short-rotation species grown domestically (poplar, eucalyptus) do not yield high-quality face veneers vital for finished plywood, making imports indispensable.

Lowering BCD on these raw materials to zero will reduce production costs, mitigate supply chain vulnerabilities, and enhance the competitiveness of Indian plywood and panel manufacturers glob-ally, while supporting compliance with mandated quality standards.

2.0 Rationale for Raising BCD on Wood Panels and Wooden Furniture

2.1 Wood Panels – Plywood, MDF and Particle Board

FIPPI proposes that the BCD on finished wood panels—plywood, MDF and particle board—be raised from 10% to 25%.

HSN Code	Product Description	Current BCD	Proposed BCD
4412	Plywood	10%	25%
4411	Medium-density Fibreboard (MDF)	10%	25%
4410	Particle Board	10%	25%

Since about 80% of the plywood and panel industry comprises unorganized and small-scale manu-facturers transitioning to QCO compliance, they face significant cost disadvantages compared to for-eign manufacturers possessing advanced technology and policy support. The minimal duty differ-ential imposes intense price competition, threatening their viability.

Increasing BCD to 25% will provide vital price protection, especially for MSMEs, enabling them to compete fairly against imports. This step is particularly necessary given ongoing illegal imports without BIS certification, which higher duty coupled with strict enforcement will help deter.

This approach aligns with international practices where strategic duty hikes protect domestic wood industries and foster sustainable local value addition.

2.2 Wooden Furniture

We also request raising the BCD on wooden furniture from 20% to 35% for key HSN codes 940330, 940340, 940350, and 940360 (office, kitchen, bedroom, and other wooden furniture respectively). This will curb substandard imports, support domestic manufacturers—especially MSMEs—and en-courage local value addition, promoting employment.

3.0 Proposal for Introduction of Minimum Import Price (MIP) for Plywood, MDF and Particle Board

3.1 Need for an MIP in Addition to Higher BCD

While the proposed increase in BCD on plywood, MDF and particle board from 10% to 25% will provide an important layer of protection to domestic manufacturers, experience across various sec-tors suggests that tariff measures alone may not be sufficient to deter:

- Under invoicing of imports (declaring unrealistically low CIF values), and
- Dumping of below cost or substandard goods by foreign suppliers seeking to capture market share.

In such circumstances, even a 25% BCD can be rendered ineffective if the base import price is artifi-cially depressed; for example, a panel imported at a declared CIF value far below realistic cost can still enter the market at prices that undercut domestic producers despite the higher nominal duty.

A Minimum Import Price (MIP) framework addresses this vulnerability by establishing a floor price for imports of specific products; imports declared below this floor either:

- Are not permitted for clearance, or
- Are subjected to additional duties or corrective action such that their effective landed cost is brought up to or above a benchmark consistent with fair competition.

Given that:

- Domestic manufacturers are investing in QCO/BIS compliance and face higher costs relative to for-eign producers, and
- Non-compliant, under-priced imports continue to enter the Indian market despite QCOs, an MIP for plywood, MDF and particle board will buttress the requested 25% BCD and make the policy package more robust and aligned with the objectives of Make in India and Atmanirbhar Bha-rat.

3.2 Scope of the MIP

FIPPI proposes that an MIP regime be introduced for the following tariff lines, in conjunction with the proposed BCD increase from 10% to 25%:

HSN Code	Product Description
4412	Plywood
4411	Medium-density Fibreboard (MDF)
4410	Particle Board

For each of the three products, the MIP could be benchmarked broadly as:

MIP_product ≈ Average domestic cost of production (COP_dom) + reasonable margin (M)

Where, **COP_dom:** verified sector wide average ex-factory cost (including raw material, energy, la-bour, overheads and compliance costs).

M: a modest mark up to allow for a sustainable margin and distribution costs, calibrated to avoid excessive protection and to remain consistent with India's WTO obligations.

3.3 Periodic Review and Sunset Clause

MIP levels should be reviewed periodically (for example, annually or biennially) to account for changes in domestic costs, international prices, exchange rates and quality norms. A sunset clause and a formal review mechanism can be specified to ensure that the MIP framework remains a tem-porary, targeted support measure, consistent with evolving market conditions and India's interna-tional commitments.

3.4 Alignment with QCO and BIS Compliance

MIP may be combined with strict verification of BIS certification and other QCO requirements at the border so that only quality compliant, fairly priced imports can enter the Indian market. This en-sures that domestic manufacturers, who have incurred significant costs to meet QCO/BIS standards, are not disadvantaged vis à vis foreign suppliers that might otherwise exploit regulatory gaps.

3.5 Expected Benefits of an MIP + Higher BCD Package

By combining the proposed BCD increase to 25% with an MIP framework for plywood, MDF and particle board, the Government would:

- Prevent under invoicing and dumping of under-priced, low-quality panels.
- Ensure that the protective intent of higher BCD is not neutralized by artificially low declared prices.
- Provide greater predictability and stability for domestic manufacturers, including MSMEs, in plan-ning investments, capacity expansion and quality improvements.
- Facilitate a shift from import dependence on finished panels and furniture to domestic value ad-dition, while still

allowing necessary imports of raw materials given India's timber deficit (as docu-mented in the ICFRE report and highlighted in the source document).

- Help build a resilient, globally competitive and quality driven wood-based manufacturing ecosys-tem in India.
- Reinforce the QCO/BIS quality upgrade path by ensuring that competing imports are both quality compliant and fairly priced.

4.0 Prayer

In light of the foregoing, FIPPI earnestly requests the Government of India to consider the following measures:

- **Reduce the Basic Customs Duty on key timber based raw materials to 0%** on HSN 4403 (logs), 4407 (sawn wood) and 4408 (veneers), in view of India's documented timber deficit, the agroforestry-based supply structure and the critical dependence on imported face veneers for quality plywood and panel production.
- **Increase the Basic Customs Duty on finished wood panels to 25%** on HSN 4412 (plywood), 4411 (MDF) and 4410 (particle board), to provide essential price protection and a rational duty differen-tial that promotes domestic value addition and safeguards MSMEs during the ongoing QCO compli-ance transition.
- **Increase the Basic Customs Duty on wooden furniture to 35%** on HSN 940330, 940340, 940350 and 940360, in order to curb substandard furniture imports, protect the domestic wooden furniture industry (particularly MSMEs) and ensure that quality gains achieved at the panel stage are fully reflected in final consumer products.
- **Introduce a Minimum Import Price (MIP) regime for plywood, MDF and particle board (HSN 4412, 4411, 4410)** as an additional, time bound safeguard measure to:

i. Prevent under invoicing and dumping of panels at artificially low prices;

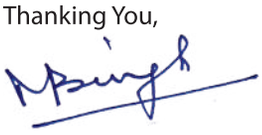
ii. Ensure that the protective intent of the higher BCD is not negated; and

iii. Align import prices with fair value benchmarks based on domestic cost of production plus a rea-sonable margin, while remaining consistent with India's international commitments.

This integrated package will strengthen the domestic wood-based industry, support sustainable and competitive growth, align with Make in India and Atmanirbhar Bharat objectives, and foster em-ployment in MSME-driven manufacturing.

We appreciate your consideration of these proposals and remain available to provide any further data or technical clarifications as needed.

Thanking You,



Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

Copy to:
Shri Amardeep Singh Bhatia
Secretary
Department for Promotion of Industry and Internal Trade (DPIIT)
Ministry of Commerce & Industry
Vanijya Bhawan, New Delhi

P-14031/54/2023-CONSUMER INDUSTRY I/74980/2026

F. No. P-14031/54/2023-CI, E 183200
Government of India
Ministry of Commerce & Industry
Department for Promotion of Industry and Internal Trade
(Consumer Industry Section)

Vanijya Bhawan, New Delhi
Dated: 12th March, 2026

To

The Director General
Federation of Indian Plywood and Panel Industry,
Email: fippi@fippi.org

Subject: Representation regarding request for Graded Basic Customs Duty (BCD) and introduction of Minimum Import Price (MIP) for Plywood, MDF and Particle Board.

Sir,

I am directed to refer to your representation dated 20.02.2026 addressed to CBIC, received in this Department on 23.02.2026, regarding the request of Minimum Import Price (MIP) on Plywood (HSN 4412), Medium Density Fibreboard – MDF (HSN 4411) and Particle Board (HSN 4410).

2. Upon preliminary examination of the representation in this Department, it is observed that the product categories have been indicated broadly at the 4-digit HSN level, whereas proposals relating to Minimum Import Price (MIP) are required to be examined at the specific 8-digit HSN level, based on detailed analysis of import trends, price patterns and after extensive broad Industry consultations.

3. In order to examine the proposal further, you are requested to kindly furnish the following information/documents:

a. Specific 8-digit HSN codes for which MIP is proposed.
b. Import price/landed price data, including landed price after applicable duties.
c. Prevailing import prices from major exporting countries.
d. Detailed cost sheet of domestic manufacturing, duly certified by a Chartered Accountant.
e. Production and consumption data of the domestic industry for the last three financial years, including the current financial year.

4. In view of the above, you are requested to furnish the above information along with supporting documents and justification, for carrying out further examination of the matter in this Department.

Yours Truly,

(Sher Singh Meena)
Under Secretary to the Government of India
011-23038952

FIPPI Seeks Reduction in Basic Customs Duty (BCD) on Key Chemical Inputs – Flags Impact of Geopolitical Disruptions in West Asia on the Indian Wood Panel Industry

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/BCD-1/2025-26 March 13, 2026

To,
Shri Amardeep Singh Bhatia, IAS
Secretary
Department for Promotion of Industry and Internal Trade (DPIIT)
Ministry of Commerce & Industry, Vanijya Bhawan, New Delhi.

Subject: Request for Reduction in Basic Customs Duty (BCD) on Key Chemical Inputs Used in Resin Manufacturing – Representation on the Impact of Geopolitical Developments in West Asia on the Wood Panel Industry.

Respected Sir,

As the unified voice of the Indian plywood and panel sector, the Federation of Indian Plywood and Panel Industry (FIPPI) wishes to draw your esteemed attention to the emerging challenges faced by the industry due to the ongoing geopolitical developments in West Asia. The conflict in the region and the resulting disruptions in key global maritime trade routes, particularly around the Strait of Hormuz, have begun to adversely impact the operating environment for the Indian plywood and panel sector. The industry has already started experiencing severe disruptions, and in the absence of timely policy support, several small manufacturing units may be compelled to temporarily halt production.

The wood panel industry relies extensively on certain petrochemical-derived chemicals used in the production of resins and binders integral to the manufacturing of plywood and other wood panel products. These chemicals form the backbone of adhesive systems used across the industry, ensuring the structural strength, durability and performance of panel products widely used in furniture, housing and interior infrastructure.

Key chemical inputs used in resin production are as follows:

- **Technical-grade urea –** used in the production of Urea–Formaldehyde (UF) resins, widely used in plywood, MDF and particle board manufacturing.
- **Phenol –** used in the production of Phenol–Formaldehyde (PF) resins, commonly used in exterior and structural grade plywood.
- **Melamine –** used in the production of Melamine–Formaldehyde (MF) resins, used in moisture-resistant plywood, laminates and decorative surfaces.
- **Methanol –** used in the production of formaldehyde through catalytic oxidation, which serves as a key precursor for resin systems used across plywood, MDF, particle board and laminates manufacturing.

With limited domestic production capacity for these chemicals, the wood panel industry remains heavily dependent on imports to meet its sourcing requirements. The import data substantiates that India imports substantial quantities of these chemicals annually, and a significant share of imports of methanol and technical-grade urea originates from Gulf countries including Oman, Qatar and Saudi Arabia, making the domestic industry highly vulnerable to geopolitical disruptions in the West Asian region (Table 1).

Table 1: Import Trends of Key Chemicals Used in the Plywood & Panel Sector (in ₹ crore).

Year	Technical-Grade Urea (HSN 31021090)	Melamine (HSN 29336100)	Phenol (HSN 29071110)	Methanol (HSN 29051100)	Paraffin Wax (HSN 27122000)
2017-18	Not Available (HSN Code was different)	508	2,004	4,000	107
2018-19		683	2,122	5,195	133
2019-20		438	952	4,256	94
2020-21		298	873	4,348	75
2021-22		1,092	2,074	7,432	223
2022-23		910	2,379	7,524	253
2023-24	7,744	763	1,941	7,425	238
2024-25	6,990	912	2,227	7,754	165

Recent geopolitical developments in West Asia have begun to significantly impact global petrochemical supply chains, resulting in multiple cost pressures for downstream industries, such as:

- **Sharp escalation in international prices of key industrial chemicals** such as methanol, phenol, melamine, technical-grade urea and paraffin wax (Table 2).

Table 2: Trends in International Prices of Key Chemical Inputs Due to the War in West Asia.

HSN Code	Product Description	Currency/Unit	Price Before Conflict	Current Price (After Conflict)	% Increase in Price
31021090	Technical-Grade Urea	₹/MT	45,000	73,000	62%
29336100	Melamine	₹/MT	76,000	1,10,000	45%
29071110	Phenol	₹/MT	76,000	1,20,000	58%
29051100	Methanol	₹/MT	30,000	42,000	40%
27122000	Paraffin Wax	₹/MT	92,000	1,12,000	22%

- **Higher freight and insurance** costs along critical shipping routes have substantially increased the landed cost of these chemicals for domestic manufacturers.
- **Exchange rate pressures** have further aggravated the situation, with the depreciation of the Indian Rupee — recently surpassing ₹92 against the US Dollar — leading to an additional increase in the import cost of these inputs.

In view of the above, FIPPI respectfully requests the Government of India to lower the Basic Customs Duty (BCD) on certain critical chemicals used in resin manufacturing in the plywood and panel industry through the following targeted policy interventions (Table 3):

Table 3: Proposed Reduction in Basic Customs Duty (BCD) on Chemical Inputs Used in Resin Manufacturing.

HSN Code	Product Description	Current BCD	Proposed BCD
31021090	Technical-Grade Urea	10%	0%
29336100	Melamine	7.5%	0%
29071110	Phenol	7.5%	0%
29051100	Methanol	2.5%	0%
27122000	Paraffin Wax	5%	0%

We trust that these policy interventions will receive due consideration, thereby providing much-needed support to the Indian plywood and panel industry while also safeguarding the livelihoods of farmers, carpenters and workers associated with the sector.

Thanking You,

Dr. M.P. Singh, Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

FIPPI Seeks Government Intervention Against Arbitrary & Retrospective Shipping Surcharges on Export Shipments Amid Geopolitical Developments in West Asia

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/Export1/2025-26 March 17, 2026

To,
Shri Vijay Kumar, IAS
Secretary
Ministry of Ports, Shipping and Waterways
Parivahan Bhavan, New Delhi.

Subject: Representation Regarding Arbitrary and Retrospective Surcharges Imposed by Shipping Lines on Export Shipments Amid Ongoing Geopolitical Developments in West Asia – Request for Government Intervention to Safeguard Exporters of Laminates and Panel Products.

Respected Sir,

On behalf of the members of the Federation of Indian Plywood and Panel Industry (FIPPI), we respectfully submit this representation seeking the kind intervention of the Government regarding the arbitrary and retrospective surcharges being imposed by shipping lines on exporters of laminated sheets and allied panel products.

The plywood and panel manufacturing industry in India represents one of the largest global manufacturing hubs. The industry contributes significantly to exports, employment generation, and value addition in the chemical-based manufacturing sector. The Middle East region, particularly the GCC countries, is a key export market for Indian laminates, with the regional decorative laminate market estimated to exceed USD 3 billion annually.

A large proportion of the units represented by FIPPI fall under the MSME category and operate with limited financial capacity and thin operating margins. The industry is already facing significant pressure due to rising raw material costs, increasing energy prices, and escalating logistics expenses.

In addition to these challenges, exporters are now facing an unexpected and severe burden due to multiple surcharges imposed by shipping lines and associated logistics agencies. These charges have been imposed unilaterally and retrospectively, in several cases after the cargo had already been booked, loaded, and even after the vessels had departed from Indian ports.

Surcharges Imposed

The following charges have been imposed by shipping lines and related agencies after shipments were already booked and/or dispatched:

- War Risk Surcharge
- Congestion Surcharge
- Export Detention and Demurrage Charges (including Back to Town charges)
- Back to Town (BTT) Charges
- Revised Basic Ocean Freight Charges

- Storage / Ground Rent Charges
- Customs and Port Related Charges
- CHA Charges / Handling Charges / Local Transportation Charges
- Inland Haulage Charges
- Additional Lift-On / Lift-Off Charges

These charges were not communicated or agreed upon at the time of booking and have been imposed without prior consultation with exporters.

It is important to note that the shipments in question were booked and dispatched well before the escalation of the geopolitical conflict situation involving Iran and the USA/Israel. However, subsequent to the shipment of cargo, additional charges such as War Risk Surcharge and other levies were imposed retrospectively by shipping lines.

The retrospective imposition of such charges after vessel departure is arbitrary, commercially unjustified, and contrary to established international trade practices. Exporters finalize contracts with overseas buyers based on the freight terms prevailing at the time of booking. Once shipments have been dispatched, exporters have no control over additional freight demands imposed later.

As a result, exporters are facing significant financial losses, which is severely impacting their working capital and export competitiveness. Given the already stressed financial condition of the industry, such practices are placing additional strain on the sector. Some manufacturing units have already ceased operations, while others are under severe financial stress.

Request for Intervention

In view of the above, we humbly request the Ministry to kindly intervene in the matter and take up the issue with concerned shipping lines and relevant authorities to provide appropriate relief to exporters.

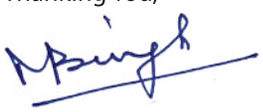
We further request that the Ministry may consider advising shipping lines to withdraw or waive the above-mentioned surcharges, considering that:

- The shipments were booked and dispatched prior to the escalation of the conflict situation.
- The additional surcharges were not part of the original freight agreement or booking confirmation.
- The charges have been imposed retrospectively after vessel departure, which is commercially unreasonable and beyond the exporter's control.
- Exporters are already facing significant financial stress due to rising input and logistics costs.

Your timely intervention in this matter will provide much-needed relief to the plywood, laminate, and panel manufacturing industry and help safeguard the interests of exporters, particularly those in the MSME sector.

We shall be grateful for your support and assistance in addressing this issue at the appropriate level.

Thanking You,



Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

Copy to:
Shri Mohammad Isharar Ali
Director
Department for Promotion of Industry & Internal Trade (DPIIT)

Revisiting the Licensing Framework for Wood – Based Industries in India: State-Level Implications for Timber Supply, Agroforestry, and Rural Industrialization

R. K. Sapra, I.F.S (Retd),
(Former MD of Haryana State Forest Development Corporation)

1. Introduction

WBIs—including sawmills, veneer units, plywood manufacturing, medium-density fibreboard (MDF), and particle board—constitute an important component of India's forest-based economy. These industries provide significant employment opportunities in rural and semi-urban areas and create strong linkages with farm forestry and agroforestry systems (ICAR, 2018; FAO, 2023). At the same time, the sector operates within a regulatory environment shaped by forest conservation policies and judicial interventions. A major turning point in the governance of WBIs occurred with the Hon'ble Supreme Court's order dated October 30, 2002 in the Godavarman case, which established a licensing regime linked to the availability of timber resources within individual states. The regulatory framework that emerged from this order was intended to ensure that industrial demand for timber does not lead to unsustainable extraction from the natural forests. However, the system has also created procedural complexities in estimating timber availability, particularly from TOF, which now constitute the principal source of industrial wood in India (ICFRE, 2020). Over the past two decades, the structure of India's timber economy has changed dramatically. Agroforestry and farm forestry systems have expanded significantly, supplying most of industrial timber requirements (Pandey, 2000; ICFRE, 2025). This transformation raises important questions regarding the continued relevance of regulatory mechanisms designed during an earlier period when natural forests were the primary source of timber.

2. The 2002 Supreme Court Order and the Licensing Regime

The Hon'ble Supreme Court's judicial oversight in forest governance began in the mid-1990s through a series of directions issued in the Godavarman case. These directions sought to strengthen forest conservation and regulate activities affecting forest resources. In its 2002 order concerning WBIs, the Hon'ble Court directed that the establishment and expansion of such industries must be linked to the sustainable availability of timber resources. The Hon'ble Court required that the state governments estimate their timber availability before issuing licenses and submit their assessments for review by the Central Empowered Committee (CEC) of the Hon'ble Supreme Court. The underlying objective of the order was to prevent excessive industrial demand from leading to unsustainable extraction of timber from natural forests. Similar regulatory measures have been adopted in several countries to ensure that forest-based industries operate within sustainable resource limits (FAO, 2020). However, the implementation of the licensing regime required states to produce detailed assessments of timber availability, which proved challenging in practice.

3. Challenges in Estimating Timber Availability at the State Level

A central requirement of the licensing framework is the estimation of timber availability within each state. While timber production from recorded forest areas can be estimated using forest working plans and inventories, estimating timber production from TOF is far more complex. TOFs are typically dispersed across agricultural landscapes and other revenue lands and are owned by millions of institutions, organizations, farmers and others. Harvesting decisions depend on market conditions, crop cycles, and individual farmer/institutional preferences rather than fixed forest management schedules (Pandey, 2000). Various institutions—including the Forest Survey of India (FSI), the Indian Council of Forestry Research and Education (ICFRE), and the National Council of Applied Economic Research (NCAER)—have developed methodologies to estimate timber production from these sources. However, these methodologies differ in terms of sampling intensity, survey techniques, and statistical modelling approaches (FSI, 2023; ICFRE, 2020, Sapra, 2024). Consequently, timber availability estimates prepared by different institutions often vary considerably, leading to disputes regarding their reliability. These disagreements have sometimes delayed approval for establishment of new WBIs.

4. State-Level Experiences and Licensing Delays

The challenges associated with estimating timber availability are reflected in the experiences of several states

where licensing decisions were delayed due to disputes over reliability of data. For instance, in Uttar Pradesh, state-level estimates prepared by FSI were challenged by NGOs which led to prolonged litigation before the National Green Tribunal (NGT) and Hon'ble Apex Court. The dispute delayed the resolution of licensing issues for WBIs for several years, creating uncertainty for investors and slowing industrial growth. In Maharashtra, the Regional Office of the Ministry of Environment, Forest and Climate Change (MoEFCC) rejected the timber production from TOF estimated by the Institute of Wood Sciences and Technology (IWST), Bangalore, resulting in subsequent losses in resources, employment, and finances for the states involved. Similarly, in Karnataka, disagreements regarding the methodology used for estimating timber availability led to delays in licensing decisions, highlighting the lack of consensus regarding appropriate approaches for assessing timber supply from TOF. The rejection of these estimates resulted in delays in granting licenses for new industries, leading to lost opportunities for employment generation and investments.

5. Transformation in India's Timber Supply Structure

Over the past two decades, India's timber supply system has undergone a major transformation. Historically, natural forests constituted the principal source of industrial wood. However, forest conservation policies and strict regulations on harvesting have encouraged the expansion of agroforestry systems. Today, most of the industrial wood in India originates from TOF (ICFRE, 2025). Fast-growing species such as poplar, eucalyptus and casuarina are widely cultivated by farmers, particularly in states such as Punjab, Haryana, Andhra Pradesh, and Gujarat. This shift reflects broader trends in global forestry, where agroforestry systems are increasingly recognized as an important source of timber and ecosystem services (FAO, 2023; Arunachalam et al., 2022). Despite this transformation, the regulatory framework governing WBIs continues to rely on procedures designed during a period when forests were the primary source of timber.

6. Implementation of MoEFCC Guidelines for WBIs (Establishment & Regulation), 2017

The National Agroforestry Policy was adopted in 2014 to promote the integration of tree cultivation into agricultural ecosystems. In line with this policy, MoEFCC amended the Wood-Based Industries (Establishment and Regulation) Guidelines, 2016 in 2017, introducing a special provision for industries utilizing timber derived from species declared as agroforestry/agricultural crops and/or species exempted from the felling and transit regulations in the concerned State/UT, as provided under paragraph 8 of the amended guidelines. However, despite the issuance of these guidelines in 2017, most State Governments have not simplified the procedures for the establishment of WBIs, apart from Andhra Pradesh and Gujarat. As a result, most new investments in WBIs are currently concentrated in these two states. In this context, there is a pressing need to broaden the geographical spread of WBIs across more states to fully harness the potential of farm-grown timber and enable industries to make informed investment decisions in other states.

7. Economic Implications for Agroforestry and Rural Development

The continued complexity in licensing procedures has broader economic implications for rural development. India's rural economy is characterized by a structural imbalance. About 55% of the population depends on agriculture for livelihood, yet agriculture contributes a relatively small share of national income (Economic Survey, 2021). Expanding rural manufacturing industries is therefore essential for absorbing surplus labour and diversifying rural livelihoods. WBIs are particularly suitable for rural industrialisation because they

generate employment for semi-skilled labour and create strong demand for farm-grown timber. By providing a stable market for timber, these industries encourage farmers to adopt agroforestry systems that diversify farm income and enhance resilience to market fluctuations (World Bank, 2006; ICAR, 2018). However, when licensing procedures delay the establishment of new industries, the demand for farm-grown timber weakens. This can discourage farmers from planting trees and limit the expansion of agroforestry systems. In this way, regulatory constraints on establishment of new WBIs may inadvertently slow the development of an integrated agroforestry industry value chain.

8. Policy Implications and the Need for Reforms

Given the significant changes in India's timber economy, the regulatory framework governing WBIs requires careful reconsideration. The current system relies heavily on state-level estimates of timber availability, despite the inherent difficulties associated with measuring timber production from TOF. As the experiences of several states demonstrate, disagreements over such estimates can delay industrial development for years.

A revised regulatory approach could therefore focus on:

- recognizing TOF as the principal sources of industrial wood
- improving methodologies for estimating timber production from TOF
- simplifying licensing procedures for industries using timber from TOF
- encouraging the development of agroforestry-based industrial clusters

Such reforms would help align forest conservation objectives with the economic realities of India's evolving timber economy (FAO, 2023; ICFRE, 2020).

9. Suggested Issues for Judicial Consideration

In view of these developments, the following may merit consideration in any review of the regulatory framework governing WBIs:

1. Review of the 2002 order linking industrial licensing strictly to state-level estimates of timber availability.
2. Recognition of TOF as the dominant sources of industrial wood supply in India.
3. Resolving difference in national wood production from TOF of 91.5 million m3 estimated in ISFR-2023 (FSI, 2023) and 125 million m3 estimated in ICFRE's report "Production and Consumption of Timber in India" (ICFRE, 2025).
4. Acceptance of updated reliable state-level assessments of timber production from TOF in biennial ISFR for immediate use for licensing of WBIs
5. Simplification of licensing procedures as registration for WBIs using 100% raw material sourced from TOF or imported wood.
6. Licensing of WBIs using timber from forests should continue as under present rules.
7. Promotion of TOF-linked industrial clusters to strengthen rural employment and sustainable timber supply chains.

10. Conclusion

The regulatory framework governing WBIs in India was shaped by legitimate concerns regarding depletion of forestry resources in the late twentieth century. However, the structure of the country's timber economy has evolved significantly since then. With agroforestry and farm forestry now supplying most of the industrial wood, policies governing the sector must adapt to reflect these realities. Simplifying licensing procedures while maintaining safeguards for natural forests can facilitate the growth of agroforestry-based industries and strengthen rural economies. By promoting the WBIs, India can reduce excessive dependence on agriculture, generate rural employment, and support a more diversified and sustainable rural economy.

References

1. Arunachalam, A., et al. (2022). Agroforestry in India: Opportunities and challenges. Agroforestry Systems.
2. Food and Agriculture Organization. (2020). Global Forest Resources Assessment.
3. Food and Agriculture Organization. (2023). Agroforestry for Wood Production.
4. Forest Survey of India. (2023). India State of Forest Report-2023.
5. Indian Council of Agricultural Research. (2018). Agroforestry for Sustainable Agriculture.
6. Indian Council of Forestry Research and Education. (2020). Trees Outside Forests in India.
7. Indian Council of Forestry Research and Education. (2025). Production and consumption of Timber in India
8. Ministry of Environment, Forest and Climate Change. (2017). Guidelines for Wood-Based Industries.
9. Economic Survey. (2021). Economic Survey-2021, Ministry of Finance, Government of India
10. National Council of Applied Economic Research. (2018). Timber Market Studies in India.
11. Pandey, D. (2000). Trees Outside Forests in India.
12. Sapra, R. K. (2024). Licensing for Wood-based Industries: A Complex Procedure
13. World Bank. (2006). India: Unlocking Opportunities for Forest-Dependent People.❑

FIPPI Requests the PCCF & HoFF (All States) for Implementation of MoEF & CC Guidelines for Wood-Based Industries (Establishment and Regulation), 2017

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

13 March 2026

To,
The Principal Chief Conservator of Forests & Head of Forest Force (HoFF)
All States.

Subject: Implementation of MoEF&CC Guidelines for Wood-Based Industries (Establishment and Regulation), 2017.

Respected Sir,

The Federation of Indian Plywood and Panel Industry (FIPPI) is pleased to share that the plywood and wood-based panel (MDF and particle board) industry is witnessing strong and sustained growth across the country. The plywood production across different parts of the country has increased by nearly 15%, rising from 10 million cubic meters to 11.5 million cubic meters. Several companies have already undertaken new investments beyond ₹3,000 crores, while many others are in the process of expanding their production capacities. The industry is poised to fully utilize its production capacity of 12 million cubic meters in plywood, together with 4 million cubic meters in Medium Density Fibreboard (MDF) and 4 million cubic meters in particle board. The consumption of plywood and panel products is expected to double by 2030. The plywood and panel industry in India is largely dependent on agroforestry for its raw material supply, sourcing around 92% of its timber from agroforestry.

Following the setback caused by the Hon'ble Supreme Court's order dated 12 December 1996, plywood clusters gradually emerged in states such as Haryana, Punjab, and Kerala, where industries increasingly relied on farm-grown timber rather than forest sources. The factors which have contributed towards successes in these states in adopting agroforestry are willingness of farmers to experiment with tree crops, facilitative role played by Forest Department and the industries, enabling policies regarding felling & transit of timber from farm-grown trees and fertile soil coupled with potential of irrigation and ground water availability. Taking examples from these states, it is realized that there must be symbiotic relationship between plantation owners and wood-based industries to ensure a stable and sustainable raw material supply chain. At present, around

28.4 million hectares in India are under agroforestry, with the potential to expand to more than 53 million hectares, indicating substantial scope for growth and investment in this sector. However, despite this potential, the sector continues to face challenges arising from the existing regulatory framework governing the establishment of wood-based industries (WBIs) at the state level.

The National Agroforestry Policy was adopted in 2014 to give effect to the potential of integrating tree cultivation in agriculture ecosystem. Accordingly, the Ministry of Environment, Forest and Climate Change (MoEF&CC) modified the existent Wood-Based Industries (Establishment and Regulation) Guidelines, 2016, in 2017 making a special provision for

industry utilising timber from species declared as agroforestry/agricultural crops and/or exempted from the purview of the felling and transit regime in the concerned state/UT in paragraph 8 of the amended guidelines:

Following industries/processing plants not using round logs of domestic origin or operating without a band saw or re-saw or circular saw of more than thirty-centimetre diameter shall not require license. Industries/processing plants which use:

Round log/timber from species declared as agroforestry/agricultural crops and/or exempted from the purview of the felling and transit regime in the concerned state/UT and procured from legitimate sources.

However, SLC of the concerned State may allow installation of circular saw of diameter upto 60 centimeter in such industries having specialized requirement.

Such industries shall be registered with the Forest Department of the concerned state/UT and shall be regulated, details of which are to be prescribed by the concerned state/UT.

However, despite the issuance of these guidelines by MoEF&CC in 2017, most State Governments have not simplified the procedure for establishment of wood-based industries except for Andhra Pradesh and Gujarat. As a result, most of the new investments are presently being concentrated in these two states. In this context, there is a pressing need to broad-base the establishment of wood-based industries across more states, to fully harness the potential of agroforestry-grown timber and enable industries to take informed decisions regarding investments in other states.

It is also pertinent to highlight that the establishment of WBIs is still being linked to wood availability studies and issuance of license. Whereas wood availability—particularly in the context of agroforestry—is a dynamic concept. In several instances, wood availability studies have not been accepted by state level committee resulting in the denial of establishment of new plywood and panel industry.

Therefore, FIPPI respectfully requests your good office to kindly implement the MoEF&CC guidelines on wood-based industries by incorporating the same into the State-level regulations, to facilitate the establishment of new plywood and panel industries.

In addition, FIPPI seeks your kind support in enabling industry investments by providing information on the following:

1. Existing schemes, incentives, or industrial policies related to the establishment of wood-based industries in your state.

2. Guidelines, permissions, and regulatory requirements, including any specific rules pertaining to raw material procurement, plantations, transit, or licensing of wood-based units.

3. Details of potential zones, districts, or regions where wood-based industries may be encouraged to invest and establish units.

We look forward to your support and cooperation in strengthening India's wood-based industry ecosystem in facilitating the sustainable expansion of agroforestry-driven industries across the country thereby creating a sustainable, decentralized raw material supply chain.

With regards,

Dr. M. P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

FIPPI Requests the PCCF & HoFF (All States) to Implement Government of India Guidelines dated 2nd January 2026 to Boost Timber Supply through Private Forest Participation

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

12 March 2026

To,
The Principal Chief Conservator of Forests & Head of Forest Force (HOFF)
All States.

Subject: Private Forest Participation in the State – reg implementation.

Reference: Government of India Guidelines dated 2nd January 2026 - Amending the Guidelines dated 29.11.2023 to incorporate terms and conditions for the assignment of forest land on lease in para 7.2 of the Consolidated Guidelines.

Apropos to the Government of India Guidelines dated 2nd January 2026, the Central Government with a view to align with the evolving framework for restoration of forest land and utilization of silviculturaly available sustainable harvest from the forests and in accordance with the provision of section 2(1)(iii) and section 3C of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980, has amended the sub para 14 of para 7.2 of the guidelines notified on 29.11.2023 and incorporated at para 7.2 of the Consolidated Guidelines, by inserting the following provision:

Provided that where the State Government agrees to undertake assisted natural regeneration including afforestation/ plantation, for purposes mutually agreed between the States/UTs and Government or non- Government entities, such activities undertaken in accordance with the provisions of an approved Working Plan/Management Plan, applicable in such cases and under the supervision of the State Forest Department shall be deemed to constitute forestry activities. Consequently, the requirements of Compensatory Afforestation and payment of Net Present Value shall not be applicable to such activities. The State Government shall, however, be at liberty to devise an appropriate framework for the utilization of such plantations and for revenue sharing thereof, on a case-to-case basis.

Provided further that afforestation/plantations should be allowed by the State/UTs in accordance with a Detailed Project Report (DPR) to be prepared in consonance with provisions of the Working Plan and approved by the competent authority specifying the detail viz. extent of area, species proposed for plantations, activities proposed, silviculturaly available sustainable harvest for utilization, etc.

Forest land earmarked for plantation or rehabilitation under the approved working plan shall be eligible for above activities and the State Government may formulate the following provisions for the implementation of the said guidelines of the Government of India:

Option 1

1. For the implementation of revenue-sharing models with private partnerships for such activities, State Forest Development Corporation, being the commercial entity, shall be the executing agency for such forest land.

2. State Forest Development Corporation shall continue with the same payment modalities to the State Government as prevalent in the State for the leased area in the past.
3. The Detailed Project Report (DPR) shall be prepared by the Corporation in consultation with the participating private entity. The provision may be made for holistic utilization of the land for sustainable production of timber and fodder which may improve the rural livelihoods, ecological restoration and industrial wood demand. The DPR shall include the management expenditure for the development/maintenance of the plantation activities for the entire period of the project.
4. The funding mechanism for the project shall be in the ratio of 51:49 for the Corporation and the private entity respectively. The Corporation may explore funding opportunities from NABARD and other institutions.
5. The sharing of the produce shall be in proportion to the investment for the DPR. The Corporation shall be free to market their share of the produce. However, an indicative Minimum Price may be included in the DPR at which the participating private entity shall be bound to purchase the entire produce.

Option 2

1. Identification of degraded forest land (non-dense / open forest category) by the Forest department as per provision of working plan and the identification of the industry/entity for participation directly with the forest department.
2. Preparation of Detailed Project Report (DPR) in consultation with the Forest Department encompassing plantation of suitable species such as: Melia dubia, Acacia mangium, Eucalyptus (as permitted under the approved Working Plan), native species wherever prescribed, Assisted Natural Regeneration (ANR), soil and moisture conservation measures, fire protection and protection measures, sustainable harvesting plan as per the Working Plan cycle, sharing mechanism of the produce, etc.
3. Implementation of the DPR by the participating agency.

FIPPI would appreciate the initiative by the State Government in this matter and would extend whole- hearted support to the State Government in the implementation of the Government of India guidelines and create opportunities for augmented supply of timber with the participation of the plywood and panel industry.

With Best Regards,

Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

FIPPI Urges Enactment of the National Agroforestry Act – To Remove Regulatory Barriers to Farm-Grown Timber, Promote Agroforestry at Scale and Strengthen the Wood-Based Industry

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/Agroforestry Act1/2025-26 January 5, 2026

To,
Shri Shivraj Singh Chouhan
Hon'ble Minister of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India.

Subject: Request for Enactment of the National Agroforestry Act – To Promote Agroforestry, Boost Farmers' Incomes, Strengthen the Wood-Based Industry, and Support Climate Goals.

Reference: Hon'ble Minister of Agriculture & Farmers Welfare's address on tree-based agriculture at the Cauvery Calling campaign seminar in Hosur, Tamil Nadu on 27th December 2025.

Respected Sir,

At the outset, we respectfully take this opportunity to introduce the Federation of Indian Plywood and Panel Industry (FIPPI). Established in 1961, FIPPI is the apex national body representing manufacturers and regional associations engaged in the production of plywood, medium-density fibreboard (MDF), and particle board across India. The Federation serves as the principal representative voice of the industry in matters relating to policy formulation, regulatory consultations, and issues of national importance.

On behalf of the entire Indian plywood and panel industry, FIPPI extends its sincere appreciation for your recent address at the seminar on sustainable agricultural practices through tree-based cultivation, organized under the Cauvery Calling campaign of the Isha Foundation at Adhiyaman College of Engineering, Hosur, Tamil Nadu, on 27th December 2025. The emphasis on the role of tree-based agriculture in enhancing farmer incomes, restoring soil and groundwater, and supporting river rejuvenation reflects a progressive and timely policy vision of the Government of India aimed at advancing the nation's agrarian future. We are particularly encouraged by your clear acknowledgment of the need to distinguish between trees grown on private agricultural land and those originating from forest areas, as well as by your focus on removing institutional and regulatory barriers that inhibit farmers from adopting tree-based agriculture at scale.

FIPPI wishes to highlight that these observations truly reflect the ground realities faced by farmers willing to grow trees on their private agricultural lands. Under the Indian Forest Act, 1927 – specifically Chapter I, Section 2, Clauses 4(a) and 6 – any tree grown on private farmland is classified as "timber" once felled and considered "forest produce." Even legally cultivated timber is subject to complex and inconsistent regulations across state borders, while ownership and transit rules vary between states. This regulatory fragmentation discourages farmers from engaging in tree cultivation at scale, thereby hindering the objectives of the National Agroforestry Policy, 2014.

These regulatory constraints also have significant consequences for industries relying on agroforestry- based timber to meet their raw material requirements. The Indian plywood and panel industry depends heavily on such timber; however, due to

restrictive and non-uniform regulations on the felling, transit, and sale of trees grown on private farmland, domestic availability of agroforestry-sourced timber is limited. Consequently, the Indian plywood and panel industry is often compelled to rely on timber imports that could otherwise be sourced locally. Addressing these regulatory barriers would not only strengthen domestic raw material supply but also increase farmers' incomes and promote environmental sustainability.

In view of the above, FIPPI respectfully urges the Government of India to enact a National Agroforestry Act at the earliest (the draft Agroforestry (Promotion and Facilitation) Act, 2026, is annexed as Annexure 1). Such an Act is essential to recognize farm-grown timber as distinct from forest produce, safeguard farmers' rights, remove legal and procedural hurdles, and enable large-scale nationwide adoption of agroforestry practices, thereby operationalizing the National Agroforestry Policy, 2014.

The proposed Act will empower farmers to:

- **Use robust IT systems for farmer registration:** Farmers and industries will register plantations through a geo-tagged digital platform, ensuring accuracy, transparency, and strengthening the Digital India initiative.
- **Enable verification and direct transfer of incentives:** Following geo-verified inspection, subsidies and incentives will be directly transferred to farmers, ensuring timely and corruption-free support, in line with the vision of "Less Government, More Governance."
- **Improve traceability:** Digital records of plantations will establish an end-to-end traceability system for timber movement, strengthening compliance and simplifying industrial processes.
- **Support participation in carbon credit markets:** Verified plantation data will enable farmers and industries to engage in carbon credit trading, unlocking new income streams, promoting environmental sustainability, and contributing to India's Net Zero Carbon goals.

This dedicated Agroforestry Act will provide a clear framework for robust IT-based traceability, hassle-free felling, transport, and marketing of farm-grown timber. It would serve as a bold and transformative step to free the farmers from regulatory regime of Forest Department in the States and empower farmers towards barrier free inter-state and intra-state trade and commerce of farm wood.

We trust that this representation will be given due consideration to advance agroforestry, boost farmers' incomes, bring resilience to rural economies, strengthen the Indian wood-based industry, and support the nation's climate mitigation efforts.

Thanking You,

Rajesh Mittal
President
Federation of Indian Plywood and Panel Industry (FIPPI)

Annexure I

Draft Agroforestry (Promotion and Facilitation) Act, 2026

An Act to implement the objectives and provisions of National Agroforestry Policy; to encourage and expand tree plantation in a complementary and integrated manner with crops and livestock; to improve productivity and livelihood of farmers while also meeting raw material requirements of wood-based industries and to reduce reliance on imports from foreign countries;

WHEREAS the policy document identifies various factors such as restrictive legal provisions for harvesting and transportation of trees planted on farm lands, inadequate attempts at liberalization of restrictive regulations, near non-existent extension mechanisms, lack of institutional support mechanisms, lack of quality planting materials, inadequate research on agroforestry models and species suitable across various ecological regions, inadequate marketing infrastructure and price discovery mechanisms, lack of post-harvesting processing technologies and industry operating at a sub-optimal level etc. for agroforestry not gaining the desired importance as a development tool;

AND WHEREAS the agricultural lands in India provide an opportunity to supply wood along with food, while simultaneously meeting the objective of creating carbon sinks, which is also in line with India's commitment to the Paris Climate Agreement;

AND WHEREAS forests in India, although seemingly adequate in area, are primarily committed to demands such as fuel, fodder and timber for indigenous people, and are required to be maintained and improved for various ecosystem services and conservation of biological diversity, hence limiting the production of wood;

AND WHEREAS growing of trees on private lands outside forests has played an important role in catering to domestic timber demand in India and stabilizing the forest and tree cover of the country, by not only adding

to area under tree cover but also providing a substitute to the timber harvested from forests and hence, conserving the forests for ecological functions;

AND, it is necessary to transcend the boundaries of the forests in order to meet India's wood requirements from within the country (Atmanirbharta), to reduce pressure on the forests, and consequently, to increase carbon sequestration by various landscapes to fight global warming;

AND, it is necessary to have a framework for electronic Certificate of Origin and Ownership and establish a standard for the legality and chain of custody of farm wood that is accepted worldwide (Vocal for Local) to promote efficient, transparent, and barrier-free inter-state and intra-state trade and commerce of farm wood;

AND, it is necessary to promote and facilitate certification of nurseries, seeds and other planting materials through institutional mechanism for registration of nurseries and their accreditation to farmers;

AND, it is necessary to establish institutional mechanism investing in research, extension and capacity building and related services;

AND, it is necessary to establish a national guidance framework on agreements for farm wood to facilitate establishment and promotion of farm wood-based enterprises and matters related to providing institutional credit and insurance cover to agroforestry or incidental thereto.

NOW, THEREFORE, it is expedient to enact a legal framework for hassle- free transportation, marketing and utilization of wood grown on non-forest lands in order to promote the growing of trees outside forests and double the income of farmers.

BE it enacted by Parliament in the Year of the Republic of India as follows:—

CHAPTER 1
PRELIMINARY

1. Short title, extent and commencement.— (1) This Act may be called Agroforestry (Promotion and Facilitation) Act, 2025.

(2) It extends to the whole of India.

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

2. Definitions.— In this Act, unless the context otherwise requires, -

(i) "AgriWood-India" means the standard developed for timber legality assessment and verification of legality and legal origin of farm wood and farm wood products in India.

(ii) "Trees outside forests" mean trees located on all lands excluded from the definition of forests as per prevalent laws and their interpretation, subject to the limitation of their applicability to private property. They include:

(a) Trees on farmlands and built-up areas, both in rural and urban areas;

(b) Planted or domesticated trees on private lands;

(c) Trees growing in meadows, pastoral areas and on farms, or in towns, gardens and parks; and

(d) Trees growing on lands using alley cropping and shifting cultivation, permanent tree cover crops (e.g. coffee, cocoa), windbreaks, hedgerows, home gardens and fruit-tree plantations.

(iii) "Farm wood" includes timber, small timber, fuelwood and all other parts of trees outside forests when they have fallen or have been felled, and all wood, whether cut up or fashioned or hollowed out for any purpose or not; and this farm wood and its products:

(a) Shall not be understood as 'Forest Produce' or 'Specified Forest Produce' within the meaning of the provisions of the Indian Forest Act, 1927 or any other State or Central Acts;

(b) Shall not be understood as "Scheduled Farmers' Produce" under any State APMC Act or Regulation;

(c) Shall not be understood as 'Biological Resources' within the meaning of the provisions of the Biological Diversity Act, 2002.

(iv) "Imported wood" means all wood and wood products imported from other countries.

(v) "Tree growers" mean individuals or organizations engaged in the production of farm wood by themselves or by hired labour or otherwise, and includes farmers, Farmer Producer Organisations, Forest Protection Committees, wood-based industries, companies, partnership firms, limited liability partnerships, co-operative societies, societies, and any associations or body of persons duly incorporated or recognized as a group under any ongoing programmes, schemes or resolutions of the Central Government or the State Government.

(vi) "Trader or agent" means a person who buys farm wood or imported wood by way of inter-state or intra-state trade or a combination thereof, either for self or on behalf of one or more persons for the purpose of wholesale trade, retail, end-use, value addition, processing, manufacturing, export, consumption or for such other purpose.

(vii) "Inter-state trade" means the act of buying or selling of farm wood, wherein a trader or agent of one state buys farm wood from tree growers or a trader of another state and such farm wood is transported to a State other than the State in which the trader purchased such farm wood or where such farm wood originated.

(viii) "Intra-state trade" means the act of buying or selling of farm wood, wherein a trader of one State buys the farm wood from a tree grower or a trader of the same State in which the trader purchased such farm wood or where such farm wood originated.

(ix) "Electronic trading and transaction platform" means a platform set up to facilitate direct and online buying and selling for conduct of trade and commerce of farm wood through a network of electronic devices and internet applications, where each such transaction results in physical delivery of farm wood.

(x) "State" means State or Union territory (UT).

(xi) "State Agriculture Produce Market Committee Act" or "State APMC Act" means any State legislation in force in India, by whatever name called, which regulates markets for agricultural produce in that State.

(xii) "Farming agreement" means a written agreement between the tree grower and sponsor, such as:

(a) 'Trade and commerce agreement', where the ownership of farm wood remains with the tree grower during production and he gets the price of produce on its delivery as per the agreed terms with the sponsor;

(b) 'Production agreement', where the sponsor agrees to provide farm services, either fully or partially, and to bear the risk of output; and

(c) Any other such agreements or a combination of the agreements specified above.

(xiii) "Sponsor" means a person, trader or agent who has entered into a farming agreement with the tree grower for growing trees.

(xiv) "Local bodies" means Panchayats and Municipalities, by whatever name called, within the meaning of Article 243B (1) and Article 243Q (1) of the Constitution of India, and, in the absence of any Panchayat or Municipality, institutions of self-government constituted under any other provision of the Constitution of India or any Central or State act, and in their absence, any officer or group of officers authorised by the state government.

(xv) "Wood-based industries" include housing, construction, packaging, furniture, handicrafts, sports, railways, ship building, mining, bioenergy, pulp and paper, plywood and panel industries, and such other industries.

CHAPTER 2
GENERAL

3. Power to make rules for standards with regard to planting stock— The Central Government shall have the power to make standards or delegate such powers to any other institution or state bodies to establish systems for the followings:

(i) Release new clones or cultivars for timber species;

(ii) Wood productivity claims by any entity;

(iii) Accreditation of nurseries and certification of seeds and quality planting stock; and

4. Power to make rules or standards regarding the legality of farm wood.— The Central Government shall have the power to make standards or delegate such powers to any other institution or state bodies:

(i) to make rules or delegate its function for the establishment Information Technology-based systems (also through mobile apps) for issuance of Certificate of Origin and Ownership ("COO") to all tree growers, which may be used for all purposes of trading and transaction of farm wood, insurance and collateral guarantee for banking support including future trading;

(ii) to include following information and documents needed to fulfil the requirement of due diligence system:

(a) Description, including trade name and type of relevant commodities and products as well as, where applicable the common name of the species and its full scientific name

(b) Quantity of the relevant products (No./mass/volume)

(c) Identification of the area (district, state) of production

(d) Geo-coordinates of al the plots of land where relevant products produced with date

(e) Names and address of the businesses/persons from whom they have been supplied relevant products and to whom the products have been supplied

(iii) to authorise 'local bodies' to be second-party certifiers for the issuance of COO to the first party (tree growers) in the IT based system mentioned in (i) and risk assessment mechanism verifiable through remote controls for due diligence;

(iv) to authorize traders, agents or industries as third-party certifier through Information Technology-based systems (also through mobile apps) for issuance of Certificate of Origin and Ownership ("COO") and to mark and grade farm wood according to the AgiWood-India Standards;

(v) to prescribe a system in India for electronic registration of a trader or agent to "Electronic trading and transaction platform" and of the modalities of chain of custody along production, harvesting, transport, trading and consumption, in order to corroborate the legality and chain of custody of farm wood with minimal cost to tree growers and sponsors;

(vi) to prescribe for IT based online registration of such Wood-based industries and enterprises conforming to above provisions of legality of farm wood so as to promote demand for such farm wood and help farmers increase their income;

5. Inter-state or intra-state trade and commerce.— Subject to the provisions of this Act, any tree grower, trader, or electronic trading and transaction platform shall have the freedom to carry on inter-state or intra- state trade and commerce in farm wood in a trade area.

6. Power to make rules for national framework on farming agreements.— The Central Government or institution authorised by the central government shall prescribe rules or guidelines for a national framework on farming agreements between tree growers (farmers) and sponsors for growing trees that protect and empower tree growers to engage with sponsors at a mutually agreed remunerative price framework in a fair and transparent manner, and for matters connected therewith or incidental thereto or delegate such powers to state bodies for a particular state.

CHAPTER 3
OF AGROFORESTRY BOARDS

7. Constitution of Agroforestry Board of India.—

(1) The Central Government shall prescribe for constitution of an Agroforestry Board of India to provide for improved linkages between tree growers, traders or agents, farm wood-based industries or enterprises, research institutes and related government representatives including the states.

(2) The Agroforestry Board of India shall be under the Chairmanship of the Minister-in-charge, Ministry of Agriculture or any eminent personality from the agroforestry sector nominated by the Minister-in-charge.

(3) The Agroforestry Board of India shall function at New Delhi under the ministry of agriculture investing in research, extension and capacity building, coordination and related services;

8. Constitution of Agroforestry Board at the State level and the regional level. —

(1) Agroforestry Boards shall be constituted at the State level as well as the regional or district level by resolutions of respective State Government. The Chairmanship of such council shall be the Chief Minister of the respective State or an eminent personality from agroforestry sector nominated by the Chief Minister of the respective State.

(2) The State and regional or district-level Agroforestry Boards shall function under the overall guidance of the Agroforestry Board of India.

(3) The regional or district-level Agroforestry Boards shall function under the overall guidance of their respective State-level Agroforestry Board, and the decisions of their respective State-level Agroforestry Board shall be binding on them.

9. Functions of State-level and regional-level Agroforestry Boards.— The State-level and regional-level Wood Councils:

(1) Shall facilitate vertical integration of the above-mentioned linkages between all stakeholders;

(2) Shall ensure less transportation cost and fix minimum and maximum price of local farm wood in their areas based on market chain analysis;

(3) Shall remove the widespread mismatch between demand and supply of farm wood at the State and the regional level;

(4) May have their own electronic trading and transaction platform for intra-state trade and commerce in their area following the chain of custody regime electronically.

10. Powers of State-level Agroforestry Board.—

(1) The State-level Agroforestry Board shall be the final authority on the establishment and promotion of farm wood-based industries to encourage all farm wood industries, especially new establishments, to promote farm forestry plantations and monitor progress of the same to ensure sustainable farm wood supply to all wood-based industries in the State.

(2) The State-level Agroforestry Board shall be the final authority on demarcation and designation of any catchment area for trader, agent and sponsor so as to encourage tree growers (farmers) to grow trees on their lands.

(3) It shall decide on incentive programme, if any for the farmers who grow trees, depending upon the succession rate after one year of plantation for continuing the plantation for longer time.

(4) The State-level Agroforestry Board shall be empowered to provide for upgradation and deployment of tools and techniques for on-site harvesting, conversion, peeling, veneering, impregnation, modification, seasoning, storage and other such value additions to farm wood, notwithstanding any other provisions in any other Acts.

CHAPTER 4
PENALTIES AND JURISDICTION

11. Power to levy fine.— Whoever contravenes the provisions of this Act or the rules made thereunder shall be liable to pay a fine levied by the regional- level or State-level Agroforestry Board or the Agroforestry Board of India, which shall be not be less than twenty five thousand rupees but which may extend up to twenty five lakh rupees, and where contravention is a continuing one, further penalty not exceeding five thousand rupees for each day after the first day during which the contravention continues.

12. Appeals.—

(1) Appeal against the decision of regional or district level Agroforestry Board shall lie only to State-level Agroforestry Board.

(2) Appeal against the decision of the State-level Agroforestry Board shall only lie to Agroforestry Board of India.

13. Bar of jurisdiction of civil court.— No civil court shall have jurisdiction to entertain any suit or proceedings in respect of any matter, the cognizance of which can be taken and disposed of by any authority empowered by or under this Act or the rules made thereunder.

CHAPTER 5
MISCELLANEOUS

14. Power of Central Government to give directions.— The Central Government may, for carrying out the provisions of this Act, give such instructions, directions, orders or issue guidelines as it may deem necessary to any authority or officer subordinate to the Central Government, any State Government or any authority or officer subordinate to a State Government, and traders and sponsors.

15. Indemnity for acts done in good faith.— No suit, prosecution or other legal proceedings shall lie against the Central Government or the State Government, or any officer of the Central Government or the State Government or any other person in respect of anything which is, in good faith, done or intended to be done under this Act or of any rules or orders made thereunder.

16. Act to override other laws.— Save as otherwise provided in this Act, the provisions of this Act shall have effect, notwithstanding anything inconsistent therewith contained in any State Act or any other law for time being in force or any custom or usage or any instrument having effect by virtue of any law.

FIPPI Urges Inclusion of Timber Tree Species in 'Agricultural Statistics at a Glance' to Improve Visibility of Agroforestry in National Agricultural Data

FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2985/1968-69 DT. 4.1.1969

1005, VIKRANT TOWER, 4, RAJENDRA PLACE, NEW DELHI110 008, INDIA
Phone No.: +91-11-2575 5649 • **E-mail:** fippi@fippi.org • **Website:** www.fippi.org

FIPPI/Statistics1/2025-26 January 5, 2026

To,
Shri Devajit Khound
Principal Economic Advisor
Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare.

Kind Attention:
Shri Arun Kumar,
Sr. Economic and Statistical Advisor,
Department of Agriculture & Farmers Welfare.

Subject: Request for Inclusion of Timber Tree Species in 'Agricultural Statistics at a Glance' Publication – To Promote Agroforestry and Support the National Agroforestry Policy, 2014.

Respected Sir,

At the outset, we respectfully take this opportunity to introduce the Federation of Indian Plywood and Panel Industry (FIPPI). Established in 1961, FIPPI is the apex national body representing manufacturers and regional associations engaged in the production of plywood, medium-density fibreboard (MDF), and particle board across India. The Federation serves as the principal representative voice of the industry in matters relating to policy formulation, regulatory consultations, and issues of national importance.

On behalf of the Indian plywood and panel industry, FIPPI extends its sincere appreciation to the Economics & Statistics Division of the Department of Agriculture & Farmers Welfare for its annual flagship publication, 'Agricultural Statistics at a Glance.' Over the years, this publication has emerged as the most authoritative and reliable reference on various aspects of agriculture and allied sectors for policymakers, researchers, farmers, scientists, administrators, and other stakeholders across the country. Its comprehensive and data-driven framework has been instrumental in supporting evidence-based policy formulation, programme design, and systematic performance assessment in Indian agriculture.

Despite the launch of the National Agroforestry Policy in 2014 by the Government of India, farm-grown tree plantations continue to be inadequately represented in national agricultural statistics. This limitation reduces the visibility of agroforestry within the formal statistical framework and constrains evidence-based policymaking aimed at addressing the challenges hindering the effective implementation of this Policy.

FIPPI wishes to highlight that in recent years, agroforestry has emerged as a significant and rapidly expanding component of the Indian agricultural system across multiple states. It has contributed meaningfully to income diversification

for farmers, enhanced resilience of rural economies, and improved environmental outcomes. At present, India has approximately 28.4 million hectares of land under agroforestry, with the potential to expand to over 53 million hectares. Several studies indicate that the recent increase in the nation's green cover can be largely attributed to the expansion of agroforestry practices, driven in part by rising demand for agroforestry-based timber from dependent industries such as the Indian plywood and panel industry.

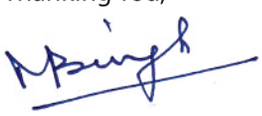
In this context, FIPPI respectfully requests the Department of Agriculture & Farmers Welfare to include a dedicated classification capturing timber tree species-wise data for key agroforestry species in the 'Agricultural Statistics at a Glance' publication. We propose that the following five species, which together account for a substantial share of current agroforestry plantations in the country, be included, along with a miscellaneous category:

1. Eucalyptus
2. Melia dubia
3. Poplar
4. Casuarina
5. Silver Oak and other miscellaneous agroforestry species

Such a classification would enable systematic and consistent capture of agroforestry-related data. The inclusion of this data would strengthen evidence-based policymaking for agroforestry promotion, provide formal statistical recognition to farmers engaged in tree-based agriculture, and encourage wider adoption of agroforestry practices. This, in turn, would support the effective implementation of the National Agroforestry Policy, 2014.

We trust that this proposal will receive your due consideration and necessary attention.

Thanking You,



Dr. M.P. Singh
Director General
Federation of Indian Plywood and Panel Industry (FIPPI)

FIPPI Participates in the National Workshop on "Promoting Forest Based Sustainable Bioeconomy: Issues and Challenges on the occasion of International Day of Forests held at ICFRE, Dehradun during 21 – 22 March 2026

Forest Based Industries: Opportunities for Small and Medium Enterprises

About the Workshop

The National Workshop on "Promoting Sustainable Forest-Based Bioeconomy: Issues and Challenges" was held on 21–22 March 2026 at Indian Council of Forestry Research and Education (ICFRE), Dehradun, on the occasion of the International Day of Forests, observed under the theme "Forests and Economies." The workshop was inaugurated by Shri Bhupender Yadav, Hon'ble Minister of Environment, Forest and Climate Change, in the presence of policymakers, scientists, industry representatives, and practitioners.

Deliberations focused on key themes such as sustainable resource-based bioeconomy, forest-based industries, climate change mitigation, and wildlife-linked bioeconomy. It emphasized integrating agroforestry and non-timber forest products (NTFPs) into national strategies, with a focus on high-value crops, value addition, and improved market access. Strengthening Trees Outside Forests (ToF), promoting wood as a sustainable alternative to energy-intensive materials, and supporting forest-based enterprises through cluster-based development and policy reforms were highlighted.

Discussions underscored the importance of circular economy approaches, including waste valorisation and efficient resource use. Enhancing farmer–industry linkages, harmonised certification systems, and capacity building were identified as key enablers.

The workshop concluded by advocating integrated strategies combining technology, institutional support, and community participation to advance a resilient and inclusive forest-based bioeconomy in India.

Forest Based Industries: Opportunities for Small and Medium Enterprises

Introduction

Forest-based industries are emerging as a vital component of India's development trajectory, playing a crucial role in shaping a sustainable and resilient economy. Beyond being a pillar of the rural economy, these industries serve as key drivers of green growth, climate resilience, and resource efficiency.

In an era marked by a global shift toward low-carbon and circular economic systems, India's forest-based sector stands at a strategic advantage. It offers significant opportunities to align economic expansion with environmental sustainability—particularly through the active participation of Small and Medium Enterprises (SMEs), which are well-positioned to drive innovation, value addition, and inclusive growth within the sector.

Transition Towards a Forest-Based Bioeconomy

The forest-based sector is undergoing a major transformation. What was once limited to traditional timber products has now expanded into a broader bioeconomy that includes engineered wood products, biomass materials, and non-timber forest products like bamboo, resins, and medicinal plants.

This transition is extremely important because it aligns economic growth with environmental sustainability. Forest-based bioeconomy approaches promote the use of renewable resources, reduce dependence on fossil-based materials, and contribute significantly to climate change mitigation and biodiversity conservation. Most importantly, this shift is creating new avenues for entrepreneurship and innovation, particularly for SMEs.

Wood-Based Industries in India: A Socio-Economic Backbone

The wood-based industry in India is one of the country's oldest and most established industrial sectors, encompassing a diverse range of products derived from both wood and non-wood forest resources. These include sawn timber, composite panel products, and pulp and paper, among others. Over the decades, the sector has evolved into a vital component of the national economy, supporting millions of livelihoods—particularly in rural and semi-urban regions.

Broadly, the sector can be categorized into the following segments:

a) **Mechanical Wood Industries (Sawn Wood):** A large segment catering to diverse applications such as construction, furniture, packaging, transport, and various small-scale products like sports goods, toys, and tools.

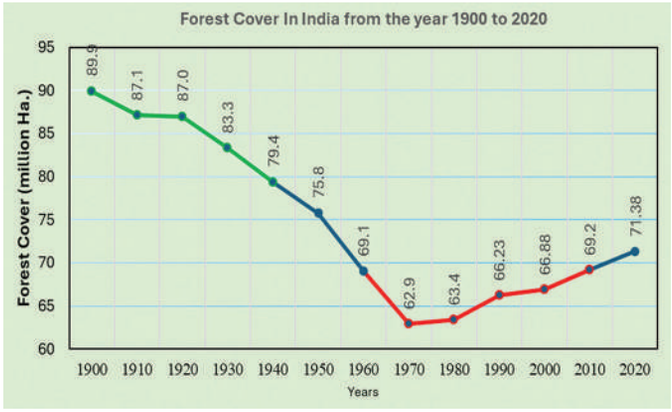
b) **Composite Panel Industries:** Includes plywood, particleboard, and fiberboard manufacturing, and represents a fast-growing segment driven by demand from furniture and construction sectors.

c) **Pulp and Paper Industry:** A key segment supplying paper and packaging materials, with strong linkages to forestry resources and recycling systems.

d) **Match Industry:** One of the oldest segments, comprising numerous small-scale and cottage units, and contributing significantly to rural employment.

Evolution of Wood Sourcing in India

India's forest resource base has undergone notable changes over the past century. From a steady decline in forest cover between 1900 and 1970 due to agricultural expansion and industrialization, the country has moved toward stabilization and gradual recovery since the 1970s. Forest cover began to stabilize after 1970, with only a slight increase. This marked the beginning of awareness and early conservation efforts. Externally Aided Projects (EAP) in forestry sector on a substantially large scale started during the late 1970s to augment financial resources, mainly for expanding the forest and tree resource through Social Forestry programmes. From 1980 onwards, forest cover showed a steady increasing trend, reaching about 71.38 million ha by 2020. This recovery has been driven by policy interventions such as the Forest Conservation Act (1980), social forestry initiatives, and the promotion of agroforestry. Today, a large share of industrial wood demand is met through Trees Outside Forests (TOF) and plantation resources, reflecting a shift toward sustainable sourcing practices.



Phases of Indian Forest Cover (Forest Transition)

Demand–Supply Dynamics: A Growing Opportunity for Small and Medium Enterprises

India's timber demand is witnessing a steady surge, driven by rapid urbanization, infrastructure development, and economic growth. However, domestic production continues to fall significantly short, creating a widening gap that poses challenges for industrial expansion while also opening new avenues for growth.

Projections indicate that roundwood demand could increase by nearly 70%—from about 57 million cubic meters in 2020 to approximately 98 million cubic meters by 2030—largely fueled by rising demand from the construction, housing, and furniture sectors.

On the supply side, constraints such as land degradation, limited availability of quality raw material, and regulatory complexities continue to restrict domestic production. As a

result, India remains dependent on timber imports, making the industry vulnerable to global price fluctuations and supply chain disruptions.

This growing demand–supply gap, while challenging, presents a significant opportunity for SMEs. It creates scope for expanding domestic production, strengthening agroforestry-based supply chains, and investing in innovative, value-added wood products—thereby enhancing both competitiveness and sustainability within the sector.

Plywood and Panel Industry: A Core Segment of Forest-Based Industries

The plywood and panel industry constitutes a central pillar of India's forest-based sector, playing a critical role in both economic development and livelihood generation. With a market size of approximately ₹50,000 crore, the industry supports over 20 lakh livelihoods, particularly across rural and semi-urban regions.

Plywood continues to dominate the wood panel segment, accounting for nearly two-thirds of the market share. Particle board and medium-density fibreboard (MDF) each contribute around 18%, reflecting a gradual shift toward engineered panel products driven by evolving consumer preferences and modern construction practices.

The industry comprises more than 3,300 manufacturing units across the country, the majority of which are MSMEs and operate within the unorganized sector. In fact, nearly 70% of the overall market remains unorganized, largely due to the dominance of small and medium-scale plywood manufacturers. In contrast, the MDF and particle board segments are relatively more organized and capital-intensive, with capacities concentrated among larger players.

Raw Material Base and Agroforestry Linkages

The raw material landscape of India's wood-based industries underwent a significant transformation following the Hon'ble Supreme Court's order of 12 December 1996, which restricted the use of forest-sourced timber. In response, the industry adapted by shifting toward farm-grown timber, leading to the emergence of new manufacturing clusters in states such as Haryana, Punjab, and Kerala, along with the development of decentralized supply chains.

Today, a defining strength of the sector lies in its strong linkage with plantation forestry and agroforestry systems. Currently, over 92% of the timber used by the wood-based industry is sourced from Trees Outside Forests, supporting more than one million farmers, while the remaining requirement is met through imports. For SMEs in particular, this presents a significant opportunity to build resilient, locally integrated supply chains and capitalize on an underutilized yet highly promising resource base.

Industry Transformation and the Role of Quality Control Orders

The implementation of Quality Control Orders (QCOs) has marked a significant turning point for India's plywood and panel industry. By enforcing standardized quality benchmarks, these regulations have curtailed the influx of substandard imports, strengthened consumer confidence, and encouraged greater investment in domestic manufacturing.

The impact of QCOs is clearly visible across the sector. Improved compliance has led to enhanced production efficiency, better product quality, and increased formalization—particularly within the largely MSME-driven plywood segment. As a result, the industry is transitioning toward a more structured and quality-conscious ecosystem.

Recent trends indicate strong growth momentum. Plywood production has witnessed an increase of nearly 15% in the past six months, rising from approximately 10 million cubic meters to 11.5 million cubic meters. The industry is also moving toward optimal utilization of its installed capacity of around 12 million cubic meters, with additional capacities being developed to meet rising domestic demand.

Encouragingly, fresh investments are being made across both plywood and engineered panel segments, reflecting strong industry confidence. Notably, new manufacturing units are increasingly being established in regions with a strong agroforestry base, further strengthening raw material linkages and regional economic development.

Overall, QCOs have not only improved quality standards but have also catalyzed a broader transformation—driving competitiveness, investment, and long-term sustainability within the sector.

SMEs: The Backbone of the Sector

Small and Medium Enterprises (SMEs) form the backbone of India's forest-based industries, driving employment, innovation, and regional economic development. Their presence is particularly significant in rural and semi-urban areas, where they contribute to inclusive growth while strengthening local economies.

The MSME-dominated structure of the wood-based sector highlights its importance in building a green and self-reliant India. With strong linkages to agroforestry, rural livelihoods, and decentralized manufacturing, SMEs play a pivotal role in translating resource potential into economic value. The sector is highly labour-intensive, employing nearly 3.5 million people—primarily unskilled and semi-skilled workers—across harvesting, transportation, processing, and allied activities.

Policy initiatives such as Make in India, Ease of Doing Business, Start-Up India, Digital India, and Smart Cities have already begun to create a more enabling environment for industrial growth, reflected in improved infrastructure and increased investment flows. In this evolving landscape, SMEs are well-positioned to capitalize on rising demand for value-added wood products, engineered panels, and sustainable materials.

Emerging Opportunities for SMEs

The evolving landscape of forest-based industries presents a wide range of opportunities for Small and Medium Enterprises (SMEs). With growing demand for sustainable and value-added products, SMEs are well-positioned to expand across multiple segments, including value-added wood and panel products (e.g. decorative and specialty plywood and wood panels, laminated boards, fire-retardant panels, etc.), non-timber forest products (NTFPs) (bamboo boards, resins, essential oils, medicinal plant processing, lac, and honey-based value chains), bio-based and eco-friendly materials (wood-plastic composites (WPC), bio-resins, agricultural residue-based panels such as rice straw or bagasse boards), and agroforestry-linked supply chains.

These opportunities are further reinforced by shifting consumer preferences toward environmentally responsible products, creating new and niche market segments. As sustainability becomes a key market driver, SMEs can leverage their flexibility and innovation capacity to cater to emerging demands, develop specialized products, and strengthen their position in both domestic and global markets.

Agroforestry and Sustainability: A Win–Win Model

Agroforestry has emerged as the single most important growth driver for India's forest-based industries, offering a compelling convergence of economic, environmental, and social benefits. By fostering direct linkages with farmers and landowners, SMEs can secure reliable and cost-effective raw material supplies while simultaneously strengthening rural economies.

At its core, agroforestry significantly enhances farmer incomes compared to conventional agriculture. Numerous case studies have demonstrated its viability as a high-return land-use model, making it an increasingly attractive option for farmers across the country.

Beyond its economic advantages, agroforestry plays a critical role in advancing environmental sustainability. It contributes to increased green cover, enhances carbon sequestration, and supports India's climate commitments. Currently, nearly 28.4 million hectares under agroforestry sequester an estimated 60–65 million tonnes of carbon annually. Expanding this area to 53 million hectares could substantially amplify these benefits. In fact, a 20% increase in agroforestry tree cover over the past decade underscores its growing importance in climate mitigation and landscape restoration.

A robust agroforestry supply chain thus creates a true win–win scenario—ensuring consistent raw material availability for industries while generating livelihoods, enhancing farmer resilience, and contributing to sustainable development. For SMEs, it represents not just a resource base, but a strategic pathway for long-term growth and sustainability.

Challenges Facing the Sector

Despite its significant potential, India's forest-based industry continues to face several challenges that constrain its growth and competitiveness.

a) **Raw Material Constraints:** The sector faces a persistent shortage of quality timber, with nearly 92% sourced from Trees Outside Forests (TOF) and agroforestry, and the remaining 8% met through imports. This dependence, coupled with short rotation cycles and fragmented supply systems, leads to price volatility and supply inconsistencies, limiting long-term planning and expansion.

b) **Regulatory Complexities and Transit Restrictions:** Farm-grown timber is often not treated on par with agricultural produce, resulting in cumbersome transit permit requirements. Inconsistent and fragmented state-level regulations further increase compliance costs and disrupt the smooth movement of raw materials across regions.

c) **Policy Gaps in Agroforestry:** Unlike conventional agriculture, agroforestry lacks adequate policy support. The absence of financial incentives and the imposition of taxes—such as GST on agroforestry produce, while agricultural crops remain largely exempt—create a disparity that discourages large-scale adoption.

d) **Technological Limitations, Skill Gaps and Evolving Market Challenges:** Limited access to modern technologies, gaps in skilled manpower, and increasing competition from low-cost imports continue to affect productivity and quality. Additionally, the need for standardization and compliance with evolving quality norms poses challenges, particularly for MSMEs.

These challenges are systemic in nature and require coordinated policy and institutional interventions.

Strategic Way Forward

Addressing the challenges facing India's forest-based industries requires a focused and integrated approach, combining policy reforms, technological advancement, skill development, and stronger supply chain linkages.

Key strategic priorities include:

a) **Policy and Regulatory Reforms:** Establish clear and uniform regulations for agroforestry, including simplified felling and transit permissions, to build farmer confidence and ensure smooth raw material flow.

b) **Financial Incentives:** Provide support for plantation development, including subsidies and access to high-quality planting material from certified nurseries.

c) **Infrastructure Development:** Invest in efficient logistics, transportation networks, and cluster-based industrial zones near raw material sources to reduce

costs and improve supply chain efficiency.

d) **Strengthening Industry–Farmer Linkages:** Promote contract farming models and extend crop insurance schemes to agroforestry plantations, reducing risks for farmers and ensuring stable supply for industry.

e) **Institutional Mechanisms:** Establish a National Agroforestry Board to coordinate among farmers, industry, traders, and research institutions, enabling better price discovery and sectoral planning.

f) **Skill Development and Technology Adoption:** Align skill development initiatives with industry needs, focusing on practical training, modern processing technologies, and quality compliance to build a job-ready workforce.

Conclusion

India's forest-based industries present immense opportunities for SMEs that are willing to innovate, invest in quality, and adopt sustainable practices. By positioning themselves strategically within this evolving ecosystem, small and medium enterprises can play a vital role in advancing both economic progress and environmental stewardship.

The sector represents a true win–win model—driving economic growth, promoting environmental sustainability, and enhancing rural livelihoods. In this transformation, SMEs will remain central as key drivers of innovation, employment, and decentralized development.

Sustained progress, however, will depend on strong collaboration between government, industry, and research institutions to create an enabling ecosystem for growth and innovation.

As India moves toward a greener and more resource-efficient economy, the role of SMEs will become increasingly critical. With the right policy support, investment, and collaborative efforts, they can lead the next phase of growth—transforming challenges into opportunities and contributing meaningfully to the nation's sustainable development goals.❑

Minutes of the Management Committee Meeting of the Federation of Indian Plywood and Panel Industry (FIPPI), held on 20th January 2026 in New Delhi

The Federation of Indian Plywood and Panel Industry (FIPPI) convened its Management Committee Meeting on 20 January 2026 at Taj Man Singh, New Delhi. The primary objective of the meeting was to deliberate on the requirements and emerging market demands of the furniture manufacturing sector, and to explore areas of collaboration between the plywood, panel, and furniture industries. The agenda also included the release of FIPPI quarterly magazine (Volume 19, Issue 4 - October-December 2025). The meeting was attended by office bearers, members, patrons, representatives of regional associations, who engaged in constructive discussions on issues critical to the growth of the plywood and panel industry.

Members' Present:

1. Shri Rajesh Mittal, President, FIPPI
2. Shri Jaydeep Chitlangia, Senior Vice President, FIPPI
3. Shri. Suraj Patra, Century Plywood (I) Limited
4. Shri. Dhanesh Pandey, Century Plywood (I) Limited
5. Shri. Sumant Wattas, Century Plywood (I) Limited
6. Dr. Purushottam Sharma, Greenpanel Industries
7. Dr. Prasanth M.A., AK Apple Ply
8. Shri. Ujjwal Bansal, Birmi Wood Products
9. Shri. Yogesh Arora, Greenlam Industries Limited
10. Shri. B.L. Sharma, Greenlam Industries Limited
11. Shri. Ajay Garg, E3 Group
12. Shri. Nitish Bansal, Magnus Plywood
13. Shri. Raghav Gupta, Magnus Plywood
14. Shri Navin Patel, Secretary, Gujarat Plywood & Veneers Manufacturers Association
15. Ms. Tamanna Sharma, Rushil Décor Limited.
16. Shri. Naman Madaan, Ligna Décor Private Limited
17. Shri. Ankit Singhal, Plywood Manufacturer Welfare Association, UP / Vidya Ply
18. Shri. Vijay Agarwal, Supreme Décor LLP
19. Dr. M. P. Singh, Director General, FIPPI
20. Shri Jinendra Jain, Senior Sustainability Advisor, FIPPI
21. Shri Ajay Kumar, Senior Economic Policy Advisor, FIPPI
22. Dr. Richa Bansal, Assistant Director, FIPPI
23. Shri Rishabh Gandhi, Economic Officer, FIPPI
24. Ms. Kavita Goyal, Office Assistant, FIPPI

Shri Rajesh Mittal, President FIPPI & CMD Greenply Industries, commenced the meeting by extending a warm welcome to the esteemed members present. In his opening remarks, he emphasized that the domestic industry possesses the technical capability and manufacturing capacity to produce most technical-grade and value-added products currently demanded by the market. He clarified that many such products are already being manufactured domestically and are available within existing inventories.

He further informed the members that Indian manufacturers are producing FSC-certified boards, CARB-compliant boards, and products conforming to ASTM standards, with no shortage in supply. Several Indian manufacturers operate with valid FSC certifications (both CoC and FM), and more than 40 manufacturing units in

India meet CARB P2 emission standards. Testing as per applicable ASTM methods is routinely conducted through NABL-accredited and internationally recognized laboratories, enabling manufacturers to supply products that conform fully to ASTM requirements.

The President FIPPI also highlighted that the industry is already manufacturing specialized products such as birch plywood and pine MDF. Dr. Prasanth M.A., President, SIPMA and Director, AK Apple Ply Pvt. Ltd., informed the members that his company has successfully commenced the manufacture of 100% birch plywood using imported veneers. He also presented samples of domestically produced birch plywood to the members. Mr. J.K. Jain (Greenply Industries) informed the forum that Greenply has begun manufacturing MDF from imported pine and showcased samples of domestically produced pine MDF.

The points concerning the Quality Control Orders (QCOs) raised by various stakeholders were deliberated upon in detail by the members. After comprehensive discussions, a consolidated response was finalized, as presented below:

S. No.	Points Concerning QCOs Raised by Other Stakeholders	FIPPI's Response
1.	Furniture manufacturers have no access to such boards which are not made in India such as FSC-Certified Boards	• No shortage of FSC-certified wood & boards in India • FSC-certified plywood & panel are being used by furniture manufacturers, who further export their products • Several Indian manufacturers operate with valid FSC (CoC & FM) certifications • Certified units include more than 170 across Plywood, MDF and particle board (List enclosed) • Letter dated 16th December 2025
2.	CARB-Compliant Boards	• More than 40 Indian manufacturing units meet CARB P2 emission standards. • Compliance supported by routine testing from internationally recognized laboratories • Letter dated 16th December 2025
3.	ASTM Boards	• Indian Standards are already harmonized with International Standards • Indian manufacturers routinely conduct testing as per applicable ASTM methods through NABL-accredited and internationally recognized laboratories. • Products conforming to ASTM requirements can be supplied.
4.	Boards Made from Exotic Species such as rubber wood, Birch wood, pine wood are not available in India	• Rubber wood is available in plenty in India and such boards are abundantly made in Kerala. • Example: • AK Apple Ply, Bengaluru manufactures 100% Birch plywood conforming to E0/E1 emission grades using imported core veneers (Letter dated 16th December 2025) • Greenply currently manufactures MDF from imported pine
5.	Indian Plywood & Panel Manufacturers Are Technically Incapable of Producing: i) Pre-laminated plywood ii) No Indian Standard on Synchronized Melamine faced plywood	• Pre-laminated Plywood are currently being manufactured by many manufacturers • Indian Standards are currently in development. • Example: 6-7 manufacturers in India have started manufacturing

	iii) No Indian Standard for Flexible Plywood iv) Raw Plywood for Short Cycle Lamination and Foil Lamination v) Nitrogen Excimer Energy Coated Decorative Plywood in Veneer & PET vi) Birch Plywood in plain and film faced variety	• Standard formulation is in process • Part of the prelaminated Plywood • Standard formulation is in process • This can be manufactured on B2B Collaboration under IS 303 specifications. • Action Tesa is manufacturing • Birch plywood is available in India.
6.	i) Pre-laminated or Melamine faced or Post-laminated Electrostatically Dissipative particle board (ESA/ESD Type) ii) Fire-rated particle board in plain and pre-laminated variety iii) Low Density Particle board (Density upto 500 kg/m3) iv) Plain and Pre- laminated/melamine faced particleboard as per EN 16516 or F**** emission norms and with 100% FSC or PEFC certifications. v) Nitrogen Excimer Energy Coated Decorative Particle board in Veneer & PET	• Available in India. Eg: Merino is already manufacturing it. • Available in India & standard development is in process. • Below 500 kg/m3 can be produced according to the requirement. • IS Standard is available, IS 3129. • Testing facility is available in India. Based on requirements, it can be made available. • In India, E0 standard is under development. • We are not aware of such requirements. The technical specifications may be shared with us.
7.	i) Fire-rated Medium Density Fibreboard (MDF) in plain and pre-laminated variety ii) Plain and Pre- laminated/melamine faced Medium Density Fibreboard (MDF) as per EN 16516 or F**** emission norms and with 100% FSC or PEFC certifications. iii) Plain and Pre- laminated/melamine faced High Density Fibreboard (HDF) of density 900+ kg/m3 iv) PU/Acrylic/PET/Paper foiled Medium Density Fibreboard v) Pine and Whitish Rubber Wood Medium Density Fibreboard vi) Nitrogen Excimer Energy Coated Decorative Medium Density Fibreboard in Veneer & PET	• Available in India • Customized product can be made in India, based on the requirement. • Available in India and standard development is in process. • Available in India. It is covered under IS 14587. • Rubber wood is available in plenty in India. Based on requirement, rubber wood MDF can be made available. • Pine MDF is already available in India. • Based on requirements, it can be made available in India.
	More innovation can happen with respect to products in B2B model, inviting furniture manufacturers to detail their requirements	
8.	QCOs Causing Price Hike of Plywood & Panel Products	• Post-QCOs, MDF/Particle Board prices decreased, other panel products like plywood remained stable. • No coordinated or industry-wide price hike post QCO implementation • Leading manufacturers have absorbed cost pressures through intrinsic internal mechanism • Some manufacturers have offered seasonal discounts or promotional schemes

		• Others are increasing production and optimizing capacity utilization • (Letter no: FIPPI/1P-2025 dated 10th October 2025)
9.	Eucalyptus Has Adverse Environmental Impact: i) Eucalyptus Requires Pesticides in Abundance Polluting Ground Water Heavily ii) Eucalyptus Consumes Excess Water, Lowering the Water Table	• Impertinent & Myth: Eucalyptus is a major agroforestry species grown alongside agricultural crops, the inputs – practices are common to the agrocrops & Eucalyptus; therefore, no separate adverse impact can be attributed • No adverse environmental impact and not detrimental to the water table • Consumes less water per kg of biomass produced compared to many other tree species and agricultural crops (annexure enclosed)
	National Green Tribunal (NGT) in its Order dated 20th July 2015 in Original Application No. 9 of 2014, in para 31 clearly stated that based on studies conducted in different countries, growing of Eucalyptus, one of the major farm forestry species, has no adverse environmental impact nor it is disastrous for water table (Annexure Enclosed)	
10.	QCOs Leading to the Supply Chain Disruptions, Loss of New Industries	• Contrary to this, supply chain has been augmented post- QCOs implementation. Rising consumer confidence resulting in the increase of domestic plywood production of 15% from 10 CBM to 11.5 CBM in the next 6 months post-QCOs • Industry is operating near its installed capacity level of 12 CBM of plywood production • Leading companies invested ₹600 crore in plywood & ₹3,000+ crore in MDF/particleboard capacity.
11.	QCOs Resulting in Loss of Exports of Wooden Furniture	• India's exports of wooden furniture (HSN 9403) increased from a monthly average of ₹837 crore in the pre-QCO period (Apr 2024 – Feb 2025) to ₹846 crore in the post-QCO period (Mar 2025 – Oct 2025), registering a 1% growth despite adverse global trade conditions. • On a monthly average basis, wooden furniture exports to the U.S. fell by just 4% post- QCOs compared to pre- QCOs, despite U.S. tariffs of up to 50% imposed in August 2025. • Export stability despite steep tariffs suggests improved non-price competitiveness, supported by better-quality raw materials following QCO implementation on plywood and panel products.
12.	No Standard for E0 in India	• E1 & E2 are currently in place, and the method for E0 measurement is in wide circulation
13.	Inadequate Availability of Raw Material in India, causing higher prices of timber	• Augmenting 92% from agroforestry & rest from imports • There is no restriction on import of wood
14.	Indian Boards Manufactured from Exotic Species Lacks Functional Suitability in Several Applications such as Children Furniture, Toys, LNG Tankers, Laser Cutting, Usage in Oscillatory Devices, Defence Armoured Vehicles Produced in India, Tanks where Birch Plywood has to be used compulsorily for reasons of its properties	• Birch plywood is available in India

Release of the Quarterly Magazine – Indian Wood & Allied Panels (Volume 19, Issue 4, October-December 2025)

Dr. M.P. Singh invited the members to formally release the latest edition of FIPPI's quarterly magazine, Indian Wood & Allied Panels (Volume 19, Issue 4 - October-December 2025). He described the publication as the official quarterly journal of FIPPI, often referred to as the 'Voice of FIPPI,' as it covers key activities, initiatives, events and policy engagements undertaken by FIPPI during the reporting period. He encouraged all members to take time to review the magazine, noting that the issues highlighted therein would serve as the foundation for several of the deliberations scheduled in the current meeting.

Closing Remarks

The meeting concluded with a vote of thanks to the Chair and hon'ble members, acknowledging their valuable contributions and active participation.❑

Collaborative Initiative for Sustainable Utilization of Plywood and Panel Manufacturing Rejects

FIPPI Signs MoU with IWST for the development of a draft Code of Practice for the utilization of up to 10% rejects of plywood and panel products.

The Federation of Indian Plywood and Panel Industry (FIPPI) and the Institute of Wood Science and Technology (ICFRE-IWST) signed a Memorandum of Understanding (MoU) on 09 February 2026 to undertake a collaborative project for the development of a draft Code of Practice for the utilization of up to 10% rejects of plywood and panel products. The initiative aims to establish a scientifically validated, industry-oriented, and policy-compliant framework to support sustainable utilization of manufacturing rejects without compromising quality, safety, or regulatory requirements.

The project will involve industrial surveys, rejection assessment, and technical evaluation through industrial visits across approximately five major manufacturing clusters, namely Haryana, Gujarat, Uttarakhand–Uttar Pradesh (UK-UP), Karnataka, and Kerala, covering five representative manufacturing units.

ICFRE-IWST will serve as the technical implementing agency, responsible for research, testing, analysis, and preparation of technical documentation, while FIPPI will facilitate industry coordination, stakeholder consultations, and access to manufacturing units. Based on the findings, a draft Code of Practice will be prepared, outlining permissible utilization limits, technical guidelines, safeguards, and compliance mechanisms, aligned with applicable BIS standards and Quality Control Orders (QCOs).

The outcomes of the project are expected to support resource efficiency, waste minimization, circular economy principles, and regulatory clarity, contributing to sustainable growth in the wood-based panel industry.❑

FIPPI's Meeting with DPIIT on Issues Related to QCOs in Wood Panel Sector

FIPPI primary and affiliated members participated in a high-level meeting at Vanijya Bhawan on 20th January 2026, chaired by Shri Sanjiv, Joint Secretary (DPIIT), co-chaired by Shri Mohd. Isharar Ali, Director, DPIIT, with senior BIS officials, to discuss issues related to QCOs for plywood and wood-based panels.

Rising Industry Compliance

- BIS informed that 2,473 domestic units have been granted licences, with 168 applications under process, and the number is expected to reach around 2,600 by next month.
- The FIPPI President, Shri Rajesh Mittal expressed appreciation for BIS's efforts in enhancing compliance across the sector. He further shared that to raise industry compliance, FIPPI has undertaken multiple outreach programmes across industry clusters.

Addressing Misconception Surrounding QCOs

- Dr. Prasanth M.A., President, SIPMA and Director, AK Apple Ply Pvt. Ltd., shared that his company has successfully commenced the manufacture of 100% birch plywood using imported veneers. Mr. J.K. Jain (Greenply) further informed that Greenply has begun manufacturing MDF from imported pine.
- The FIPPI President clarified that, post-QCO implementation, plywood prices have remained stable, prices of MDF and particle board have declined by 10–12%, due to the economies of scale resulting from import substitution.
- Mr. Vijay Aggarwal, Kerala Particle Board Manufacturers Association, stated that there is no shortage of particle board in Kerala. He highlighted that farmers are receiving favourable prices and that particle boards manufactured in Kerala from Rubber wood are competitively priced compared to imported ones.
- Mr. J.K. Jain, Senior Sustainability Advisor, FIPPI, cited the National Green Tribunal (NGT) Order dated 20th July 2015, which concluded that eucalyptus cultivation does not adversely affect the environment or groundwater levels.
- The FIPPI President noted that small plywood, MDF and particle board units across multiple clusters are operating near full capacity, after QCOs.

The Way Forward

- DPIIT suggested that FIPPI members to undertake one-to-one engagements with key stakeholders such as furniture manufacturers' associations and toy manufacturers to address their concerns.
- The FIPPI President clarified that our products are directly marketed to the consumers and the role of carpenters is very important in our supply chain. However, FIPPI has planned B2B engagements with furniture manufacturers in coming days to understand their customised requirements, if any.
- Mr. N.K. Aggarwal, Patron, FIPPI, explained that FIPPI would launch an extensive nationwide awareness programme, to disseminate the transformative impact of QCOs on the industry, carpentry artisans, and consumers.❑

B2B Meeting of Plywood & Panel Manufacturers with Furniture Manufacturers INDIAWOOD Bengaluru 2026

The Federation of Indian Plywood and Panel Industry (FIPPI) organized a B2B Meeting of the plywood and wood-panel manufacturers with the furniture manufactures on 27th February 2026 during INDIAWOOD – Global Summit for Woodworking & Furniture Production Technology, held at the Bangalore International Exhibition Centre (BIEC), Bengaluru.

The meeting focused on deliberating product specifications, quality standards, sustainability benchmarks, and evolving technical expectations for wood-based plywood and panel products.

Special emphasis was placed on aligning product standards as per the requirements of the furniture industry.

Key Requirements Highlighted by Furniture Manufacturers:

Across Plywood, Medium Density Fibreboard (MDF), and Particle Board (PB), the following were deliberated:

- Calibrated plywood with surface plainliness within ±1 mm
- Birch plywood in plain and film-faced varieties

- Pre-laminated plywood
- Synchronized melamine faced plywood
- FSC and PEFC certified wood panel products
- Wood panel products with emission levels up to E0
- MDF and Particle Boards manufactured using Pine
- Fire-rated products in plain and pre-laminated varieties
- Nitrogen Excimer Energy Coated Decorative boards (Plywood, MDF and Particle Board) in Veneer and PET

Dr. Prasanth M.A., President, SIPMA and Director, AK Apple Ply Pvt. Ltd., informed that his company has successfully commenced manufacturing 100% Birch Plywood and assured its availability to meet the furniture industry requirements.

Greenlam Industries also assured supply of synchronized melamine faced plywood based on the specifications and demand of the furniture sector.

The discussion reflected the growing sophistication of the furniture manufacturing ecosystem, with emphasis on precision calibration, certified sourcing, low-emission materials, fire-rated products, and advanced decorative surface technologies aligned with global benchmarks.

Finally, the Plywood and Panel Manufacturers assured the furniture manufacturers that the materials required by them will be made available once the quantitative requirements are formally communicated by them.

Meanwhile, FIPPI will undertake an awareness campaign highlighting product innovations and technological advancements taking place in the wood panel industry, further strengthening industry integration and informed collaboration.❑

FIPPI Meeting with ICFRE – IWST for Pre – Report Discussion: Evaluation of Properties of Bagasse Particle Board manufactured in India, held on 18 March 2026

A productive technical meeting was convened at the Institute of Wood Science and Technology (IWST), Bengaluru, bringing together Dr. M.P. Singh (DG, FIPPI), Ms. Sujatha D & Shri Anand Nandanwar: scientists, IWST and representatives from the Indian Bagasse Board Manufacturers Association (IBBMA). The discussion focused on the pre-report review of the study on "Evaluation of Properties of Bagasse Particle Board Manufactured in India."

Based on samples collected from leading bagasse board manufacturers, IWST conducted a comprehensive evaluation of their physical and mechanical properties. The findings highlighted that bagasse-based boards exhibit distinct characteristics compared to wood-based particle (chip) boards. These differences are primarily attributed to the unique fibre properties of influencing both performance and application potential.

Notably, bagasse-based particle boards have also been placed under the 5% GST category, supporting their adoption as a sustainable and cost-effective alternative in the panel industry.

This collaborative effort marks an important step towards strengthening research-backed insights and promoting the development of alternative, eco-friendly raw materials in the wood-based panel sector.❑

FIPPI at MATECIA 2026, Kolkata: Strengthening Industry Connect

The Federation of Indian Plywood and Panel Industry (FIPPI) marked a distinguished presence at the MATECIA Building Material Exhibition, held from 30 January to 1 February 2026 at Biswa Bangla Mela Prangan, Kolkata. The three-day exhibition served as a premier convergence platform for stakeholders across the building materials ecosystem, fostering dialogue on emerging trends, regulatory frameworks, and growth opportunities within the wood panel industry.

Inaugural Ceremony & Lamp Lighting

(Eminent dignitaries inaugurating MATECIA Building Material Exhibition 2026 at Biswa Bangla Mela Prangan, Kolkata).

The event commenced on an auspicious note with the formal inauguration by Smt. Meenakshi Ganeshan, DDG, BIS, alongside Shri Rajesh Mittal, CMD, Greenply Industries Ltd. and President, FIPPI, and Dr. M. P. Singh, Director General, FIPPI. The ceremony was marked by the traditional lamp lighting, symbolizing the beginning of a collaborative and forward-looking engagement.

Following the inauguration, the Chief Guests, Smt. Meenakshi Ganeshan & Shri Rajesh Mittal, addressed the gathering, sharing their perspectives on industry developments, regulatory frameworks, and future growth opportunities. heir perspectives set a constructive tone for the event, emphasizing the importance of quality, standardization, and sustainable development within the wood panel industry.

Chief Guest Address by Smt. Meenakshi Ganeshan, DDG BIS .

Chief Guest Address by Shri Rajesh Mittal, CMD, Greenply Industries Limited & President FIPPI.

Technical Session: BIS – Current Issues and Way Forward

A key highlight of the opening day was the technical session on "BIS – Current Issues and the Way Forward for the Wood Panel Industry". Moderated by Shri Pragath Dvivedi, Founder, Ply Reporter, the session brought together an eminent panel of experts comprising:

- Shri Sabyasachi Dhar, Scientist E/Director & Head, BIS, Kolkata
- Dr. M. P. Singh, Director General, FIPPI
- Shri Amitava Sil, Scientist E, IWST, Kolkata
- Shri Ayush Gattani, Executive Director, Gattani Decor Limited

(Insightful Technical Session: BIS – Current Issues and Way Forward).

- Shri Partha Nath, Vice President, Greenply Industries Limited

The discussion offered in-depth perspectives on compliance challenges, standardization frameworks, and future regulatory pathways. It enabled constructive dialogue among stakeholders and underscored the need for continued alignment between industry practices and evolving standards.

Inauguration Of FIPPI Stall

The FIPPI stall was formally inaugurated by Smt. Meenakshi Ganeshan in the presence of Shri Rajesh Mittal. On the occasion, the latest issue of the FIPPI Journal was presented to Smt. Meenakshi Ganeshan.

(Inauguration of FIPPI Stall by Smt. Meenakshi Ganeshan, DDG BIS in the presence of Shri. Rajesh Mittal, CMD Greenply Industries & President FIPPI)

Throughout the day one of the exhibition, the FIPPI stall attracted significant footfall and served as a focal point for interaction among industry stakeholders, exhibitors, and visitors. The steady engagement reflected strong interest in FIPPI's activities and its role in addressing sectoral priorities.

Technical Session: "Growth and Rise of the East: Unfolding Opportunities"

The second day further highlighted the event as a platform for thought leadership, featuring an insightful session titled "Growth and Rise of the East: Unfolding Opportunities" by Shri Keshav Bhajanka, Executive Director, Century Plyboards (India) Ltd. and Vice President, FIPPI. The session underscored the growing importance of Eastern India as a key driver of industry expansion, highlighting emerging market potential, regional advantages, and strategic opportunities for the wood panel sector. It provided valuable perspectives for businesses looking to align with shifting geographic and economic dynamics.

(Insightful Technical Session by Shri. Keshav Bhajanka, Executive Director, Century Plyboards (India) Limited & Vice President FIPPI).

Engagement with FIPPI Members

The exhibition enabled the FIPPI team to engage closely with member companies at their respective stalls, facilitating direct and constructive interactions. These engagements strengthened institutional relationships and provided an opportunity to better understand member perspectives, challenges, and expectations.

During these interactions, the latest issue of the FIPPI Journal was shared with members, showcasing recent industry developments and key organizational initiatives. The discussions were insightful and constructive, reflecting strong alignment, a rich exchange of perspectives, and a shared commitment to the continued growth and advancement of the plywood and panel industry.

Savitri Woods India Private Limited

Jagdamba Wood Industries

Gattani Industries

R.P Wood Products Private Limited

Rushil Decor Limited

Strandply LLP

Merino Industries Limited

Interaction with Exhibitors & Industry Stakeholders

In addition to member engagement, the FIPPI team interacted extensively with a diverse cross-section of plywood and wood-panel manufacturers participating in the exhibition. Through focused, one-on-one discussions at exhibitor stalls, the team exchanged views on market trends, regulatory developments, sustainability considerations, and operational challenges.

These interactions also provided an opportunity to highlight FIPPI's ongoing initiatives in policy advocacy, standardization, and industry development. The response from exhibitors was highly encouraging, marked by active participation and strong interest in engaging with the Federation.

The dialogues reflected a shared vision and reinforced industry-wide commitment towards growth, innovation, and compliance within the sector.

(Subir Ray Chaudhuri).

(Sudama Wood Panel Private Limited) .

(Calcutta Timber Merchants Association).

(Northeast Veneers and Plywood LLP).

Amba Panel India Private Limited (Advance Ply).

(Wudlay Panel).

(Northeast Veneers and Plywood LLP).

LRB Wood Industry (Vrinda Mica).

(Saburi Panel Private Limited).

Splice Laminates Private Limited (Spliceply).

FIPPI's participation at MATECIA 2026 reaffirmed its pivotal role as the voice of the wood panel industry. The platform not only enabled constructive engagement and knowledge exchange but also strengthened collaborative efforts, enhanced industry visibility, and reinforced a collective commitment towards innovation, compliance, and long-term sectoral growth.❑

FIPPI Participation at INDIAWOOD 2026, Bengaluru

The Federation of Indian Plywood and Panel Industry (FIPPI) marked a prominent and impactful presence at INDIAWOOD 2026, held from 26 February to 2 March 2026 at the Bangalore International Exhibition Centre, Bengaluru. Recognized as one of the leading platforms for the woodworking and furniture manufacturing industry, the exhibition brought together key stakeholders, fostering dialogue, innovation, and collaboration across the value chain.

The FIPPI stall was formally inaugurated by Dr. M. P. Singh, Director General, FIPPI and Dr. C. N. Pandey, Senior Technical Advisor, FIPPI in the presence of distinguished industry leaders, including Mr. Navneet Gajjar, President, Kandla Timber Association and Mr. Rajeev Prashar, Editor, Ply Reporter. The inauguration marked the beginning of an engaging and productive participation by FIPPI at the exhibition.

(Inauguration of FIPPI Stall at INDIAWOOD Bengaluru 2026).

The opening day witnessed encouraging footfall at the FIPPI stall, with active engagement from industry stakeholders, exhibitors, and visitors representing the wood panel and furniture manufacturing sectors. These interactions provided a valuable platform to discuss industry developments, strengthen partnerships, and showcase FIPPI's ongoing initiatives towards the advancement of the Indian plywood and panel industry.

(Interaction with Visitors at FIPPI Stall on the opening day of exhibition).

The momentum continued on the second day, characterized by enthusiastic participation and vibrant industry engagement. The FIPPI team interacted extensively with visitors and business partners, deliberating on key aspects such as quality standards, regulatory developments, and future growth opportunities. The exhibition floor remained dynamic, with meaningful exchanges reinforcing the importance of collaboration in strengthening the sector.

(Active Engagement with Visitors and Industry Stakeholders on day 2 of Exhibition).

A significant highlight of Day 2 was the B2B Meeting between Plywood & Panel Manufacturers and Furniture Manufacturers, organized by FIPPI. The session served as a focused platform for deliberation on evolving product specifications, quality benchmarks, sustainability considerations, and technical expectations of the furniture manufacturing industry.

Key requirements highlighted by furniture manufacturers included calibrated plywood with high surface accuracy, birch plywood variants, pre-laminated and synchronized decorative surfaces, FSC and PEFC certified products, E0 emission-grade panels, as well as specialized MDF and Particle Board applications.

The dialogue also underscored the need to strengthen domestic supply chains to meet evolving demand patterns. Plywood and panel manufacturers reaffirmed the availability of such advanced products within the domestic market, while highlighting the importance of supply chain alignment.

(B2B Meeting between Plywood & Panel Manufacturers and Furniture Manufacturers, organized by FIPPI).

The third day of the exhibition commenced on a significant note, with Dr. M. P. Singh, Director General, FIPPI, invited to inaugurate new product (HYDROBOND) by Woodon Decor and HDHMR (MONARCH) by Tivor—an acknowledgement of the Federation's leadership and technical expertise within the industry. The day also witnessed continued momentum, with strong footfall at the FIPPI stall. The team sustained its interactions with members and exhibitors, facilitating productive exchanges and further strengthening professional networks.

(Inauguration of their new product HYDROBOND by Woodon Décor).

(Inauguration of the new product HDHMR (Monarch) by Tivor).

During the subsequent days of the exhibition, the FIPPI team visited the stalls of its member companies, engaging in meaningful interactions and constructive discussions on current industry trends, and emerging opportunities within the plywood and panel sector. These engagements served to strengthen institutional connect and deepen relationships with members, fostering a spirit of collaboration and shared purpose. During these interactions, the team also apprised members of FIPPI's ongoing initiatives and efforts towards industry development. On the occasion, specially designed FIPPI badges were presented to member representatives, symbolizing their valued association with the Federation and reinforcing a sense of identity and unity within the industry ecosystem. The interactions were highly encouraging and reflected strong mutual engagement and alignment across stakeholders.

(Action Tesa)

E3 Group

Punjab Wood Products (Black Cobra)

(ARCL Organics)

(R.P. Wood Products Pvt. Ltd.)

(Realply Industries Limited)

(Gujrat Woodlam Products Pvt. Ltd.)

(Woodon Décor)

(Gattani Industries)

Birmi Wood Products (Treelab)

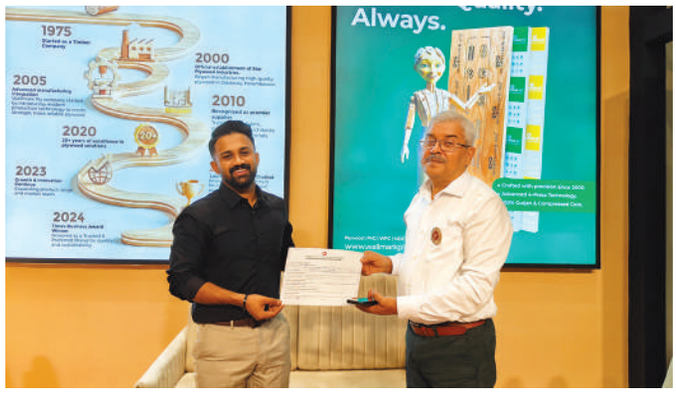
(Merino Industries Limited)

(Oswin Wood Panels Private Limited)

(Mujeeb Rehman, President, SOPMA)

The FIPPI team also undertook extensive outreach with plywood and panel manufacturers who are not yet associated with the Federation, engaging them in meaningful and constructive discussions throughout the exhibition. These interactions provided an opportunity to present a comprehensive overview of FIPPI's role as the apex industry body, along with its key initiatives, policy advocacy efforts, and contributions towards the growth, standardization, and sustainable development of the wood panel sector. The dialogue was well received, with participants showing considerable interest in understanding the benefits of association with the Federation. The engagement translated into a positive response, as several companies expressed their intent to collaborate more closely with FIPPI, and many prospective members proceeded to complete the membership formalities during the course of the exhibition. The overall response reflected a growing alignment with FIPPI's vision and reinforced its position as a unifying platform for the industry.

(Indian Timber Products Limited)



Star Plywood Industries (Wallmarkply)

(Supreme Décor LLP)

(Rock Bond Boards)

(Livspace India Private Limited)

(Abhimanya Interio Private Limited)

FIPPI's outreach efforts were met with a highly encouraging response, with participants showing keen interest and appreciation for the work undertaken by FIPPI.

(CP Veneers)

(Kairali Plywoods)

Kunnathan Chip Boards Pvt. Ltd. (K Board Ply)

(Tajpuria Industries Private Limited)

Ozone Chip Boards (Kea Boards)

(Laminar Laminates Private Limited)

Sudama Wood Panel (Motherwood)

(Tivor Private Limited)

(Saburi Panels Private Limited)

(Satyam Panel)

(Elixrr Industries Private Limited)

(Indiana Plywood)

Gravity Industries Private Limited (G Board)

Primeply Industries Limited (Wuudply)

(Kongo Plywoods)

(Airolam Limited)

(Varvo Panels LLP)

(Wheeland Lumber Company)

FIPPI's participation at INDIAWOOD 2026 reaffirmed its pivotal role as a key industry body driving growth, standardization, and innovation in the plywood and panel sector. The exhibition provided a valuable platform for engagement, knowledge exchange, and strategic dialogue, contributing to the ongoing development of a robust, competitive, and future-ready industry ecosystem.❑

BHARAT BUILDCON™

International exhibition for building materials

SUPPORTED BY

वाणिज्य एवं उद्योग मंत्रालय
MINISTRY OF COMMERCE AND INDUSTRY
सत्यमेव जयते

Government of India
Ministry of Housing and Urban Affairs
सत्यमेव जयते

SUPPORTING ASSOCIATION PARTNER

Federation Of Indian Plywood & Panel Industry

Indian Laminate Manufacturer's Association

18 19 20 21 JUNE, 2026

YASHOBHOOMI, NEW DELHI - INDIA

30,000+
Domestic Visitors

1000+
International buyers from 100+ countries.

350+
Exhibitors from across India and globe

Why **Exhibit?**

- The first exhibition of building material industry supported by the Ministry of Commerce & Industry, Government of India.
- A national platform designed to showcase India's manufacturing strength and represent the country on the global stage, aligned with the vision of One Nation, One Expo.
- Direct access to 1000+ international buyers from 100+ countries.
- Strong presence of 30000+ domestic buyers including dealers, distributors, traders developers, builders, architects, interior designers & Government Procurement Department .
- Participate in conferences and knowledge sharing seminars to gain insights of new trends, government policies, and future business opportunities.

Scan Here For Stall Booking

Sectors

1. Marble, Granite & Natural Stones
2. Hardware, Bathroom Fittings & Sinks
3. CP & Pipe Fittings
4. Timber, Plywood, Laminates, Surfaces & Flooring
5. Ceramic Tiles & Sanitary ware
6. Paints, Wall Putty & Gypsum Board
7. Cement, Steel & Lightweight Construction Blocks (AAC)
8. Modular Furniture, Office & Home Interior Solutions
9. Glue, Tile Adhesives, Grouts & Construction Chemicals
10. Electrical & Lighting Solutions
11. Electronics & HVAC
12. Glass, Windows, Door, ACP & WPC Panels
13. Renewable Energy
14. Elevators & Escalators
15. Fire Safety Systems, Surveillance & Access Control Solutions
16. Interior Décor & Exterior Cladding Solutions
17. Rubber Products & Solutions
18. Real Estate & Infrastructure Developers
19. Scaffolding & Formwork
20. Construction Tools
21. Green Building Materials
22. Concrete, Precast & Bricks
23. Modular Building Units
24. Home Automation & Smart Controls

Visitor's Profile

CO - ORGANIZER

FEDERATION OF INDIAN EXPORT ORGANISATIONS
Set up by Ministry of Commerce, Government of India

SUPPORTED BY

CAPEXIL (Sponsored by Ministry of Commerce & Industry, Govt. of India)
SEPC
EEPCINDIA
THE PLASTICS EXPORT PROMOTION COUNCIL

IN ASSOCIATION WITH

NAREDCO National Real Estate Development Council

KNOWLEDGE PARTNER

Council of Architecture
INDIAN INSTITUTE OF INTERIOR DESIGNERS

INDUSTRY PARTNER

FICCI 100

CEMENT TECHNOLOGY PARTNER

+91 72030 40408/09 info@bharatbuildcon.com www.bharatbuildcon.com

FEDERATION OF INDIAN PLYWOOD
AND PANEL INDUSTRY

Together we are stronger!

Our Primary Members

1. AK Apple Ply Pvt. Ltd.
2. Amazon Wood Pvt. Ltd.
3. Amulya Mica Industries Pvt. Ltd.
4. Archidply Industries Ltd.
5. Austin Plywood Pvt. Ltd.
6. Balaji Action Buildwell Pvt. Ltd.
7. Birmi Wood Products
8. Century Plyboards (India) Ltd.
9. Duroply Industries Ltd.
10. E3 Panels Pvt. Ltd.
11. Everest Ply & Veneers (P) Ltd.
12. Gattani Industries
13. Greenlam Industries Ltd.
14. Greenpanel Industries Ltd.
15. Greenply Industries Ltd.
16. Gujarat Woodlam Products Pvt. Ltd.
17. Hunsur Plywood Works Pvt. Ltd.
18. Jacsons Veneers And Panels Pvt. Ltd.
19. Jagdamba Wood Industries
20. Jollyboard Ltd.
21. Lalsons Plyboard Pvt. Ltd.
22. Magnus Plywood Pvt. Ltd.
23. Maheshwari Woods Private Limited
24. Mayur Panel Pvt. Ltd.
25. Merino Industries Ltd.
26. Metro Plywood Pvt. Ltd.
27. New Pragati Plywood Industries
28. Northern Plywood Products
29. Oswin Wood Panels Pvt. Ltd.
30. Palghar Plywood Products Pvt. Ltd.
31. Pashupati Veneer
32. Punjab Wood Products
33. R.P. Wood Products Pvt. Ltd.
34. Realply Industries Pvt. Ltd.
35. Riangdo Veneers Pvt. Ltd.
36. Royale Touche Laminates Pvt. Ltd.
37. Rushil Décor Ltd.
38. Savitri Plyboard India Pvt. Ltd.
39. Strandply LLP
40. Sylvan Plyboard (India) Ltd.
41. The Western India Plywood Ltd.
42. United Timber Works
43. Virgo Plywood Limited
44. Vritti Impex Pvt. Ltd.
45. Woodon Mdf Panels Pvt. Ltd.

Affiliate Members

1. All India Plywood Manufacturers Association (AIPMA)
2. All Kerala Plywood & Block Board Manufacturers Association (AKPBBMA)
3. Association of Indian Plywood Panels & Laminate Industries
4. Awadh Plywood Manufacturers Association (U.P.)
5. Delhi - NCR Plywood Manufacturers Association
6. Gujarat Plywood & Veneers Manufacturers Association
7. Haryana Plywood Manufacturers Association
8. J & K Plywood Plywood Manufacturers Association
9. Kandla Timber Association
10. North Malabar Plywood & Doors Manufacturers Association
11. Plywood Manufacturers Welfare Association (U.P.)
12. Punjab Plywood Manufacturers Association
13. Rajasthan Plywood Manufacturers Association
14. Saw Mill Owners & Plywood Manufacturers Association (SOPMA)
15. The Bengaluru Plywood Manufacturers Association
16. The Karnataka Plywood Manufacturers Association
17. The South Indian Plywood Manufacturers Association (SIPMA)
18. UK UP Plywood Association
19. Wood Technologist Association

Associate Members

1. ARCL Organics Ltd.
2. Richwood Industries Pvt. Ltd.


merino
ECONOMY ◆ EXCELLENCE ◆ ETHICS
MARINE BOARD
WATER SE
SAFE
HEALTH RAHE
GREAT
Boiling Waterproof
European E1 Emission Standard
Superior Strength
WARRANTY
12
YEARS
WARRANTY

DUROPLY®

70 Years of Excellence

Built on **Craft**, Sustained by **Trust**,

DRIVEN BY DESIGN

Marking **70 years** of quality that lasts. DURO stands for integrity and real strength on every site. From solid foundations to the final finish, DURO is the name relied on for work that stands the test of time.

The Forest Friendly Company

Duroply Industries Limited

BLOCK BOARD | PLYWOOD | VENEERS | DOORS

Toll Free: 1800-345-3876 | **Website:** www.duroply.in

E-mail: corp@duroply.com

action TESA®
KOI NAHI AISA

TESA INTELLIGENCE

TESA INSIDE

TESA CONNECT

TESA SALAAM

TESA TRUST

TESA 5 PILLARS

What makes Action TESA - Koi Nahi Aisa

At their core, these 5 TESA Pillars shape a larger philosophy, giving the brand a distinctive and enduring presence. Its identity is defined by what it delivers, the values it lives by, and the standards it consistently upholds. Together, they serve as the North Star, a guiding light for Action TESA.

100% TECHNICAL GRADE UREA USED
action TESA KOI NAHI AISA
ETHICS IS OUR FIRST INGREDIENT
*****

HDHMR BOARD | BOILO BWP BOARD | MDF BOARD | PARTICLE BOARD | FLOORING | DOORS

Customer Care Service: **1800 309 0707**
customerservices@actiontesa.com

Greenply
HAR ZARURAT KA REPLY

GREENPLY SETS A WORLD RECORD.

Thank you INDIA

Fuelled by millions of wishes from across the country, **#WishForVishwaCup** by Greenply converted emotions into a monumental milestone by creating the World's Most Wished Cricket Bat.

For over four decades, Greenply has been shaping India's interiors, and this time, **with one bat, a billion hearts and one big world record,** it has shaped a moment of collective pride.

Greenply | PLYWOOD | MDF | VENEERS | DOORS | PVC

www.greenply.com | Toll-free number: 1800-103-4050

SCAN TO WITNESS HISTORY IN THE MAKING.