

Voice of FIPPI

INDIAN WOOD & ALLIED PANELS

A Quarterly Journal on Plywood and Panel Industry

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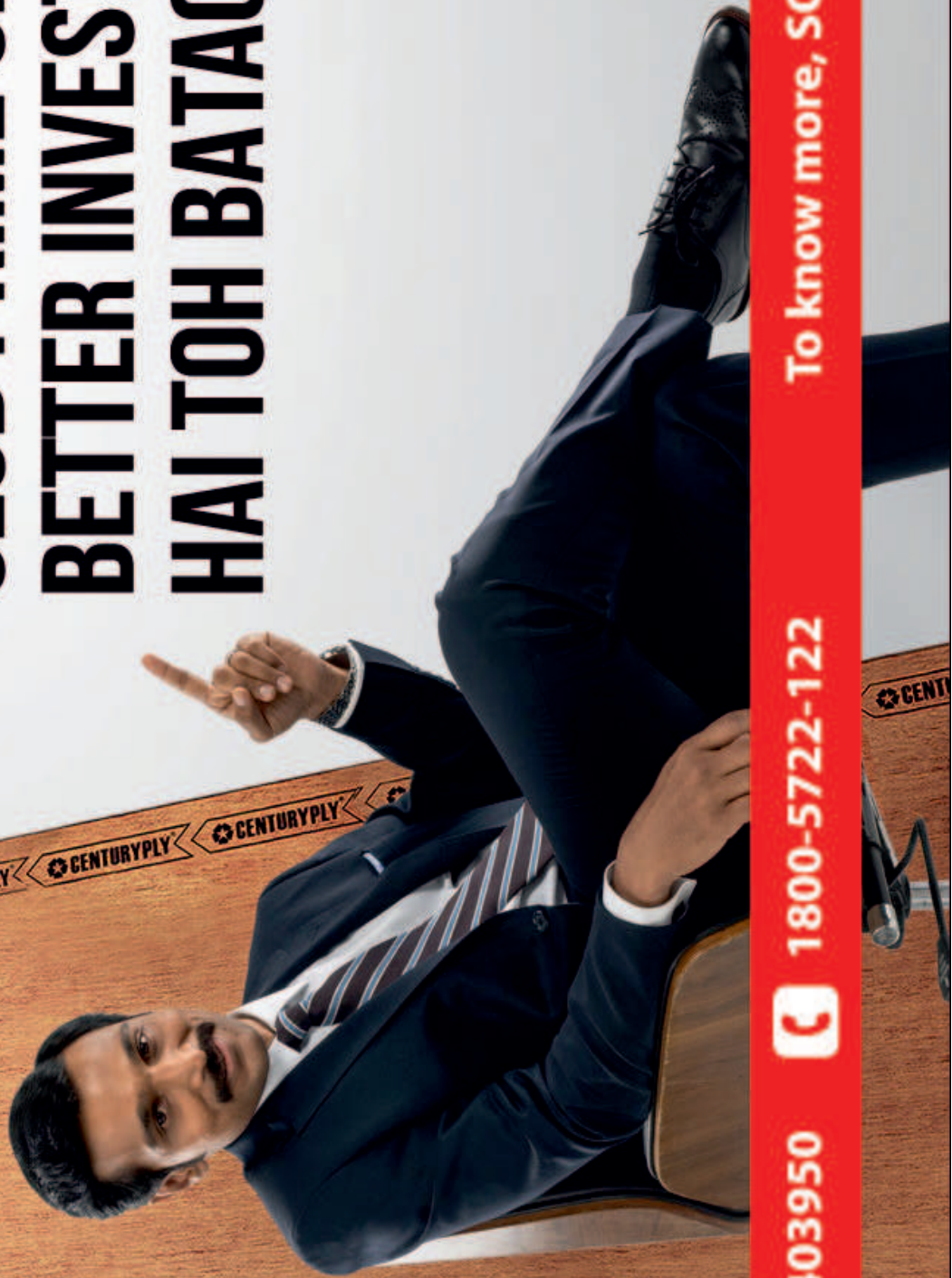
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FEDERATION OF INDIAN PLYWOOD
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CHAIRMAN, CENTURY PLYBOARDS (INDIA) LTD.



It is a great honour to Federation of Indian Plywood & Panel Industry (FIPPI) that our President from 2004-2024 and now Chief Patron has been conferred the prestigious Padma Shri award for his tireless, invaluable and immense contribution for the benefit of the Plywood & Panel Industry in his long tenure as President FIPPI.

A Visionary Leader and Industrial Pioneer



Sajjan Bhajanka is a name synonymous with industrial transformation, innovation, and social progress. His journey from humble beginnings to becoming a trailblazer in India's plywood and cement industries is a testament to resilience, foresight, and an unwavering commitment to nation-building. His contributions extend beyond business, fostering economic growth, employment generation, and sustainable industrial practices.

Industrial Leadership & Entrepreneurial Journey

Starting with a modest veneer production unit in Tinsukia, Assam, Sajjan Bhajanka's entrepreneurial acumen led to the co-founding of Century Plyboards (India) Ltd. in 1986. Under his leadership, CenturyPly has become India's top manufacturer of plywood, MDF, laminates, and particle boards, with eight state-of-the-art manufacturing facilities and an ambitious turnover target of ₹12,000 crore by 2031. His commitment to quality, innovation, and sustainable

practices has positioned CenturyPly as an industry leader.

Expanding his industrial footprint, he co-founded Shyam Century Ferrous Ltd. and played a crucial role in establishing Star Cement Ltd. in 2000, now a leading cement manufacturer in Northeast India. Under his stewardship, Star Cement is set to double its production capacity beyond the region. His ventures in shipping, logistics, and lighting industries further cement his reputation as a multifaceted business leader. Collectively, his enterprises have generated employment for over 20,000 individuals, directly and indirectly benefiting thousands more.

As President of the Federation of Indian Plywood & Panel Industry (FIPPI) from 2004 to 2024

In the last nearly two decades many initiatives taken by Mr. Sajjan Bhajanka, as President, FIPPI in promoting the use of agroforestry and trees outside forests (TOFs) to ensure raw material sustainability, significantly impacted

the industry by restricting raw material extraction from natural forests. As a Indian Plywood Industry Research and training Institute (IPIRTI) board members and Chairman of the IPIRTI Research Advisory Committee several steps were suggested by him to enhance productivity, reduce waste, and improve the quality of wood-based products. The President FIPPI worked closely with various government bodies, including the Ministry of Environment, Forest and Climate Change (MoEF&CC) and the Department of Industry, to address policy concerns. During the period FIPPI played a vital role in aligning Indian plywood & panel products BIS standards with international benchmarks, facilitating global competitiveness. FIPPI focuses on promoting TOFs, engaging in public-private partnerships, and enhancing the skills and capacity of industry workers. The organization also champions eco-certifications and the use of alternative materials like medium-density fibre board (MDF) and particle board to reduce pressure on forests. He has been instrumental in policy advocacy, promoting sustainable resource management, and fostering technological innovation in the sector. The federation continues to represent the collective interests of the plywood and panel industries, ensuring their alignment with national and global environmental goals. His collaborative efforts with the government helped align BIS standards with international benchmarks, ensuring global competitiveness.

Contributions to Education and Social Welfare

Beyond business, Sajjan Bhajanka has made remarkable contributions to education and social welfare. As a co-promoter of the Kalyan Bharati Trust, he played a pivotal role in establishing prestigious institutions like The Heritage School, Heritage Institute of Technology, Heritage Business School, and Heritage Law College in Kolkata. His dedication to education also led to his association with the Friends of Tribals Society (FTS), where as All-India President (2009-2015), he expanded the One-Teacher School initiative from 23,000 to 47,000 schools, providing basic education to underprivileged tribal children.

His involvement in healthcare is equally commendable. As President of the Marwari Relief Society (2000-2015) and its President-Emeritus, he played a crucial role in improving healthcare services in Kolkata. He also serves as Chairman, Board of Governors of NITTTTR, Kolkata, and has been actively involved with institutions such as National Institute of Technology (NIT), Meghalaya.

Environmental and Policy Advocacy

Recognizing the need for sustainable resource management, Sajjan Bhajanka championed the promotion of agroforestry and Trees Outside Forests (TOFs) to ensure raw material sustainability in the plywood industry. As an IPIRTI Board Member and Chairman of the IPIRTI Research Advisory Committee, he advocated for productivity enhancements, waste reduction, and quality improvements in wood-based products.

Under his leadership, FIPPI collaborated with the Ministry of Environment, Forest and Climate Change (MoEF&CC) and the Department of Industry to shape policies that balance industrial growth with environmental conservation. His push for eco-certifications and the adoption of alternative materials like MDF and particle boards has significantly reduced pressure on natural forests.

Honors and Recognition

Shri Sajjan Bhajanka's exceptional contributions have been widely recognized. Among his many accolades are:

- Life-Time Achievement Award in Social Welfare (2003)
- Rotary Pride of Industry Award (2009-2010)
- Haryana Udyogpati Ratna Award (2012)
- Best CEO Award by Business Today (2023)
- Honorary D.Litt. from Assam Down Town University (2018) and Royal Global University (2022)

His crowning achievement came in 2025, when he was conferred the prestigious Padma Shri Award for his outstanding contributions to India's plywood and panel industry. This national recognition underscores his relentless pursuit of excellence and service to the nation.

Legacy and Philosophy

Despite his vast responsibilities, Sajjan Bhajanka remains deeply connected to his family. He credits his success to the unwavering support of his wife, Smt. Santosh Bhajanka, and cherishes time with his children and grandchildren. He believes in instilling values of integrity, hard work, humility, and compassion in the next generation.

His guiding principle, 'Sarvada Sarvottam' (The Best - Always), is not just a motto but a way of life. Through his relentless dedication to industry, education, and philanthropy, Shri Sajjan Bhajanka continues to inspire generations, proving that with vision and determination, the sky is the limit. □



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Transforming India's Wood-Based Panel Industry: The Impact of QCO 2025 on Quality, Safety, and Global Competitiveness



Rajesh Mittal, President, Federation of Indian Plywood & Panel Industry (FIPPI)

Introduction

The Department for Promotion of Industry and Internal Trade (DPIIT) first issued a notification in 2023 to implement the Quality Control Order (QCO) for plywood and panel products, aligning with the Prime Minister's "Make in India" vision of zero defects, zero effect, and adherence to international standards. Acknowledging industry concerns and the need for preparedness, DPIIT granted a one-year extension before mandating compliance. In 2024, it reaffirmed QCO implementation with definitive enforcement dates set for February 11 and February 28, 2025, covering different categories of plywood, Medium-Density Fibreboard (MDF), and Particle Board.

This initiative is part of a broader regulatory framework under which QCOs now apply to over 750 product categories, ensuring adherence to stringent quality benchmarks across industries. It aims to strengthen domestic manufacturing, enhance consumer safety, and establish India as a global hub for high-quality standardized products.

With the plywood sector growing at a Compound Annual Growth Rate (CAGR) of 6.74% and MDF & Particle Board projected to expand at an impressive 15–20% CAGR in the coming years, the Federation of Indian Plywood and Panel Industry (FIPPI) has played a pivotal role in facilitating smooth QCO implementation. Collaborating with industry associations across states, FIPPI has ensured stakeholders are well-prepared for compliance.

Previously, the absence of mandatory certification led to substandard materials and manufacturing practices, reducing product lifespan and necessitating frequent replacements. The DPIIT and the Bureau of Indian Standards (BIS) have now addressed these concerns by enforcing the QCO 2024 for Wood-Based Boards, Plywood for General Purposes, Block Boards, MDF, Particle Boards, and Wooden Flush Door Shutters. Effective from February 2025, all manufacturers must obtain BIS certification, ensuring their products meet Indian Standards and bear the Standard Mark for quality assurance. BIS will oversee certification and enforcement, with

non-compliance subject to penalties under the BIS Act, 2016.

This regulatory milestone is set to transform the wood-based panel industry by enhancing product quality, ensuring consumer safety, strengthening domestic manufacturing, and fostering greater market confidence. The QCO will also improve market accessibility for certified products and enhance their global competitiveness. By standardizing quality, this initiative benefits multiple stakeholders, including consumers, manufacturers, builders, architects, and exporters, ensuring reliability, durability, and trust in certified wood-based products.

Key Benefits of QCO Implementation

1. Protecting Consumer Interests and Ensuring Product Safety

The enforcement of the QCO guarantees that plywood, MDF, and particle boards meet stringent quality parameters. This protects consumers from health hazards and structural failures caused by substandard materials. Inferior products often lead to furniture breakages, warping, and safety risks in construction. The QCO enhances consumer confidence by ensuring that all products in the market are safe, durable, and manufactured using high-quality raw materials.

2. Guaranteeing Compliance with BIS Standards

The mandatory adherence to BIS regulations ensures that all wood-based panel products comply with well-defined quality norms. This uniformity across the industry eliminates non-standard products from the market, ensuring consistency and reliability. By standardizing product quality, the QCO contributes to safer construction materials and better-performing furniture, reinforcing trust among buyers.

3. Strengthening Market Credibility of Certified Products

Consumers prefer certified products because they offer assurance of quality and durability. The QCO helps build trust by eliminating uncertified products and promoting BIS-certified materials. As a result, demand for reliable plywood, MDF, and particle boards increases, strengthening the reputation of compliant manufacturers and encouraging investments in the industry.

4. Preventing the Influx of Inferior and Counterfeit Products

The Indian market has witnessed a surge in low-

quality and counterfeit plywood or MDF products that compromise safety. The QCO serves as a regulatory safeguard, ensuring that only genuine, high-quality materials are available. By restricting non-compliant products, it reduces risks associated with structural failures, toxic adhesives, and poor durability.

5. Encouraging Domestic Manufacturers to Improve Product Quality

Strict quality control measures compel manufacturers to adopt superior production processes and upgrade technology. Compliance with the QCO pushes manufacturers toward innovation and efficiency, resulting in an overall improvement in product quality. This benefits both the industry and consumers by creating a competitive market focused on excellence.

6. Facilitating Global Market Entry with Certified Products

International buyers prioritize certified products that align with global quality benchmarks. By enforcing BIS standards domestically, the QCO ensures that Indian plywood, MDF, and particle board manufacturers produce export-worthy goods. This strengthens India's position as a competitive supplier in international markets, boosting export potential and economic growth.

7. Discouraging any Players Who Compromise on Quality

Unregulated or small-scale manufacturers often compromise on quality to cut costs. The QCO acts as a deterrent, ensuring that only compliant businesses operate in the market. This creates an organized and structured industry where quality and safety take precedence over cost-cutting measures.

8. Creating a Level Playing Field for All Manufacturers

By enforcing uniform quality standards, the QCO eliminates unfair advantages that some manufacturers might have gained by producing inferior products. This fosters healthy competition between small-scale and large manufacturers, encouraging sustainable industry growth while ensuring fairness in the market.

Enhancing Construction, Architecture, and Furniture Sectors

1. Strengthening Structural Integrity and Design Reliability

Architects and builders rely on high-quality plywood,

MDF, and particle boards for safe and durable structures. The QCO ensures that these materials meet BIS standards, reducing risks such as warping, swelling, or premature failure. This results in longer-lasting constructions and interiors, enhancing overall safety and reliability.

2. Ensuring Fire and Moisture Resistance for Safer Constructions

In high-rise buildings, hospitals, and commercial spaces, fire-retardant and moisture-resistant plywood and MDF are crucial. The QCO mandates adherence to safety standards that enhance these properties, preventing potential hazards. By ensuring compliance, the regulation helps builders design safer, regulation-compliant structures while minimizing maintenance costs.

3. Enhancing Quality in the Furniture Industry

The furniture industry relies on wood-based panels for mass production. Substandard materials lead to customer dissatisfaction due to breakages, termite infestations, and poor finishing. By enforcing QCO regulations, manufacturers produce stronger, better-bonded, and aesthetically superior furniture-grade materials. This results in longer-lasting furniture that meets both domestic and export standards.



4. Elevating India's Global Standing in the Wood-Based Industry

With international markets demanding high-quality wood-based products, QCO compliance aligns Indian plywood, MDF, and particle board products with global standards. This enhances India's reputation as a reliable supplier, attracting international buyers and boosting economic growth. Strengthening the wood-based industry also creates employment opportunities and drives technological advancements in manufacturing processes.

Educating Key Stakeholders for Effective Implementation

To maximize the benefits of QCO compliance, it is essential to educate and inform government bodies, builders, and professionals about its significance. Key focus areas include:

- **Public Works Department (PWD) & Central Public Works Department (CPWD):** Ensuring that government infrastructure projects use certified materials for enhanced longevity and safety.
- **Builders' Associations:** Encouraging real estate developers to adopt quality-certified materials for improved construction outcomes and consumer trust.
- **Institution of Engineers & Architects:** Training professionals on the advantages of QCO-certified products, enabling them to integrate these standards into their designs and projects.

Conclusion: Driving Industry Growth through Quality Regulation

The implementation of the QCO represents a transformative step for India's wood-based panel industry. It not only safeguards consumers but also strengthens the furniture, construction, and architectural sectors by ensuring material consistency, safety, and long-term durability. Additionally, it enhances India's global competitiveness, fostering exports and economic expansion.

For maximum impact, it is crucial to promote widespread awareness and adoption among industry stakeholders. Government agencies, manufacturers, and trade bodies must work together to enforce and educate about QCO compliance. By doing so, India can establish itself as a global leader in high-quality wood-based panel manufacturing, benefiting both domestic and international markets while ensuring consumer safety and satisfaction. □



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EXTRAORDINARY

PART II—Section 3—Sub-section (ii)

PUBLISHED BY AUTHORITY

No. 1245]

NEW DELHI, TUESDAY, MARCH 12, 2024/PHALGUNA 22, 1945

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

ORDER

New Delhi, the 12th March, 2024

S.O. 1307(E).—In exercise of the powers conferred by section 16 read with section 17 and sub-section (3) of section 25 of the Bureau of Indian Standards Act, 2016 (11 of 2016) and in supersession of the Wood Based Boards (Quality Control) Order, 2023, except as respects things done or omitted to be done before such supersession, the Central Government, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following Order, namely:-

1. Short title and commencement. - (1) This Order may be called the Wood Based Boards (Quality Control) Order, 2024.

(2) It shall come into force with effect from the 11th February, 2025:

Provided that in respect of small enterprise, as defined under the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), it shall come into force with effect from the 11th May, 2025:

Provided further that in respect of micro enterprises, as defined under the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), it shall come into force with effect from the 11th August, 2025.

2. Compulsory use of Standard Marks.- Goods or articles specified in column (1) of the Table shall conform to the corresponding Indian Standard specified in column (2) of the Table and shall bear the Standard Mark under a licence from the Bureau as per Scheme-1 of Schedule-II of the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018:

Provided that nothing in this order shall apply to goods or articles manufactured domestically meant for export.

3. Certification and enforcing authority.- The Bureau shall be the certifying and enforcing authority for the goods or articles specified in column (1) of the Table.

4. Penalty for contravention. - Any person who contravenes the provisions of this order shall be punishable under the provisions of the Bureau of Indian Standards Act, 2016.

TABLE

Goods or articles (1)	Indian Standard (2)	Title of Indian Standard (3)
Wood Based Boards	1659:2004	Block boards
	12823:2015	Prelaminated particle boards from wood and other Lignocellulosic material
	3087:2005	Particle boards of wood and other lignocellulosic materials (medium density) for general purposes
	12406:2021	Medium density fibre boards for general purpose
	3097:2006	Veneered particle boards

Note.- For the purposes of this Table, the latest version of Indian Standards including the amendments thereof, as notified by the Bureau from time to time shall apply.

[F. No. P-14031/21/2023-CI]
SANJIV, Jt. Secy.


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EXTRAORDINARY

PART II—Section 3—Sub-section (ii)

PUBLISHED BY AUTHORITY

No. 1311]

NEW DELHI, FRIDAY, MARCH 15, 2024/PHALGUNA 25, 1945

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

ORDER

New Delhi, the 15th March, 2024

S.O. 1377(E).—In exercise of the powers conferred by section 16 read with section 17 and sub-section (3) of section 25 of the Bureau of Indian Standards Act, 2016 (11 of 2016) and in supersession of the Plywood and Wooden flush door shutters (Quality Control) Order, 2023, except as respects things done or omitted to be done before such supersession, the Central Government, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following order, namely:-

1. Short title and commencement. - (1) This order may be called the Plywood and Wooden flush door shutters (Quality Control) Order, 2024.

(2) It shall come into force with effect from the 28th February, 2025:

Provided that in respect of small enterprise, as defined under the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), it shall come into force with effect from the 28th May, 2025:

Provided further that in respect of micro enterprises, as defined under the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), it shall come into force with effect from the 28th August, 2025.

2. Compulsory use of Standard Marks.—Goods or articles specified in column (1) of the Table shall conform to the corresponding Indian Standard specified in column (2) of the Table and shall bear the Standard Mark under a licence from the Bureau as per Scheme-1 of Schedule-II of the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018:

Provided that nothing in this order shall apply to goods or articles manufactured domestically meant for export.

3. Certification and enforcing authority.—The Bureau shall be the certifying and enforcing authority for the goods or articles specified in column (1) of the Table.

4. Penalty for contravention. - Any person who contravenes the provisions of this order shall be punishable under the provisions of the Bureau of Indian Standards Act, 2016.

TABLE

Goods or articles (1)	Indian Standard (2)	Title of Indian Standard (3)
Plywood and Wooden flush door shutters	303:1989	Plywood for general purposes
	2202 (Part 1):	1999 Wooden flush door shutters (solid core type) - Plywood face panels
	710:2010	Marine plywood
	5509:2021	Fire retardant plywood
	1328:1996	Veneered decorative plywood
	2191 (Part 2):2022	Wooden flush door shutters (cellular and hollow core type) - Particle board and hardboard face panels,
	2191 (Part 1):2022	Wooden flush door shutters (cellular and hollow core type) - Plywood face panels
	2202(Part 2): 2022	Wooden Flush Door Shutters (Solid core type) - Particle Board, High Density Fibre Board, Medium Density Fibre Board and Fibre Hardboard Face Panels
	4990: 2011	Plywood for concrete shuttering works - Specification
	10701: 2012	Structural plywood - Specification

Note. - For the purposes of this Table, the latest version of Indian Standards including the amendments thereof, as notified by the Bureau from time to time shall apply.

[F. No. P-14031/9/2023-CI]
SANJIV, Jt. Secy.



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EXTRAORDINARY

PART II—Section 3—Sub-section (ii)

PUBLISHED BY AUTHORITY

No. 797]

NEW DELHI, FRIDAY, FEBRUARY 14, 2025/MAGHA 25, 1946

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

ORDER

New Delhi, the 13th February, 2025

S.O. 801(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, namely:-

1. Short title and commencement. – (1) This order may be called the Furniture (Quality Control) Order, 2025.

(2) It shall come into force on the expiry of twelve month from the date of publication of this notification.

2. Compulsory use of Standard Mark. – Goods or articles specified in column (1) of the Table shall conform to the corresponding Indian Standard specified in column (2) of the Table and shall bear the Standard Mark under a license from the Bureau of Indian Standards as per Scheme-I of Schedule-II to the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018:

Provided that nothing in this order shall apply to goods or articles manufactured domestically for export:

Provided further that nothing in this order shall apply to micro and small enterprises as defined in clauses (h) and (m) respectively of section 2 of the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), till the expiry of eighteen months from the date of publication of this notification:

Provided also that nothing in this order shall apply to goods or articles manufactured domestically by an enterprise, registered under “Udyam Portal” of the Ministry of Micro, Small and Medium Enterprises, wherein the investment in plant and machinery or equipment at original cost does not exceed twenty-five lakh rupees and the turnover does not exceed two crore rupees for the previous financial year as certified by a Chartered Accountant shall be exempted from implementation of this order.

3. Certification and enforcing authority. –The Bureau shall be the certifying and enforcing authority for the goods or articles specified in the Table.

4. Penalty for contravention.—Any person who contravenes the provisions of this order shall be punishable under the provisions of the Bureau of Indian Standards Act, 2016.

TABLE

Goods or articles (1)	Indian Standard (2)	Title of Indian Standard (3)
Furniture	17631:2022	Work chairs
	17632:2022	General purpose chairs and stools
	17633:2022	Tables and desks
	17634:2022	Storage units
	17635:2022	Beds
	17636:2022	Bunk beds

Note.- For the purposes of this Table, the latest version of Indian Standards including the amendments thereof, as notified by the Bureau of Indian Standards from time to time, shall apply.

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

FIPPI's Persistent Efforts Lead to Stronger Enforcement of QCOs

In March 2025, the Federation of Indian Plywood and Panel Industry (FIPPI) raised a critical concern regarding the illegal import of plywood and panel products, particularly through the Birtamode - Panitaki border, despite the enforcement of the Quality Control Orders (QCOs) on these products since February 2025. FIPPI addressed this issue by writing to the Chairman of the Central Board of Indirect Taxes & Customs (CBIC), urging immediate action to halt these illegal imports.

Recognizing that the QCOs were not being properly enforced, the Department for Promotion of Industry and Internal Trade (DPIIT) intervened by issuing a letter to the CBIC, emphasizing the urgent need for strict enforcement of the QCOs. DPIIT also sent a separate communication specifically addressing the plywood and panel industry, urging CBIC to take the necessary steps to ensure strict enforcement of QCOs on plywood and panel products.

FIPPI's timely and decisive advocacy successfully prompted a strong governmental response. This highlights the government's strong commitment to the strict enforcement of the QCOs, ensuring that only standardized products enter the Indian market. □



FEDERATION OF INDIAN PLYWOOD & PANEL INDUSTRY

REGISTERED UNDER THE SOCIETIES REGISTRATION ACT XXI OF 1860, REGN. NO. S/2885/1968-69 DT. 4.1.1969

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Mr. Jkesh Thakkar
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Director General
Dr. M.P. Singh

FIPPI/18A-1-2024-25

March 13, 2025

To
Shri Sanjay Kumar Agarwal
Chairman
Central Board of Indirect Taxes & Customs
Department of Revenue, Ministry of Finance
North Block, New Delhi

Subject: Non adherence to Quality Control Orders for Plywood and other Wood boards at Custom entry points-Compliance through EDI

Dear Sir,

Apropos to above subject kindly find the Plywood and Wooden flush door shutters (Quality Control) Order, 2024, coming into effect from the 28th February, 2025 and the Wood Based Boards (Quality Control) Order, 2024 with effect from the 11th February, 2025 for kind perusal. However there is evidence that such material with HS code 4412 is getting entry from custom check points for example (Panitanki, Naxalbari), West Bengal).

Undersigned visited the office of Principal Commissioner (Preventive) Kolkata on 12.03.2025 for find out the gaps/issues related to the communication/compliance of said Quality Control Orders. It emerged that Electronic Data Interchange (EDI) has not been made compliant with the said QCOs.

Therefore different custom check points are making their own interpretation to allow entry of Non-BIS products into the country.

Therefore, it is requested to look into the matter at utmost urgency.

With regards,

Dr MP Singh (Retd IFS)
Director General, Federation of Indian Plywood and Panel Industry

Copy to:-

1. Shri Mohan Kumar Singh
Member (Compliance Management), Central Board of Indirect Taxes & Customs.
North Block New Delhi
2. Shri Vinayak Azad
Principal Commissioner of Customs (Preventive), Kolkata
3. Shri Baswaraj Nalegave
Principal Additional Director General NCTC,
DGARM Mumbai

F. No.: No. P-29014/33/2025-LEI

Government of India
Ministry of Commerce & Industry
Department for Promotion of Industry and Internal Trade
(Light Engineering Industry Section)
Vanijya Bhawan, New Delhi

Date: 19th March, 2025

To,
The Chairman,
Central Board of Indirect Taxes and Customs
Department of Revenue, Ministry of Finance
North Block, New Delhi
Email: chmn-cbic@gov.in

Subject: Representations received from various Industry/ Industry Associations/ Organisations on implementation of Quality Control Order (QCOs) notified by DPIIT-reg.

Sir,

This Department has received from various Industry/ Industry Associations/ Organisations on implementation of Quality Control Order (QCOs) notified by DPIIT.

2. It is to inform that the DPIIT has introduced several relaxations for easier implementation of the QCOs, however those are sometimes misused/misinterpreted by few vested interest groups. Therefore, we would like to clarify the following:

- a. As regards to imports, the date of implementation indicated in the QCO for the large and medium enterprises should be considered. Only BIS marked products or non-BIS marked products with specific exemption stipulated in the QCO or specific NoC issued by DPIIT may be permitted for imports after the said date.
- b. The goods landing at Indian ports on or after the due date must comply with the requirements of Quality Control Order.
- c. The additional time period of 6 months and 3 months provided to Micro and Small Enterprises over and above the date of implementation for large and

medium enterprises, respectively under the QCOs does not apply to imports. This relaxation is meant for obtaining BIS licenses under the Conformity Assessment Rules of BIS considering their lack of adequate managerial and financial capabilities.

- d. Specific exemptions have been included in certain QCOs for imports of non-BIS marked products for certain specific purpose/conditions which inter alia includes the following: for the purpose of research & development (R&D); for use as spares for after sales & service and End of life models; for use/fitting into export product against valid export orders; non-availability in domestic market in adequate quantity and specific quality etc.
3. In addition to above, it is to inform that LEI section vide letter dated 12.02.2025 (copy enclosed) addressed to Customs House, Mundra has also clarified the applicability of the QCO.
 4. This issues with the approval of competent authority.

Encls: as above

Yours faithfully,



(Dheeraj Kumar Meena)

Under Secretary to the Govt. of India

Email: dheeraj.meena17@gov.in

Copy to:

Principal Commissioner, Customs, Kolkata

Principal Commissioner, Customs, Mundra

All Industry Associations

No. P-14014/1/2025--C. I (E- 209775)

भारत सरकार/ Government of India

वाणिज्य एवं उद्योग मंत्रालय/ Ministry of Commerce & Industry

उद्योग संवर्धन और आंतरिक व्यापार विभाग/

Department for Promotion of Industry and Internal Trade

उपभोक्ता उद्योग अनुभाग

(Consumer Industry Section)

Vanijya Bhawan, New Delhi

Date: 1st April, 2025

OFFICE MEMORANDUM

Subject: Non adherence to Quality control Orders for Plywood and other Wood boards at Custom entry points, Compliance through EDI- reg.

The undersigned is directed to inform that there are multiple representations received in this department from the industry association's – representation letter dated 13.03.2025 from Federation of Indian Plywood and Panel Industry (FIPPI) and representation letter dated 07.03.2025 from Association of Indian Plywood Panels and Laminate Industries (AIPLI), whereby it has been informed about the illegal imports of Plywood particularly, from the Birtamode - Panitaki border (Indo- Nepal) border are happening since the effective implementation of Quality Control Orders.

2. It is to inform that this department vide its e-gazette notification has published Quality Control Orders for Plywood and Wood based products, namely Plywood and Wood Flush Doors (Quality Control) Order, 2024 and Wood Based Boards (Quality Control) Order, 2024, which are in force since 28th February 2025 and 11th February 2025 respectively.

3. In view of the above, Central Board of Indirect Taxes & Customs (CBIC) is requested to take necessary steps for strict compliance and enforcement of above-mentioned Quality Control Orders:

Encls. As Above


(Dheeraj Kumar Meena)

Under Secretary to the Govt. of India

Email: dheeraj.meena17@gov.in

Tel. No.- 011 23038952

To,

The Chairman,

Central Board of Indirect Taxes & Customs (CBIC)

Department of Revenue, Ministry of Finance

North Block, New Delhi, Email: chmn-cbic@gov.in

Copy to:

1. The Bureau of Indian Standards (BIS), Manak Bhawan, New Delhi, Email: scgc@bis.gov.in
2. Federation of Indian Plywood and Panel Industry (FIPPI), email: fippi@fippi.org
3. Association of Indian Plywood Panels and Laminate Industries (AIPLI), email: sonuagarwal2005@yahoo.in

Challenges in the Implementation of Quality Control Order for Plywood and Panel Industry: Meeting with the Director General, Bureau of Indian Standards (BIS)

Members Present:

1. Shri Pramod Kumar Tiwari, IAS - Director General, BIS
2. Shri H.J.S. Pasricha - Scientist-G & DDG Certification
3. Shri Jaydeep Chitlangia - Senior Vice President, FIPPI
4. Dr. M.P. Singh - Director General, FIPPI
5. Dr. Puroshottam Sharma - R&D Head, Green Panel Industries Ltd.
6. Shri Sandeep Gupta - Northern Plywood
7. Shri Aditya Gupta - Northern Plywood
8. Dr. Richa Bansal - Senior Research Analyst, FIPPI
9. Shri Anthony Fernandes - Office Secretary, FIPPI

A. INTRODUCTION

The Federation of Indian Plywood & Panel Industry (FIPPI) requested a meeting with the Director General of BIS, which was scheduled on 20th March 2025.

B. DISCUSSION POINTS

Delay in Publication of Standards

FIPPI raised concerns regarding the delay in the publication of the standard, IS:303 (including revised amendments) and other revised standards approved by the Chairman, CED 20. BIS informed the attendees that IS:303 (Revised) would be issued within the next one or two days, with other related standards to be published shortly thereafter.

Key Concerns and Requests Regarding Cluster Lab Formation Guidelines and Post-QCO Implementation:

FIPPI proposed the establishment of Cluster Labs and expressed its support for this initiative. Director General, BIS informed that any number of industries can come up to set up their cluster lab by providing an undertaking, upon which BIS will grant recognition to the Cluster Lab. However, BIS made it clear that it will not provide any funding for setting up these labs. The Director General (DG) stated that cluster labs can apply for recognition on the BIS portal, and once approved, BIS will recognize them as in-house laboratories.

Cluster Labs are intended for internal testing and can be located within 40 to 50 km from the manufacturing site to help reduce operational costs. BIS emphasized that the primary purpose of testing is to ensure quality compliance, and manufacturing units must clearly specify their scheme of testing including which tests will be conducted internally and which will be outsourced. Frequency of testing can be variable and should also be communicated to BIS.

BIS also highlighted that many SSI/Micro units have yet to complete their registration. To promote awareness and encourage compliance, BIS emphasized on organizing capsule courses free of cost.

Additionally, the Director General informed that BIS currently lacks comprehensive data on testing facilities. To address this, they are developing a GIS portal that will provide relevant information on the location of testing labs.

Members also met Shri N. Suryanarayana, Scientist-F, Central Marks Department (CMD)-III, to discuss issues related to Product Manuals for plywood and panel products. During the discussion, Dr.Puroshottam Sharma highlighted concerns regarding sampling criteria in the Product Manual, marking and storage of products, where manufacturers often face challenges due to negligence.

In response, Shri N. Suryanarayan provided details about the relaxation given to the manufacturers with respect to the frequency of testing based on individual confidence level. He also emphasized the need for greater awareness and dealer education to address these issues effectively. He suggested that industry stakeholders should work towards informing and training dealers on proper handling and storage practices to prevent unnecessary setbacks for manufacturers. Shri N. Suryanarayana also agreed to organize a webinar to provide a better understanding of the Product Manual and to increase awareness among manufacturers.

High Marking Fees:

The implementation of 100% ISI marking has significantly increased financial pressure, increasing marking fees approximately fourfold for plywood and by 30 to 40 times for MDF and particleboard compared to previous rates.

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Request: Reduce marking fees for sustainable operations in accordance with plant capacity.

No Guidelines for Non-Compliant Products:

There are currently unclear handling, storage, and disposal policies since grading is performed after printing the boards.

Request: Establish clear BIS guidelines for the management, storage, and sale of such products.

Illicit infiltration substandard product through Nepal border:

Non-compliant and unlicensed products continue to receive customs clearance and are being imported and sold in the Indian market. This remains a significant challenge, as it undermines industry standards, regulatory compliance, and fair competition.

Request: Strengthen enforcement measures and take prompt action against such practices.

Members also raised concerns regarding unlawful imports through Bhatta, near the Sitamarhi-Patna border, where plywood trucks from Nepal have reportedly been given clearance for entry into India. It was also mentioned that two to three units have obtained BIS licenses, yet there has been a lack of information regarding these imports after 28th February, 2025. This issue needs immediate attention and stricter regulatory oversight to prevent unauthorized imports and ensure compliance with BIS standards.

BIS acknowledged that there is some confusion regarding the recent notification, as it is still in the initial and advanced stages of implementation. They noted that some officers may not yet be fully aware of the new regulations, which could be contributing to the issue. However, BIS assured that if such cases are reported in a timely manner, appropriate action, including confiscation of non-compliant imports, can be taken. Additionally, DPIIT has also provided clarification on this matter, stating that the issue is likely due to initial ignorance and will be resolved over time as awareness and enforcement improve.

Frequent Sampling Burden:

The requirement for quarterly testing places a significant operational strain on manufacturers.

Request: Revise the sampling frequency to half-yearly or yearly based on prior performance.

Addressing Non-Compliance Issues Post-Production:

Concerns were raised about compliant panel products becoming non-compliant at the dealer or consumer level due to improper storage practices, maintenance of storage conditions, or incorrect applications.

Request: Develop guidelines on how to address and maintain such conditions effectively.

Revision of Product Manual:

FIPPI requested a revision of the product manual to better align with industry production processes. Dr. M.P. Singh proposed to organize a webinar to address the lack of awareness on this issue. BIS supported the initiative, stating that they would organize a webinar to educate manufacturers and clarify any doubts regarding the product manual.

C. CONCLUSION

The meeting served as a crucial platform for open dialogue on the challenges faced by the plywood and panel industry concerning the Quality Control Order. The Director General and BIS representatives acknowledged the industry's concerns and assured that necessary actions would be taken to address these issues swiftly.

D. CLOSING REMARKS

The meeting concluded with a commitment to enhance collaboration between BIS and FIPPI to streamline processes and improve standards in the plywood and panel industry. Further follow-up meetings are to be scheduled to monitor progress on the discussed points. □

*Readers are invited to send views, comments and suggestions if any, addressed to Editorial board
We also invite your valuable Advertisement and Article to be published in the Journal.*

“INDIAN WOOD & ALLIED PANELS”

A Quarterly Journal on Plywood and Panel Industry

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Indian Plywood Industry – Technology and Standards



Dr. S K Nath

Ex- Jt. Director, IPIRTI
(now IWST), Bangalore

At the beginning of the plywood industry in India during 1950s, when manufacturers started making tea-chest, the major problems were i) non-availability of proper adhesive, ii) apathy of the tea garden owners to use low quality local make tea-chest in lieu of imported European tea-chest. Although by World War II, both phenol formaldehyde and urea formaldehyde were well known as wood adhesives, but the plywood manufacturers in India were yet to master over use of synthetic resin as plywood glue. India was independent by that time and Government of India came forward to give protection to growing wood based panel industry by imposing 30% duty on import of all types of plywood and limiting the quota for import of tea-chest. Simultaneously, Government also asked the industry to improve the quality of their products. Slowly improvement was observed in bond quality and after 1950, the manufacture of commercial plywood was initiated. But the problem related to adhesive continued. During 1960-61, the major industries felt the need of R & D on plywood processing technology by establishing a research laboratory. Industrialists and their representatives like Sri K B Parekh, Sri A K Kaderkutty, Sri L N Dukania, Sri B N Kapur, Sri K S Lauly, Sri B K Khaitan and many others decided that a laboratory in the name of Indian Plywood Industries Research Association (IPIRA) will be established in Bangalore. With their request Dr Narayanmurthy from Forest Research Institute, Dehra Dun joined as Director and the laboratory started functioning in rented house in Bangalore from 1962 with limited number of scientists and technicians.

In 1965, IPIRA started its own laboratory and pilot plant on a land given by Government of Karnataka at Peenya in

Bangalore and the name of the laboratory was changed to Indian Plywood Industries Research Institute (IPIRI). The member plywood factories agreed mutually to contribute to meet the financial need of the institute. IPIRI, along with many research institute carrying out industrial research, was brought under the umbrella of CSIR. With the output of the institute research work on adhesive and plywood processing technology, the plywood industry in India become self-reliant in resin manufacture and started producing various grades of plywood, block board and flush doors. Several Indian timber species were studied to find out their suitability for manufacture of plywood. Technology transfer was done by visit of scientists to the plywood mills and offering training to the factory personal in the institute. Indian standards were prepared on different grades of plywood and other panel products since 1965.

As the plywood industries became self-reliant on manufacture ofailable quality of plywood, the fund flow to the industry started to be sluggish. By 1977, the administrative control was given to Ministry of Industry, Government of India with the condition that plywood industry will raise fund to run the institute and 50% of the total fund requirement will be compensated by the ministry.

During 1985, with the effort of Dr. P M Ganapathy, the then Director of IPIRI, the institute received financial assistance from UNDP to establish a training centre on wood and wood based panel products. Infrastructure were developed by procuring new machinery for pilot plant, up-grading laboratories and getting scientists trained in premier wood technology institutes round the world. The training centre started operating from 1989 and still continuing (under IWST).

As time passed on, raising of fund to contribute to the institute became very difficult and some of the big industries approached Government of India to undertake both administrative and financial control. In 1991, the institute came under Ministry of Environment and Forest (MOEF), Government of India and was renamed as Indian Plywood Industries and Research and Training Institute (IPIRTI). In 1996, Government of India proposed to close down some research institutes all over India and IPIRTI was finally closed down in 2022 and merged with Institute of Wood Science and Technology (IWST), Bangalore, under the umbrella of ICFRE, Dehra Dun.

At the beginning of the industry, most of the plywood machinery like peeling machine, dryer, hot press,

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trimming machine, narrow belt and drum sander, boiler, glue kettle, preservative treatment plant and other subsidiary equipment were made locally. A few factories also imported machines like peeling machine from Italy and Switzerland, wide belt sander from Germany, scarf jointer and splicing machine from Finland. Jointer were available from both indigenous and foreign source. A few hot press had also been imported, although hot press and dryer of domestic make were available and their quality also improved with time.

Except a few industries, wood based panel industries never have the culture of having R & D section attached to the industry. Even today, when the world has progressed so fast, plywood industry barely put any budget on R & D – either for in-house research or for product/process development in outside wood research institute. To mention about research laboratory, Western India Plywood in Kerala and Permal Wallace Pvt. Ltd. in Bhopal have their R & D section with adequate scientific and technical man power.

Plywood industry had brought out IPIRTI to overcome the technology deficit the industry was facing at the beginning; but once they overcame the problem, the industry started losing interest to the institute and research. The first generation of mill owners brought up the research institute, but with the next generation the link between industry and research institute started fading.

In spite of the fact that R & D for plywood industry is the least bothered area, the industry survives well after closed down of the industry in north-east in December, 1996. Factories in north-east were manufacturing about 60% of the plywood need of the country. The industry was fully dependent on natural forest origin timber and was forced to close down in north-east as free access to forest timber was no more; but the manufacturers found timber raw material from plantation in north-west India. Many farmers started growing poplar as they found extra source of income from plantation along with usual cultivation. The advantage to establish manufacturing unit in north-west was that that manufacturers from north-east had capital, machinery, experience, technical man-power from old factories and vacuum in the consumer market along with local availability of plantation timber in north-west India.

Another factor which helped the manufacturers for fast and efficient growing of the industry using low girth, fast growing plantation timber was the focus into China. Since the last decade of the twentieth century, Indian plywood manufacturers got attracted towards the plywood processing machinery and technique in China and started accommodating both in Indian plywood industries. The first machine to induct to Indian plywood industry was

a spindle-less peeling lathe. Till high girth logs were available, only rest roller were peeled in spindle-less lathe. As the low girth plantation logs became the only source of timber to plywood mills, spindle-less lathe became the only machine to peel logs. Peeling logs in spindle-less lathe gave higher veneer yield and hence profitable for the industry. Other machines like core composer, scarf jointer, finger jointer were imported from China as these equipment were much needed for better processing of plywood from veneer obtained from low girth, short length logs. Some major machinery like dryer, sanding machine were also imported, although indigenous machines are available from the very beginning of the industry. Some Indian fabricators also started making spindle-less peeling lathe and the quality is better than imported lathe and can peel veneer to the rest roller upto 15mm compared to 30mm rest roller in Chinese lathe. Going a step ahead, some manufacturers started copying Chinese process in making resin and veneer assembly; although well-established indigenous technology has been available.

Whatever may be the change of in timber raw material, Indian plywood manufacturers were able to manufacture plywood with respect to i) proven bond quality and ii) plywood resistant to bio-degradation providing suitable preservative treatment. However, the industry failed in following two respects:

- i) Making plywood using short rotation, immature timber, mechanical strength of plywood cannot be attained to meet the values given in BIS specification.
- ii) Face veneer thickness which is required higher to attain bending strength as per BIS requirement, has been brought down to thin skin of 0.25mm because of escalating cost the face veneer.

Since BIS license was, so far, voluntary, majority factory were making plywood with cosmetic look and marketing products without BIS marking. Those who used to mark their products with BIS license, managed to get license in spite of having the above mentioned deficiencies. Many small and medium scale factories never bothered to get BIS license. Off and on, some premier plywood manufacturers used to bring the fact before the BIS that plywood made with short rotation, immature plantation timber cannot attain BIS prescribed values for mechanical strength properties and there should be reduction in the values in BIS standards with values which can be obtained with plywood made in the country. However, the issue was not taken seriously both by BIS as well as the industry to bring amendment in the standards.

One aspect was neglected by the entire industry is that nobody came up to undertake research in either (the then) IPIRTI nor done any study of their own to find out

what process development is needed to make plywood to enhance strength properties using the raw materials available. Neglect to parallel R & D development to cope up with unavoidable circumstances, is one of the major reason that the entire industry is feeling uncomfortable when the plywood is proposed to be brought under QCO.

Use of skin thin face veneer is more the cost related and such a situation has been created by the plywood marketing strategy over years. In India, market demand is that plywood must have cosmetic surface look which need defectless, full size veneer. Such veneer is only available from costly, high girth hardwood. Thicker veneer with minor acceptable defects or with patch work are not accepted to Indian buyers. Hence the highest grades of plywood like marine, structural plywood are also made with very thin veneer leading to poor bending strength.

Indian national standards on plywood products were prepared based on the properties of products made out of prime quality, mature timber procured from natural forest. Hence meeting the strength properties of plywood to conform standards was not big problem. As the availability of timber from natural forest ceased and plywood had to be manufactured from plantation timber or timber of secondary species from miscellaneous sources, it become increasingly difficult to meet the properties of plywood set in BIS standards. Nobody could master the technology to manufacture plywood as per standards using plantation or secondary species as neither the mill owners have R & D set up nor did they took the help of research institute to overcome the problem. As a general practice, the standards for any product should be up-lifted with time; but in case of plywood, the manufacturers were constantly appealing to BIS to dilute the standards by reducing strength properties of plywood.

The issue of manufacture of plywood as per standards has become serious as Government of India has brought QCO for all wood based panel products. Implementation of QCO can be justified for the reasons: i) it will help consumers to get standard products, ii) it will compel manufactures to up-grade their production line to produce better quality products, iii) it will put barrier to import substandard, cheap material to the country. But implementation of QCO without giving sufficient time to factories for up-gradation cannot be justified. In this respect, one question is pertinent here. For establishing a production unit, license is a must. Unfortunately, the license issuing authorities never verify the technical competence of the licensee factory whether it can produce products as per standards. A factory which has been enjoining, since its inception, to produce plywood of any quality it can sell in the market, will find it difficult to go for manufacturing standards products as per BIS overnight.

Although, plywood research institute (IPIRTI) came up with the initiative of plywood mill owners to ride over the initial technological crisis they were facing, their interest to the institute dried out once the crisis was over. With time the industry flourished, but the industry neither bothered to build up individual R & D infrastructure, nor a cluster research laboratory, nor feed the research institute to survive and flourish. The reason behind this should be looked into critically. Plywood, as a product, is more market or commerce driven than industry driven. An industry driven product dictate the market with the zeal of its quality and users' friendly application. The product gets up-graded with time by technological back-up. On the other hand, the production of a market driven product is fashioned by production unit as dictated by the market focus. The technological up-gradation in the product does not come from the technicians but orientation in the product takes place as guided by what the market ask to do. This is the reason why plywood is more sold with surface look rather with adequate mechanical strength.

An example of an industrial approach for taking up the manufacture of a product can be given. About 20 years back, TATA Coffee decided to undertake manufacture plywood using silver oak species which they use as shed tree in tea plantation and fell after 15 years. They approached IPIRTI to develop technology for producing Marine grade plywood as per IS: 710 with silver oak. The project was carried out successfully by the institute and technology transferred to the TATA Coffee group. The difference with the commercial approach is that when a new investor want to set up a new factory, the person or the group will share the experience of a few existing mill owner and will get a replica of his/their own. Technological intervention has zero value in a commercial approach.

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BIS – Guidelines for Dealing with Non – Conformity of Product(s) – A New Approach Required



Vaidyanathan Hariharan***

February 11, 2025 and February 28, 2025 are two dates which shall be etched in the history of Indian plywood and wood-based panels industry as the beginning of the Quality (Control) era. The coming months are going to change how the industry sector functions, going ahead, and may even decide on the very existence of a large number of micro-small enterprises working in this sector, many of them in operations since the 1980s.

History of Product Acceptance in Indian Markets

India has always had the most unique, self-sustaining, self-correcting market models for various products & services of our country. Plywood and panels (hereafter referred to as board products) too, has not been much different from the regular scheme of market affairs. India's markets have had their own unique methods and approaches to accepting products. This, in the case of wood-based board products involves – 100% 'hard'wood with colour (reddish-brown to dark brown), weight (densities of 0.65g/cc and above), nailing tests (starting 15mm thickness and upward, layers must not split with a 'No. 12' carpenter nail – 2.6mm head & 2" long), dealer-determined open-vessel boiling tests (4 hours, 8 hours etc.) for delamination, edges quality and looks, the recently introduced dealer-level pressure cooker tests for layer-delamination (5 seeti-whistles, 8 seeti-whistles, 15 seeti-whistles etc.), and warping/bending acceptance scales of 3-5mm at the edges of board-stacks. Additions in the recent couple of decades being – falsely marking 710 Marine on ordinary boards, as well as greenish coloured board dipping & selling as waterproof/marine grades.

These criteria have all been decided by some major distributors and dealers of board products further trickling down to the last-mile retailers, based on their self-proclaimed 'capability' to sell mass quantities of sheets

by talking clients/customers into believing such tactics as actual parameters required in these boards. The helpless manufacturers have also had to fall in line with these traders and their forcefully-evolved market dynamics, in order to keep their factories running and survival ensured. Gradually, this became a habit and natural practice over the years.

Positive Learnings from the History

We must be able to appreciate a few positive facts about the current way of life in this industry. Some of the 'practical' tests evolved by the trader community in this sector, are reasonably relevant and very useful for mass-manufactured products that are placed for the lower economic segment of society in India, which is assumed to consist of 80% of our population. A part of the reason for such market evolution is the basic necessity for lower cost products, in order to fulfill the dreams of customers by providing basically acceptable quality products at low prices that would not pinch the already severely-pinched consumer segment of this country. Today, there are retail plywood products in the range of 55/- per square feet and up to 180/- per square feet for the same 18mm thickness. For this to be realized, factory prices need to be in the range of 40/- to 130/- per square feet for the same thickness.

Therefore, such practical approaches to product quality requirements have in fact helped the low-priced market segment to gain access to such products and use these products in their dream homes for modular and furniture applications. So, we may say that these practices have been necessity-based evolution of market requirements.

Ensuring Perfect Uniformity in Plywood as a Product - Practicality

In India, plywood products are made using various species of farm-grown wood. Rotary-peeled wood core veneers from these species have inherent natural variabilities, influenced by several factors such as – timber species, age at the time of harvest, plantation-specific conditions, weather patterns, growth characteristics, density variations, and fibre structure. The quality of core veneers can vary significantly due to these governing factors.

Though advanced processing techniques and methods have been able to reduce inconsistencies to a large extent, making products with absolute uniformity from naturally imperfect raw materials is unrealistic. Certain degrees of inherent variations will always persist. Even though the current quality control measures in standard factories focus on optimized core veneer selection and grading,

along with advanced processing techniques, expecting & achieving complete uniformity (perfection) across all plywood products, with available raw material that is already competing neck deep with alternative panel manufacturers sourcing shorter rotation wood such as the PB and MDF plants, is inherently challenging in the Indian scenario.

The Guidelines Document of BIS

The current BIS document dealing with guidelines for non-conformity of product(s) is a generic and all-encompassing document which only looks at one side of the story. The document talks about how non-conformity will be assessed, and how suspension/cancellation procedures shall be undertaken in case of non-conformity whatsoever, and its relevant back-and-forth activities and tasks.

Urgent need for a New Thought & Approach

Plywood & composite-wood board products are naturally prone to imperfections, based on the applications for which they are manufactured. These products are manufactured & supplied for various application-specific uses such as –

- ✓ Structural applications – Shuttering, Flooring & Platforms, Compreg etc.
- ✓ Non-structural exterior applications – Light roofing, Wall paneling, exterior partitions etc.
- ✓ Waterproof applications – Kitchen cupboards, washroom modular installations, bathroom doors etc.
- ✓ Interior applications – Modular furniture & fittings, wardrobes & cupboards, side tables etc.
- ✓ One-time use, random applications – packing cases, machinery & equipment packing, material loading pallets, temporary partitions, temporary ceilings, low-cost fittings, temporary benches and supports etc.

As per the current QCO, India cannot even manufacture packing grade & one-time use board products, nor do we have HS Codes for the same, which is a major flaw in the approach to standardization and market facilitation. Ignoring such practical market requirements in our policies will lead to mushrooming of all sorts of uncontrolled alternative plastics & non-biodegradable/toxic products being dumped on mass scale, to replace existing eco-friendly sustainable materials. Late implementation of such necessary facilitations may lead to time provided for these eco-hostile alternatives to establish base and market.

Given the various application possibilities of such board products, it is essential to define and enumerate specific non-conformity guidelines, especially in view of the vast number of re-purposing possibilities these board products can have. Continuous recalls of product lots and stringent scrapping & disposal of valuable wood raw material-based products would lead to gross injustice to the environment

and our soils too. This would also lead to steep price rises and inability of the common man to purchase these products at low prices. Where products such as plywood and boards are not materials of emergency, or under ESMA, or affecting the public health and safety except for indoor volatile emissions, and because these products are manufactured from natural raw material which is precious, valuable, and environmentally sensitive, there must be provisions in the Guidelines document to –

- ✓ have separate product-specific lists of critical & non-critical non-conformities, in order to facilitate ongoing production operations.
- ✓ include methods of handling and disposal of the non-conforming lots.
- ✓ repurpose/mark non-conforming lots to the lower grade of products, once such critical non-conformities are identified and reported. For example, non-conforming BWP lots may be allowed to be repurposed to MR grade materials.
- ✓ help factories continue with manufacturing & supply of grades (in case they are under a single license) other than the non-conforming grade.

Non-conformity Guidelines specific to Product & its Application

Creating product-specific and application-specific non-conformity guidelines for wood-based board products is imperative. There are numerous applications of composite-wood board products. Application-specific 're-direction'/re-purposing guidelines for these products will –

- ✓ avoid unnecessary recalls & disposal/environment costs involved.
- ✓ avoid natural resource wastes.
- ✓ avoid loss in economy, and promote access to low-price necessity-products for the consumer.
- ✓ augment ease of doing business.
- ✓ provide smooth management of quality standards and its approaches.

It is hoped that the guidelines to non-conformity document takes into account some of the relevant traditional practices by our society, especially in the case of wood-based products - practices which have been inherently sustainable, economical, practical and self-corrective in nature since time immemorial, which also cater to the socio-economic needs of our country and a larger section of Her people. Jai Hind!

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Evolution of Plywood Standards in India



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1. Introduction

Plywood, a versatile engineered wood product, has played a crucial role in India's furniture, construction, and packaging sectors for over a century. Its strength, versatility, durability, and cost-effectiveness have made it a preferred choice among builders and designers. The evolution of plywood manufacturing date back to ancient civilizations, where layers of wood were bonded using natural adhesives like plant resins and animal glue. However, it wasn't until the late 19th century that plywood, as it is recognized today, came into existence.

Presently, the plywood industry in India is nearly hundred years old. Over the decades, this industry has undergone a remarkable transformation and despite experiencing fluctuations over time, it has witnessed a steady growth. The journey of plywood manufacturing in India is a testament to innovation, resilience, and continuous growth. The origins of plywood manufacturing in India can be traced back to the early 20th century, during which the plywood industry was characterized by small-scale operations with limited technology and production capabilities. The primary focus was on meeting the domestic demand for plywood, which was largely used in furniture making and construction.

As the plywood industry expanded, the need for standardization became evident. Without proper regulations, there were inconsistencies in quality, strength, and safety. As a result, the Bureau of Indian Standards (BIS) introduced formal guidelines to regulate plywood manufacturing, ensuring reliability and consistency in

the industry. Standards establish technical specifications for materials, dimensions, tolerances, grading, testing methods, marking, and other essential parameters. Their primary purpose is to set quality benchmarks for products in alignment with industry requirements while ensuring consistency in adherence. Standards play a pivotal role in maintaining quality levels, ensuring quality control, facilitating improvements, and supporting trade. To drive the continuous advancement of panel products, strict compliance with established standards by the industry is essential. Additionally, product certification through rigorous testing serves as a valuable tool in enhancing consumer confidence (Nandanwar and Singh, 2020).

Over the past century, these standards have evolved incorporating advancements in new manufacturing technologies, environmental considerations, and international trade requirements. New quality control measures, standardized testing procedures, sustainable practices, and use of certified products have contributed to the industry growth. The industry has successfully adapted to this shift by sourcing raw materials from managed forests and using non-toxic adhesives in the production process. This article examines the historical development of plywood in India, the evolution of plywood standards, and their impact on product quality and industry growth. It also discusses the revisions in plywood manufacturing standards in India and potential future advancements in this sector.

2. Historical context of Plywood Industry in India

The Indian plywood industry traces its origin back to 1916, closely associated with that of the then-booming tea industry, which had been exporting tea since 1860. Initially, tea was packed in thick sawn wood boxes for exports, but these led to complaints about tainting and poor durability during transport. To address these challenges, the Indian Tea Association recommended the use plywood tea chests, which were stronger, lighter, and more durable. This led to increased imports of tea-chest plywood from European countries, mainly from England and Finland (Nath, 2009).

A major milestone in the Indian plywood industry was the establishment of M/s. Assam Railways & Trading Company in Margherita, which commenced plywood production in 1924. However, the company faced stiff competition from foreign manufacturers and resistance from the tea industry, which doubted the suitability of local timber



for tea chests. During World War II, the import of tea-chest plywood became challenging. To boost domestic production, the Government of India imposed a 30% import duty on all types of plywood in 1948, which was later increased to 35% in 1957. While protecting the domestic plywood industry, the government also urged manufacturers to improve quality (Nath, 2009).

After successfully establishing tea-chest plywood production, the plywood industry embarked on manufacture of commercial plywood in 1951. This marked the beginning of continuous growth, with the industry spreading across India and adopting advanced technologies to produce various types of plywood, boards, and doors. Initially, casein and natural protein-based adhesives were used for plywood manufacture in India. However, the industry later switched over to the synthetic adhesives such as urea-formaldehyde and phenol-formaldehyde types (Nath, 2009).

The post-independence era brought significant technological advancements for the plywood industry in India. With the advent of new technologies and machinery, manufacturers were able to improve the quality and efficiency of plywood production. The introduction of rotary peeling and veneer slicing machines revolutionized the manufacturing process, allowing for the mass production of high-quality plywood.

The 1970s and 1980s marked a period of rapid expansion and diversification for the plywood industry. Manufacturers started exploring new markets and export opportunities, leading to an increase in production capacity. Besides the

country's entire requirements of tea-chest plywood, the Indian plywood industry started producing commercial plywood (interior and exterior grade), decorative plywood, decorative veneers, shuttering plywood, marine plywood, aircraft plywood, blockboards, and flush doors.

With industrial growth, awareness of environmental sustainability also increased. In the late 20th century and early 21st century, Indian plywood manufacturers started adopting eco-friendly practices and sustainable sourcing of raw materials. The use of plantation timber and adherence to international standards for forest management became prevalent, ensuring the long-term viability of the industry.

3. Origin of Bureau of Indian standards (BIS)

Bureau of Indian standards (BIS) formerly known as the Indian Standards Institution (ISI) is the National Standard Body of India which came into existence, through an act of parliament in 1987 for the harmonious development of the activities of standardization, marking and quality certification of goods. A new Bureau of Indian Standards Act, 2016 was brought into force in October, 2017 which further strengthened the activities of BIS in respect to standardization and certification of goods, articles, processes, systems and services. Formulation of Indian Standards is one of the core activities of BIS which is done through 14 Division Councils representing diverse areas of economy and technology. Indian Standards are formulated through specialist technical committees (functioning

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under the Division Councils) namely, Sectional Committees which may be supported by other technical committees. As a policy, the standards formulation activity of BIS has been harmonized as far as possible with the relevant guidelines as laid down by the International Organization for Standardization (ISO) (www.bis.gov.in).

There are around 20,000 standards formulated by BIS so far through about 1,000 technical committees involving around than 15,000 experts. These standards are periodically reviewed resulting in their reaffirmation, amendment, revision or withdrawal as may be required (www.bis.gov.in).

The Committee structure in BIS has been providing traceability and tangibility benefits to the national economy in a number of ways – providing safe reliable quality goods; minimizing health hazards to consumers; promoting exports and imports substitute; control over proliferation of varieties, etc. through standardization, certification and testing (www.bis.gov.in).

The standards for timber and panel products from wood and other lignocellulosics are dealt by the Civil Engineering Department (CED-20) of the BIS. There are a total of 1990 standards under the CED department with 37 technical committees. CED 9 for Timber and Timber Stores consist of 154 standards, CED 11 for Doors, Windows and Shutter consist of 45 standards and CED 20 for Wood and other Lignocellulosic Products consist of 93 standards (www.bis.gov.in).

While BIS certification is generally voluntary, the government has made it mandatory for certain products to safeguard consumer interests and public health. BIS is involved in various activities like standards formulation, certification of products, hallmarking, testing and calibration schemes, etc. Obtaining a BIS license involves a thorough assessment of manufacturing infrastructure, quality control capabilities, testing facilities, and production processes. This comprehensive evaluation



ensures that the products not only comply with regulations but are also safe and reliable for consumers (AlephIndia. in). Figure 1 depicts the process of certification of the ISI mark which is done by the BIS.

4. Plywood Standards in India

The erstwhile Indian Standards Institution (now Bureau of Indian Standards) has published standard specifications for various types of plywood, viz.: tea-chest, general purpose plywood, decorative plywood, marine plywood, aircraft plywood, flush doors, etc. The first Indian standard for plywood, IS: 10 “Plywood for Tea-Chests — Specification” was introduced in 1949 which covered provisions related to different components of plywood tea-chest, namely, battens, plywood panels, metal fittings, etc. This standard was subsequently revised in the years 1953, 1964, 1970, 1976, 1996, and 2013. To address the concerns of different



Figure 1: Process of certification for ISI mark by BIS.

trades involved in the production process—such as plywood, battens, metal fittings—and to assist in quality enforcement procedures, this standard was split into five parts during its fourth revision. The five parts of this series are: Part 1: General; Part 2: Plywood; Part 3: Battens; Part 4: Metal Fittings; and Part 5: Assembly and Packing.

The industry produced the panel products conforming to the I.S.I. standards, comparable in quality with the products of other plywood producing countries of the world. The industry and the Government of India established various research organizations such as the Forest Research Institute at Dehra Dun, the Indian Plywood Industries Research Association at Bangalore and the Field Laboratory of I.P.I.R.A. at Calcutta for silvicultural work and research on materials and methods of production. In addition to the above central research organizations major plywood factories also had their own laboratories to conduct their tests and experiments (Commonwealth Forestry Report). These institutions played a crucial role in refining manufacturing processes and improving product quality to match international standards.

4.1. Standards introduced during the years (1950-1960)

4.1.1. IS 303 – 1951: Specification for Plywood for General Purposes

After successfully establishing tea-chest plywood production, the plywood industry embarked on manufacture of commercial plywood in 1951. The Indian Standards Institution first introduced IS 303 in 1951, establishing the benchmark for General Purpose Plywood in India. This standard covers the requirements of plywood used for general purposes. This was subsequently revised in 1960, 1975, 1989 and 2024.

4.1.2. IS 656 – 1955: Specification for Logs for Plywood

The supply of logs is of great economic and technical importance for the plywood trade, and it was realized that the logs for plywood as offered to the plywood factories varied considerably in quality. With a view to providing the factories a guide for the selection of logs for the manufacture of plywood conforming to the relevant Indian Standard, IS: 656 was published in 1955. This standard specifies the minimum requirements for logs for making veneers for the manufacture of various grades of plywood, namely, tea-chest [IS 10 (Part 2)], general purposes (IS 303), medium strength aircraft (IS 709), high strength aircrafts (IS 4859), marine (IS 710), veneered decorative (IS 1328), decorative (IS 7316), concrete shuttering works (IS 4990), fire retardant (IS 5509), structural (IS 10701), museum (IS 15791) and veneered particle boards (IS 3097), block

boards (IS 1659), and flush doors [IS 2191 (Part 1) and IS 2202 (Part 1)] conforming to the relevant standards.

4.1.3. IS 709 – 1957: Specification for Medium Strength Aircraft Plywood

The requirements for plywood to be used in structural parts of aircraft and gliders were rigid in view of the fact that the parts of the aircraft have to withstand structural stresses and large climatic variations. Therefore, on the request of the Directorate General of Civil Aviation, Indian Standard IS 709 was introduced in the year 1957. This standard lays down the requirements for quality, bonding, manufacture and strength of medium strength aircraft plywood suitable for use in the manufacture of secondary structural parts of aircraft and gliders, where medium or low strength plywood is generally specified.

4.1.4. IS 848 – 1957: Specification for Synthetic Resin Adhesives for Plywood (Phenolic and Aminoplastic)

Adhesives form one of the most important raw materials used in the plywood and joinery industry. Since a large quantity of the raw material and resin adhesives were imported, the need for a standard became evident to ensure quality control and performance enhancement. In this regard, IS 848- Synthetic Resin Adhesives for Plywood (Phenolic and aminoplastic)- Specification was published in 1957 prescribing the requirements for phenolic and amino plastic synthetic resin adhesives used in the plywood industry.

4.1.5. IS 710-1957: Specification for Marine Plywood

The commercial plywood used for general purposes was found to be unsuitable for marine applications due to the extreme conditions such as fluctuations in temperature, humidity, alternate wetting and drying, and attack by marine organisms. Due to the challenges with the commercial plywood, a new standard, IS:710 for Marine Plywood was published in the year 1957 ensuring the use of specific manufacturing methods of marine plywood and adhesives to enhance durability. This standard covers requirements for materials, manufacture and performance of marine plywood suitable for the construction, repair and maintenance of marine and river craft, pontoons and the like.

4.1.6. IS 1328 - 1958: Specification for Veneered Decorative Plywood

The wide range of applications of Decorative Plywood in timber paneling work in buildings, interior lining of railway coaches, buses and ships and for general interior decoration, required that the plywood should be durable, well-constructed and of the highest quality. For this purpose, IS 1328 was first published in 1958. This standard

covers the types of plywood with ornamental veneers on one or both faces used for decorative purposes, such as furniture making and paneling of all types, including panelling for railway coaches, buses and ships.

4.2. Standards introduced during the years (1960-1970)

4.2.1. IS 1734 - 1960: Methods of Test for Plywood

To use plywood as an engineering material, the Indian Standard, IS 1734 was first published in 1960, which specified tests for evaluating the physical and mechanical properties of plywood. These methods were later revised in 1972, when they were restructured into separate parts for better clarity and ease of use. Additionally, a few more testing methods were introduced to enhance the evaluation process.

4.2.2. IS 1508 - 1960: Specification for Extenders for Use in Synthetic Resin Adhesives (Urea Formaldehyde) for Plywood

Extenders are commonly added to adhesives to reduce costs and enhance specific properties, such as improved glue spreadability. However, to ensure strong and durable bonds, the extenders should not have an impact on adhesion or resistance to microbial attacks. The effectiveness of the glue-mix depends largely on a proper selection of the extender and its method of use. To establish guidelines for the use of extenders in plywood adhesives, IS 1508 was first introduced in 1960. This standard specifies the material used as extenders in the plywood industry, like wheat flour, rice flour, tamarind kernel powder, tapioca flour, sunn hemp, seed powder and various starches and other vegetable starch and protein-based materials.

4.2.3. IS 2191 - 1962: Specification for Wooden Flush Door Shutters (Cellular and Hollow Core Type) Part 1: Plywood Face Panels

This standard was first published in 1962. This standard (Part 1) lays down requirements regarding sizes, material, construction, workmanship and finish, types, of cellular and hollow core wooden flush door shutters. with face panels of plywood or cross-band and face veneers.

4.2.4. IS 2202 - 1962: Wooden Flush Door Shutters (Solid Core Type) - Specification Part 1: Plywood Face Panels

This Indian Standard (Part 1) was published in 1962. It describes the requirements regarding types, sizes, material, construction, workmanship and finish, and tests of solid core wooden flush door shutters with face panels of plywood or cross-band and face veneers.

4.2.5. IS 2674 - 1964: Specification for Battened Plywood Cases

As an effort to establish quality norms for the products like battened plywood cases, an Indian Standard, IS 2674 on battened plywood cases for general uses was first formulated in 1964. This standard covers the requirements of battened plywood cases for general use for packaging of articles of mass of up to 250 kg.

4.2.6. IS 4859 - 1968: Specification for High Strength Aircraft Plywood

IS: 709-1957 "Specification for Medium Strength Aircraft Plywood" covered medium-strength aircraft plywood, primarily used for secondary structural components in aircraft and gliders. However, for primary structural parts, a more robust and high-strength plywood was required. To address this need, IS: 4859 was formulated in 1968, establishing standards for high-strength aircraft plywood. This standard specifies the strength, quality, bonding, and manufacturing requirements, ensuring the plywood meets the rigorous demands of primary aircraft structures.

4.2.7. IS 4990 - 1969: Plywood for Concrete Shuttering Works - Specification

Due to the advantages offered by concrete shuttering plywood such as cost-effectiveness and reusability, IS 4990 was established in 1969. Plywood for concrete shuttering works is a BWP grade plywood, preservative treated and especially suited for use in concrete shuttering and form work. The main requirements of such plywood are that it should be durable under alternate wetting and drying conditions, its surface should be hard and it should possess adequate strength to withstand the load of concrete and the forces caused by pouring of concrete and vibrations. This standard specifies the requirements of such plywood for use in concrete shuttering and form work and provides guidance in the manufacture and use of the plywood.

4.2.8. IS 5539 - 1969: Specification for Preservative Treated Plywood

The existing standards for plywood included provisions for treatment but they provided temporary storage protection and did not ensure long-term resistance under all conditions. Also, the treated plywood was not resistant against decay, marine borer and insect attack in service under all conditions. As a result, a new standard, IS 5539 for the preservative treatment of plywood was introduced in 1969. This standard covers the treatment of plywood for protection against fungi, termites and other insects and marine borers and requirements of preservative treated plywood.

4.2.9. IS 5509-1969: Specification for Fire Retardant Plywood

Plywood, being an organic material is prone to get degraded by fire, similar to solid wood of comparable density and thickness. While the material cannot be made completely fireproof, its resistance to ignition, flame spread, and penetration can be improved through suitable treatments. Some methods involve the use of fire-resistant chemicals at the veneer stage, but there are problems with glue bonding during manufacturing or long-term use. Similarly, some of the fire-retardant chemical treatment may require special paints for painting of finished plywood. To avoid such issues, the standard for fire-retardant plywood, IS 5509 was introduced in the year 1979 which covers the fire-retardant formulations, method of treatment, retentions and requirements of fire-retardant plywood..

4.3. Standards introduced during the years (1970-1980)

4.3.1. IS 7316 – 1974: Specification for Decorative Plywood Using Plurality of Veneers for Decorative Faces

Decorative plywood, conforming to IS 1328:1970, is widely used in paneling work in building; buses and ships; furniture; cabinetry; and interior decorative work. In view of its extensive applications, decorative plywood should be durable, structurally sound, and of standard quality. However, the scarcity of naturally decorative timber, its slow growth and rising demand significantly increased its cost. To address this challenge, research has focused on utilizing more readily available and cost-effective timber species. This led to the development of decorative plywood made from multiple veneers of varying colors and types, produced on a large scale.

With the establishment of this manufacturing practice in India, a new standard, IS 7316 was established in 1974 to ensure quality and guide consumers in specifying minimum acceptable requirements for decorative plywood made from plurality of veneers. This standard covers decorative plywood with ornamental faces produced by use of plurality of veneers and for decorative use, such as interior panelling of buildings, buses, ships, etc., and for decorative furniture of all types.

4.3.2. IS 7638 – 1975: Methods of Sampling for Plywood, Fibre Hardboards, Insulation Boards and Particle Boards

Ensuring the quality of plywood, fibre hardboards, insulation boards, and particle boards is crucial in commercial transactions. Evaluating an entire lot through 100% inspection is impractical and costly, especially

for large batches and destructive testing. Sampling inspection provides a more efficient and economical approach, allowing valid inferences about the batch with considerable economy and accuracy.

The procedures of sampling of various types of plywood, fibre hardboards, insulation boards and particle boards had been incorporated in respective product specifications. However, with years of industry experience and growing importance of these boards, a need arose to revise these sampling procedures. This led to the introduction of a dedicated sampling standard, IS 7638 in the year 1975 to ensure rational and effective quality assessment.

The standard defines sampling methods for various characteristics of plywood, fibre hardboards, insulation boards and particle boards and their acceptable quality levels based on inputs from consumers and manufacturers. It is designed primarily for lot inspection by consumers to verify compliance with Indian Standards. However, these boards may also be inspected by manufacturers during production to ensure uniformity thereby providing greater quality assurance. By implementing statistical quality control techniques as per IS 397 (Parts 1-3), manufacturers can enhance uniformity, minimize quality fluctuations, and ensure greater reliability in their products.

4.3.3. IS 7992 - 1976: Specification for Plywood Cases for Packing Tobacco for Export

This standard was first introduced in 1976 to establish requirements for plywood cases used for packing tobacco for export. The plywood cases should be designed in such a way as to withstand transportation hazards while ensuring the tobacco remains intact for “netting” purposes upon opening.

4.3.4. IS 8001 - 1976: Specification for Packaging of Plywood, Blockboards, and Flush Doors for Export

With the growth of the plywood industry in India, various types of materials including commercial plywood, blockboards and flush doors were being produced. The capacity utilization was quite satisfactory, making it comparable to global standards. Additionally, hardboard and particle board industries also developed significantly, with a potential for increased production.

Due to the global shortage of timber and timber products, India was well-positioned to export plywood and panel products to neighboring countries. However, there were problems related to the proper packaging of these materials during their transit by sea or by road, so that these materials are not damaged during transportation. An existing Indian Standard, IS: 3071-1965, “Specification for Wooden Crates” provided guidelines for packaging

various articles, typically using sawn wood planks for crates or hoop iron for securing the materials. However, a more structured approach was needed to classify packaging methods based on cost-effectiveness, handling convenience, and durability against transportation hazards.

To address these problems, IS 8001 was introduced in the year 1976 which covers the requirements of the crates as well as the materials, such as sawn wood planks, hoop iron strips, etc. intended for the fabrication of crates for packing Plywood, flush door panels, etc., weighing not more than 250 kg. It also includes the timber type, size of frame sections and battens/struts and the mode of assembly of the same for packaging the intended materials..

4.4. Standards introduced during the years (1980-1990)

4.4.1. IS 10701 - 1983: Specification for Structural Plywood

IS 10701 was introduced in the year 1983, to establish structural plywood as a distinct category with high strength and durability for engineering applications. Recognizing the need for a standardized material with predictable performance, the standard was formulated to specify timber species, veneer quality, high grade BWR and BWP adhesives, and construction details. It provides guidelines for mass production, ensuring the plywood meets engineering and architectural requirements.

4.4.2. IS 12077 – 1987: Code of Practice for Testing of Timbers for Plywood Manufacture

To provide guidelines to the industries for efficient timber log processing in plywood manufacturing, IS 12077: 1987 was introduced. It specifies tests to assess timber suitability and its source, its processing to determine peeling, drying, splicing, and gluing properties of veneer. This standard helps the industry determine optimal processing methods and ensures the selection of appropriate timber species for plywood production.

4.4.3. IS 12053 – 1987: Code of Practice for the Preparation and Application of Putty for Repairing Plywood and other Wood Based Panels

Putty is a widely used material in the plywood, furniture, and wood-based industries for surface finishing, filling imperfections, and enhancing durability. This Indian standard, IS 12053 was developed in 1987 to define the types of putty, formulation guidelines, quality requirements, and standardized application techniques. This standard prescribes the requirements and the characteristics of putty based on nitrocellulose or urea

formaldehyde resin for use in repairing plywood and other wood-based panels.

4.4.4. IS 12120 – 1987: Code of Practice for Preservation of Plywood and Other Panel Products

Plywood, blockboard, flush doors, and particle boards, whether used for interior or exterior applications, are highly susceptible to biological deterioration caused by fungi, termites, and other wood-destroying organisms. Ensuring adequate protection against these factors is essential for enhancing the durability and economic service life of these materials. As a result, a new standard, IS 12120 was introduced in 1987 to provide comprehensive guidelines on the preservation of wood-based panels, specifying appropriate preservatives, treatment methods, and absorption levels required under diverse environmental conditions. It also accounts for specialized protection requirements that may be customized through mutual agreements within the broader framework of these recommendations.

The standard aligns with the guidelines outlined in IS 401:1982, which defines preservation techniques for solid wood. Preservative treatments are applied at various stages, including the veneer, particle, or batten stage. However, some preservatives may negatively impact the gluing process, either weakening the bond strength or interfering during long-term storage and use. Therefore, compatibility between adhesives and preservatives must be ensured. Additionally, residual preservatives on the treated surface may affect subsequent finishing processes such as gluing and painting, making it essential to seek the manufacturer's guidance before further processing.

This standard covers the preservative treatment of wood panel products and the raw materials, such as stiles, battens, veneers and wood chips (particles) used to manufacture these products against biological damage; that is, sap-stain, wood rotting fungi, termite, insects, marine borers and bacteria in order to obtain satisfactory economic life.

4.4.5. IS 10106 – 1990: Packaging Code - Part 2: Packaging Materials, Section 5: Wood and Plywood

Packaging materials as used in the industry are many and varied. These include paper and paper products, textiles, metals and metal foils, plastics, a variety of laminates, wood, plywood, glass ceramics, cushioning materials, strapping and hooping materials, nails, etc. Among these, wood and plywood occupy a vital and significant role ranging from light duty fruit and vegetable boxes of rough construction to the cases for packing engineering goods for export purposes, all subjected to severe static and dynamic

forces. The annual requirement of wood and plywood for packaging is estimated to be over 0.3 million cubic metre, costing more than 3 crores inspite of some competitive materials in the field. In view of the importance of wood and plywood in packaging, BIS introduced the Indian Standard, IS 10106 in the year 1990. This standard lays down the general guidelines for the selection of various types of wood and plywood as packaging materials other than forest based cushioning materials.

4.5. Standards introduced after the year 1990

4.5.1. IS 13957 - 1994: Metal Faced Plywood-Specification

Metal-faced plywood is a composite material created by adhering galvanized iron or aluminum sheets to one or both sides of a plywood panel. Given the increasing scarcity of timber, metal-faced plywood serves as a viable alternative by providing building boards of adequate strength while optimizing timber consumption. To ensure standardized manufacturing and quality assurance, Indian Standard 13957 for specification of metal faced plywood was formulated by the Bureau of Indian Standards (BIS) in the year 1994 with significant technical contributions from the Indian Plywood Industries Research and Training Institute (IPIRTI), Bangalore. This Standard covers manufacture and requirements of metal faced plywood composite. The scope is limited to the use of galvanized iron sheet or aluminum sheet only, as metal sheet.

4.5.2. IS 14315 - 1995: Commercial Veneers-Specification

Veneers are used for manufacture of a number of reconstituted lignocellulosic panel products, like different types of plywood, blackboard and veneered boards, and flushdoor. Therefore, a proper specification of veneers was an essential requirement for controlling the quality of above veneered products. This standard, IS 14315 was therefore formulated in the year 1995 to lay down necessary requirements of commercial veneers. This standard covers the requirements for commercial veneers used for faces, core and crossbands in the manufacture of plywood, blockboard, veneered boards and flushdoor.

4.5.3. IS 15684 - 2006: Extenders for Use in Synthetic Resin Adhesives (Urea-Formaldehyde) For Plywood — Code of Practice

Adhesive is a substance capable of holding materials together by surface attachment and form one of the most important raw materials used in the plywood industry. Their selection and proper use significantly impact plywood quality. Plywood adhesives are primarily

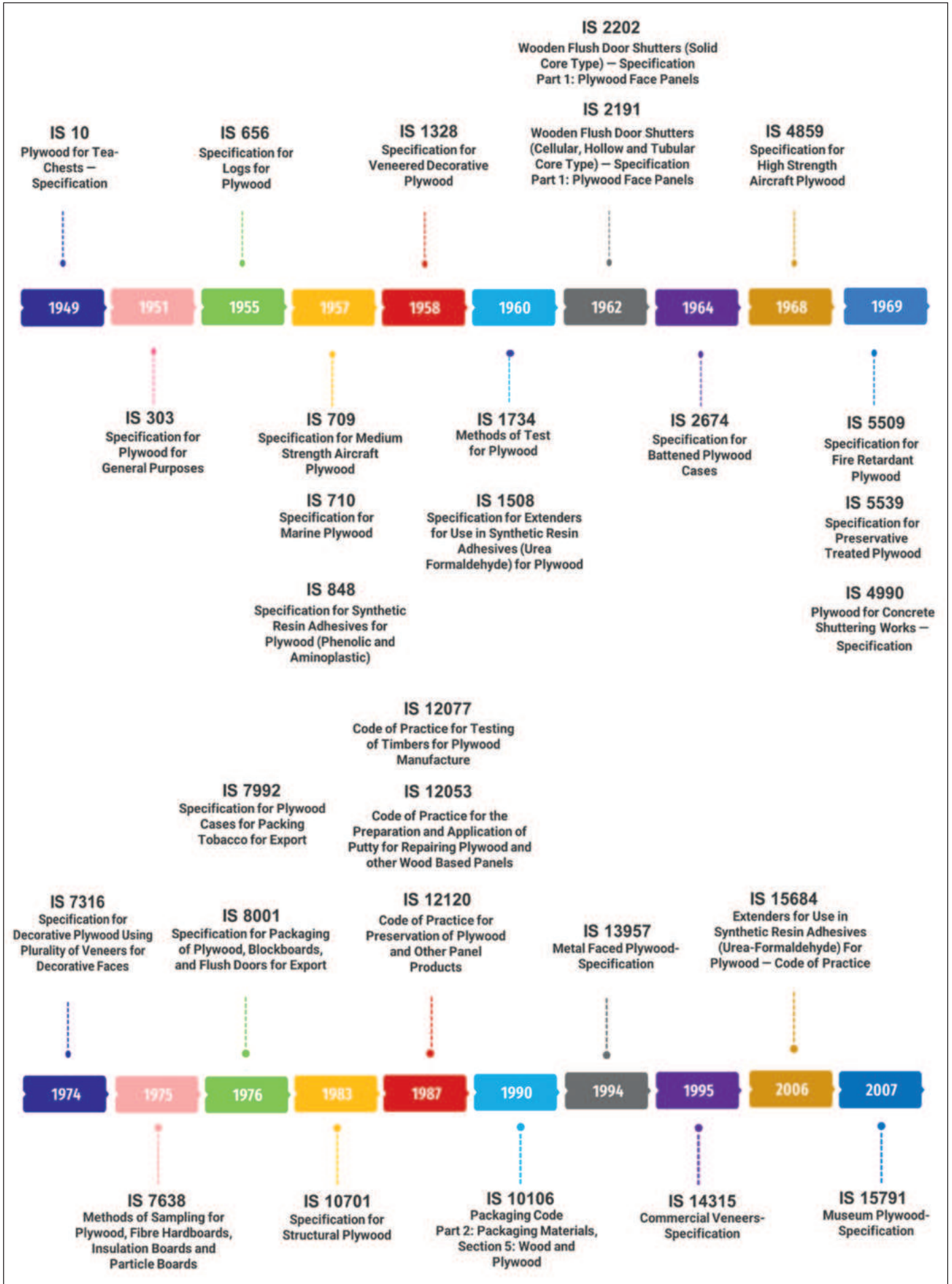
synthetic resins, such as phenolic and aminoplastic, the requirements of which are laid down in IS 848:2006 'Specification for synthetic resin adhesives for plywood (phenolic and aminoplastic)'. The quality of chemical raw materials used in their production follows respective Indian Standards. These adhesives require additives like solvents, fillers, extenders, catalysts, hardeners, fortifiers, and preservatives to enhance their bonding properties.

Extenders, typically derived from starch or protein-based organic materials, reduce adhesive costs and penetration while improving bond quality. They should disperse smoothly, maintain viscosity, improve the bonding capacity of the adhesive and aid in adhesive spreading without excessive dripping. Extenders also function as fillers in small proportions to alter the characteristic behavior of an adhesive during its application as well as in the cured product. Their proportion varies based on material properties and plywood grade, generally ranging from 15–30% for extenders and 10–15% for fillers on a solid resin basis. Since extenders directly impact adhesive performance, their quality must be assessed based on factors like moisture content, fineness of the granules, fat content, nitrogen levels and ash content, and acidity as these materials are perishable in nature and are expected to deteriorate in storage and become rancid due to bio-deterioration.

For ensuring proper selection and use of extenders in synthetic resin adhesives for plywood manufacturing, IS 15684: 2006 was introduced. Extenders covered under this standard cover the materials used with synthetic resin adhesives (urea-formaldehyde) for plywood, their method of use and the desired quality requirements when tested. Extenders covered under this standard are proteinous materials and starch based or amyloseous materials and that are widely used in the plywood industry.

4.5.4. IS 15791 - 2007: Museum Plywood-Specification

Plywood panels are widely used for display cases and storage cabinets in museums, art galleries, and similar institutions, where they house priceless artifacts that represent our cultural heritage. To ensure the preservation of these invaluable objects, it is essential that the materials used do not cause any damage over time. Recognizing this need, Indian Standard, IS 15791 was formulated in 2007 to establish stringent requirements for plywood intended for use in such institutions, ensuring its suitability for artifact storage and display. This standard specifies the requirements of plywood, including that of materials and manufacture; suitable for making shelves, cupboards, cabinets, etc., in museums, art galleries and other similar institutions.



5. Revision of Plywood Standards

India's plywood industry has come a long way from being largely unregulated to adopting stringent quality norms. The Bureau of Indian Standards (BIS) has been instrumental in defining benchmarks for plywood and engineered wood products. With rapid industrialization, issues such as substandard products, formaldehyde emissions, and non-uniform wood quality have necessitated continuous updates in standards.

Given the limited availability of high-quality wood and the environmental impact of deforestation, it was crucial to adopt efficient utilization strategies for wood and other lignocellulosic materials. This included optimizing timber use, minimizing waste through improved manufacturing processes, and developing durable products. Establishing standards for these aspects not only enhances product quality but also promotes the responsible use of wood-based panel products (Nandanwar and Singh, 2020).

With the decline in traditional raw material sources, panel industries increasingly relied on imported timber, plantation wood, and alternative lignocellulosic materials such as agricultural residues and bamboo. However, the lack of mandatory certification allowed substandard materials and processes, resulting in shorter product lifespans and frequent replacements. Enforcing compulsory certification for wood and panel products strengthens international competitiveness while contributing to forest conservation (Nandanwar and Singh, 2020).

Standards facilitate innovation by reducing the time to market for new products, promoting the diffusion of innovative products, leveling the innovation, and facilitating inter-operability in network industries thus creating the environment for the development of new products. To fulfill the quality requirements of standards, the manufacturers have to consider effective utilization of raw materials for manufacturing panel products depending on various factors such as selection of species, conversion of resources, removal of defects and improvement in quality, grading and selection of logs, design and ensuring minimum wastage (Nandanwar and Singh, 2021).

The plywood industry has witnessed significant technological developments in plywood manufacturing, including improvements in adhesives, veneer treatments, and preservative applications. The Bureau of Indian Standards has continuously revised existing standards to improve product durability and environmental sustainability. Most of the BIS standards including IS 303 (General Plywood), IS 710 (Marine Plywood), and IS 4990 (Shuttering Plywood), were designed when plywood

production relied on mature timber from natural forests. However, today, the industry depends on short-rotation plantation timber (5-7 years old), which has lower strength compared to older timber. Also, the BIS test parameters for plywood did not accommodate the physical and mechanical properties of plantation timber due to which many manufacturers face challenges in adhering to the latest standards, leading to unnecessary rejections and compliance challenges. As a result, these standards have been revised with a view of incorporating modifications found necessary as a result of experience gained in using the standards both by manufacturers and users (www.plyreporter.com).

The BIS norms initially lacked provisions for formaldehyde emissions in plywood. To address this issue, suggestions were gathered from stakeholders, and after careful evaluation and thorough discussions, the proposed amendments have been incorporated into the BIS standards. After including the VOC norms in the standard, 'made in India plywood products' the acceptability of plywood products will increase in international market (www.plyreporter.com).

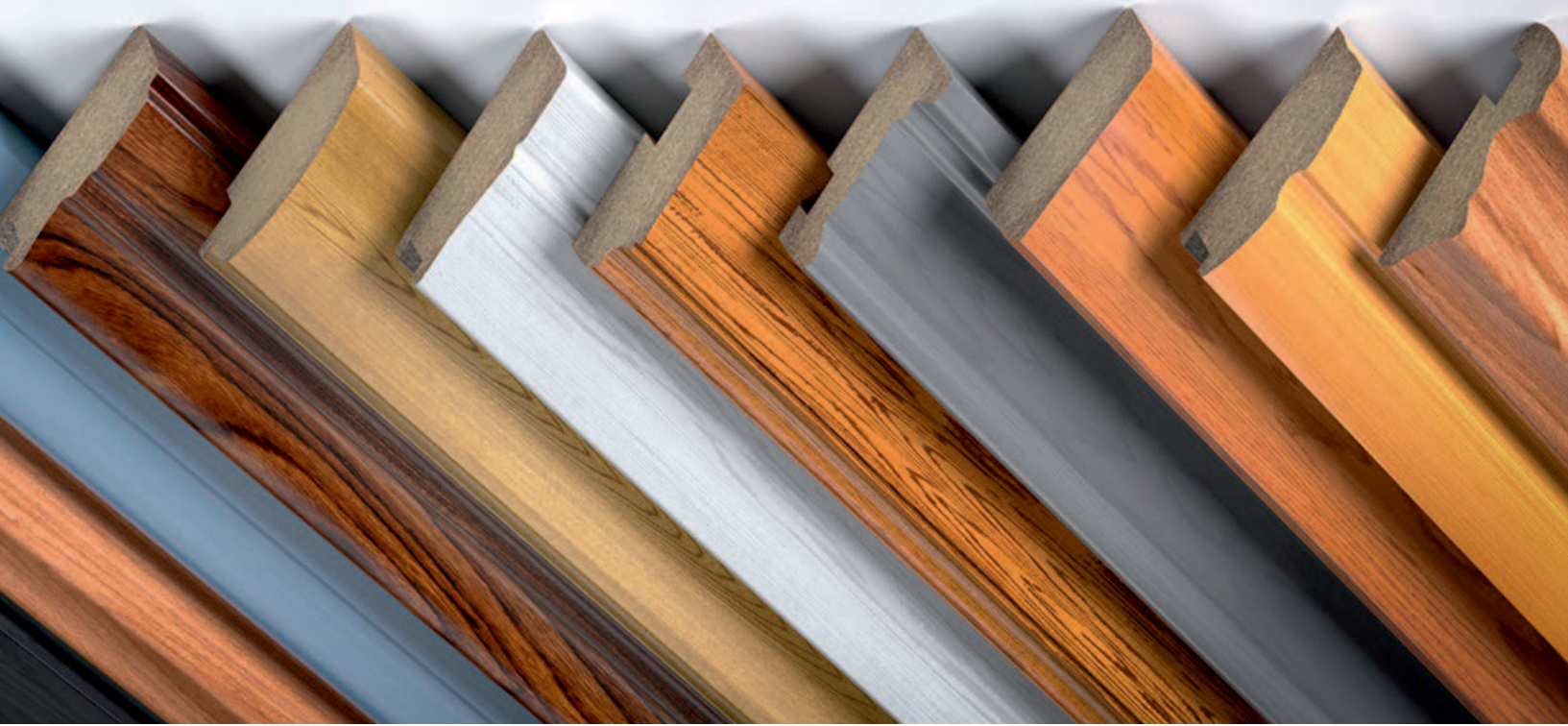
With globalization, India's plywood industry faced increased competition from international markets, necessitating the alignment of standards with global benchmarks. The adoption of ISO certifications, eco-labeling practices, and stringent formaldehyde emission standards became crucial for industry growth. The BIS has continuously updated standards to incorporate sustainability measures, fire resistance, and eco-friendly adhesives. These standards have evolved over time, addressing concerns related to strength, durability, environmental impact, and global trade requirements.

The plywood industry in India has also accepted mandatory quality control norms to ensure better standards. With the recent Quality Control Order, 2024 - Plywood for General Purposes and Wooden Flush Door Shutters effective from February 28, 2025, obtaining BIS certification has become essential for manufacturers, marking a new era of quality control in the sector. This will enhance product quality, consumer safety, and domestic manufacturing. The order requires products to comply with Indian Standards and display the Standard Mark. The Bureau of Indian Standards (BIS) is designated as the certifying and enforcing authority, with penalties for non-compliance under the BIS Act, 2016 (QCO Order, 2024, Ministry of Commerce and Industry). This initiative will instil consumer confidence, enhance market trust, ensure quality assurance, expand market access, and strengthen the competitiveness of certified products.

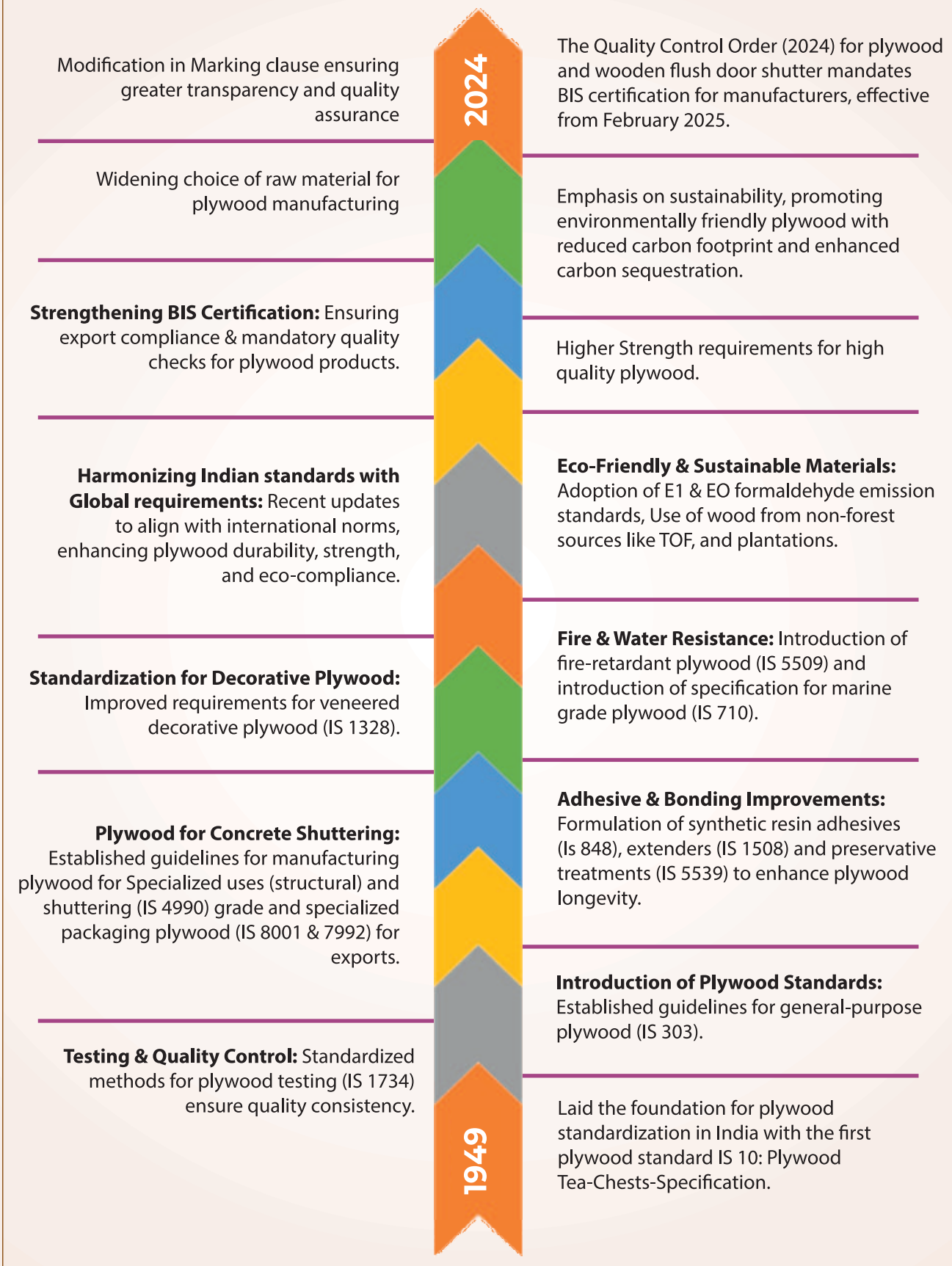
QUALITY & STANDARDS

The table given below summarizes the revisions over the years in the following Indian Standards for Plywood:

Standard	First Published	Revision over the years
IS 10: Plywood Tea Chests-Specification	1949	1953, 1964, 1970, 1976, 1996, 2013
IS 303: Plywood for General Purposes-Specification	1951	1960, 1975, 1989, 2024
IS 656: Logs for Plywood - Specification	1955	1964, 1975, 1988, 2023
IS 709: Specification for Medium Strength Aircraft Plywood	1957	1974
IS 710: Marine Plywood - Specification	1957	1976, 2010, 2024
IS 848: Synthetic Resin Adhesives for Plywood (Phenolic and Aminoplastic) - Specification	1957	1974, 2006
IS 1328: Veneered Decorative Plywood-Specification	1958	1970, 1982, 1996
IS 1508: Specification for Extenders for use in Synthetic Resin Adhesives (Urea Formaldehyde) for Plywood	1960	1972
IS 1734: Methods of Test for Plywood	1960	1972, 1983
IS 2191: Specification for Wooden Flush Door Shutters (Cellular and Hollow Core Type) Part 1: Plywood Face Panels	1962	1966, 1973, 1980, 1983, 2022
IS 2202: Wooden Flush Door Shutters (Solid Core Type) - Specification Part 1: Plywood Face Panels	1962	1966, 1973, 1980, 1983, 1991, 1999, 2023
IS 2674: Battened Plywood Cases - Specification	1964	1980, 1988, 2023
IS 4990: Plywood for Concrete Shuttering Works-Specification	1969	1981, 1990, 2011, 2024
IS 5509: Fire Retardant Plywood Specification	1969	1980, 2000, 2021
IS 7638: Methods of Sampling for Plywood, Fibre Hardboards, Insulation Boards and Particle Boards	1975	1986
IS 7992: Specification for Plywood Cases for Packing Tobacco for Export	1976	1983
IS 10701: Structural Plywood - Specification	1983	2012



Evolution of Plywood Standards in India



5.1. The detailed revision of the plywood standard, IS 303: 2024 – “Plywood for General Purposes — Specification” is given below:

The Bureau of Indian Standards (BIS) first introduced IS 303 in 1951, establishing the benchmark for General Purpose Plywood in India. Over the decades, this standard has undergone multiple revisions, adapting to technological advancements, environmental concerns, and industry needs.

The Indian Standard Specification for Commercial (Common) and Moisture-Proof Plywood (Tentative) (IS: 303-1951) was first published in 1951. It was widely adopted by Government Departments and other consumers for plywood procurement. However, it was observed that the standard does not cover all the grades of plywood which were marketed by the industry. Additionally, as grading was based on use rather than material quality, it led to inadequate understanding regarding the use and suitability of different grades of plywood.

To address the gaps identified in the standard, the first revision was adopted by the Indian Standards Institution on 17 May 1960. The revised version incorporated all the grades manufactured by the industry and introduced a grading system based on the quality of face veneers and adhesive types. The revised grading system resulted in eighteen grades of plywood with provisions for subsequent revisions as needed. It also specified appropriate timber species for each grade and introduced standardized board sizes and thicknesses. A significant advancement in this revision was the introduction of a glue adhesion test for multi-ply plywood specifying the method of stripping of the multi-ply to three-ply test specimens. This was based on the comparative studies by the Forest Research Institute, Dehradun; Government Test House, Calcutta; and Defence Research Laboratory (Stores), Kanpur which indicated that the new stripping method for three-ply test specimens yielded more consistent and reproducible results.

The second revision of this standard was adopted on 27 January 1975 by the Indian Standards Institution. This revision incorporated four amendments from the first revision. A major change was the introduction of the Boiling Water Proof (BWP) or exterior-grade plywood manufactured using unextended phenol-formaldehyde adhesive, enhancing durability for outdoor applications. Additionally, a new 'D' quality face veneer was permitted, expanding the classification to 10 types of plywood based on appearance. To streamline testing, this revision also omitted various test methods from IS: 303-1960 for evaluating the properties of general-purpose plywood,

and a reference was made to the corresponding tests laid down in IS: 1734 (Parts I to XX)-1972.

The third revision of IS 303, adopted by the Bureau of Indian Standards on 21 December 1989, brought significant changes to enhance plywood classification and testing parameters. The BWR (Boiling Water Resistant) and CWR (Cold Water Resistant) grades were removed, while the WWR (Weather and Water Resistant) grade was replaced with the Moisture Resistant (MR) grade. Additionally, the temperature of water in which test piece shall be immersed was reduced from $70 \pm 2^\circ\text{C}$ to $60 \pm 2^\circ\text{C}$ under normal atmospheric pressure. This revision also simplified the appearance-based classification by eliminating face 'A' and 'D' quality plywood, retaining only face 'B' and 'C', which were renamed as 'A' and 'B'. As a result, the standard classified three plywood types based on appearance.

The fourth and the latest revision of IS 303 adopted in May 2024 introduced significant modifications to enhance plywood quality, durability, and environmental responsibility. Key changes include updates to the material clause for timber in which wood from non-forest sources such as Tree Outside Forests (TOF), agroforestry, plantations (rubber, coconut, cashew, walnut, industrial, social forestry), and shade trees from tea and coffee estates is recommended for plywood manufacturing. Other modifications include the addition of the Boiling Water Proof (BWP) grade, modifications in clauses related to extenders, dimensions, and mechanical properties including Modulus of Rupture (MOR) and Modulus of Elasticity (MOE). Additionally, mycological testing has been made applicable to all grades. The formaldehyde content test and requirements for oven-dry boards and steady-state formaldehyde emissions (optional) have been introduced. The marking clause has also been revised in the latest revision of the standard.

A major development in this revision is the introduction of the ECO-Mark—a certification for environmentally friendly products, initiated by the Ministry of Environment, Forests, and Climate Change, Government of India. The ECO-Mark is granted to plywood products meeting both BIS certification (ISI Mark) and additional eco-friendly criteria. Manufacturers, however, have the flexibility to opt for the ISI Mark alone. This revision also aligns IS 303 with the United Nations Sustainable Development Goal (SDG) 9, promoting resilient infrastructure, sustainable industrialization, and innovation.

Over the decades, this standard has undergone various revisions adapting to meet modern industry demands, ensuring higher quality, sustainability, and consumer safety. With stricter quality control, improved adhesives,

enhanced strength properties, and environmental compliance, IS 303:2024 strengthens the Indian plywood industry, making it more competitive, ensuring that plywood manufacturing aligns with international standards and sustainability goals.

5.2. The detailed revision of the plywood standard, IS 710: 2024 – “Marine Plywood— Specification” is given below:

Indian standard, IS 710 for Marine Plywood—Specification was first published in 1957 to address the need for high-quality plywood that could withstand extreme environmental conditions. Plywood used in marine and river craft applications is exposed to temperature variations, humidity changes, and cycles of wetting and drying. Additionally, it must resist marine organisms that can degrade the material over time. Since commercially available plywood was found unsuitable for these demanding conditions, the Wood Products Sectional Committee, under the guidance of the Ministry of Defence, developed this specification to ensure the use of appropriate raw materials, adhesives, and manufacturing processes. The aim was to produce a plywood variant that could sustain prolonged exposure to moisture and mechanical stress without compromising structural integrity.

Nearly two decades after its initial publication, the standard underwent its first revision in 1976 to address the evolving requirements and advancements in marine plywood manufacturing. In this revision, details of methods of tests were omitted and cross references were given to the relevant methods of tests in IS 1734 (Parts 1 to 20): 1983 ‘Methods of test for plywood’. Additionally, Clause 4.2.3.4 was introduced, requiring an agreement between the purchaser and the manufacturer, ensuring clarity in material specifications and quality expectations.

The second revision of IS 710 was published in 2010, following the experience gained in manufacture and use of the product over the years reflecting advancements in plywood manufacturing. This revision addressed the scarcity of natural forest timber by permitting the use of plantation-grown species such as poplar, eucalyptus, and silver oak, which had been tested and found suitable for marine plywood production. Another revision was the addition of an alternate accelerated water resistance test method, designed to evaluate the durability of plywood under prolonged exposure to moisture. Furthermore, a new test requirement on wet bending strength was introduced to ensure that plywood could maintain its structural integrity even after continuous wetting and

drying cycles. This revision also introduced an eco-labeling scheme called ECO-Mark, initiated by the Ministry of Environment and Forests, Government of India.

The third revision in 2024 brought further refinements to IS 710, incorporating modern technological advancements and environmental considerations. The material clause for timber was modified to accommodate evolving forestry practices and sustainable sourcing policies. The dimension clause was also updated to ensure uniformity and compatibility with industry standards. The revision introduced enhanced mechanical property requirements, including changes to the Modulus of Rupture (MOR), Modulus of Elasticity (MOE), and tensile strength, ensuring improved strength and durability of marine plywood. Additionally, new formaldehyde content regulations were established for oven-dry board, with an optional steady-state formaldehyde emission test to improve air quality and consumer safety. The marking clause was also revised to enhance product labelling, ensuring better traceability, certification, and environmental compliance.

Over the years, IS 710 has undergone multiple revisions to meet industry demands, improve performance, and promote sustainability. The 2024 revision represents a step forward in ensuring that marine plywood remains highly durable, structurally sound, and environmentally responsible. By continuously refining the standard, India’s plywood industry remains competitive while meeting the evolving needs of marine construction and maintenance.

5.3. The detailed revision of the plywood standard, IS 4990: 2024 – “Plywood for Concrete Shuttering Works— Specification” is given below:

Plywood for concrete shuttering works is a BWP-grade, preservative-treated plywood designed for use in formwork. It is highly economical due to its reusability, provided proper handling is ensured.

The Indian standard for concrete shuttering plywood was first published in 1969 and subsequently revised in 1981, 1990, 2011 followed by the latest revision in 2024. The second revision introduced several key modifications to align with industry advancements and practical experience. Among these changes was the allowance for the use of any timber species, provided they meet all other requirements specified in the standard. Additionally, three distinct types of plywood—Type 1 (Plain), Type 2 (Coated), and Type 3 (Film-faced)—were categorized. The revision also established a minimum thickness requirement for face veneers, redefined the quantity of phenol formaldehyde or cresol formaldehyde required for manufacturing

plywood with plastic coating or other overlays, and new specifications for modulus of elasticity and corresponding testing methods were included.

The third revision was undertaken to reflect further developments in the field and the insights gained from the manufacturing and use of the product over time. This revision introduced an alternative accelerated test method for water resistance. A new requirement for wet bending strength was specified, along with the inclusion of an appropriate test method. Additionally, glue shear strength requirements were introduced, with specifications based on different percentages of average wood failure observed. This revision also incorporated recommendations for the handling, storage, and usage of plywood in concrete shuttering and formwork. At the initiative of the Ministry of Environment and Forests, Government of India, a scheme for labelling environment-friendly products, known as ECO-Mark, was also introduced.

The fourth and most recent revision in 2024 has brought several significant updates to enhance the quality and performance of plywood used for concrete shuttering. The material clause concerning timber has been revised to ensure better compliance with modern standards. The dimension clause has also been modified to improve uniformity in production. Furthermore, the specifications for Modulus of Rupture (MOR), Modulus of Elasticity (MOE), and tensile strength have been updated to meet evolving structural requirements. New provisions have been introduced for assessing formaldehyde content in oven-dry boards, along with an optional steady-state formaldehyde emission test. Lastly, the marking clause has been revised to align with current industry practices and regulatory requirements.

6. Conclusion

The evolution of plywood standards in India has been a century-long journey, reflecting the industry's growth and adaptation to changing market demands and environmental concerns. Standardization has played a crucial role in enhancing plywood quality, ensuring consistency, reliability, and improved performance across various applications. With increasing environmental concerns, revisions in standards have encouraged the use of low-emission formaldehyde adhesives and plantation-based timber species, reducing reliance on natural forests.

The revision of plywood standards marks a significant step toward enhancing product quality, durability, and sustainability. For manufacturers, the updated standards

provide clearer guidelines on raw materials, adhesives, and performance requirements, ensuring greater product reliability and compliance with international norms. However, the implementation of Quality Control Orders (QCOs) has also posed challenges for some manufacturers, particularly small and medium enterprises (SMEs). While these regulations enhance market credibility by eliminating substandard products, they also necessitate financial and technical support for smaller manufacturers to adapt to the evolving requirements.

From a market perspective, the revised standards and QCOs are expected to enhance consumer trust and drive industry growth by eliminating uncertified products. Industries such as construction, furniture, and interior design will benefit from standardized, high-quality plywood, improving structural integrity and aesthetics in end-use applications. For consumers, the new standards ensure safer, longer-lasting plywood with improved performance and better value for money.

Looking ahead, the need for developing new plywood standards in alignment with international benchmarks is crucial. The Standardization Cell of various organizations is actively working on new standards for specialized plywood types, such as flexi ply and moulded ply, along with amendments to existing standards like plywood for general purposes and shuttering plywood. Addressing research gaps, particularly in areas such as improved durability, and performance optimization, is essential to keep pace with global innovations.

Raising awareness among dealers and manufacturers about proper storage, labelling, and compliance with marking requirements is another critical aspect. More awareness programs are needed to educate stakeholders about best practices in handling plywood products to ensure compliance and quality retention as well as to avoid rejections. Additionally, promoting sustainability through plantation drives and responsible sourcing of timber should be prioritized to reduce environmental impact.

To support MSMEs, the development of cluster laboratories for quality testing and compliance verification is essential. These facilities will provide technical assistance to small-scale manufacturers, enabling them to meet the revised standards without significant financial strain.

As the demand for high-quality plywood continues to grow, aligning Indian standards with global best practices will ensure a competitive, sustainable, and consumer-friendly market. □



FIPPI's Strategic Engagement with BIS for Standardization

The Civil Engineering Department (CED) of the Bureau of Indian Standards (BIS) has initiated the formulation of the Annual Programme for Standardization (APS) for 2025–26, aimed at strengthening India's standardization framework. In pursuit of this, BIS called upon industry associations to provide valuable inputs for development of new standards and suggesting revisions to existing Indian Standards. These efforts are designed to align the national standards with evolving industrial requirements, emerging technologies, and global best practices.

In response to this initiative, a physical meeting was held on 11th March, 2025 at Manak Bhawan, New Delhi. During this session, the Federation of Indian Plywood & Panel Industry (FIPPI) nominated expert representatives from the Standardization Cell, presenting technical proposals, and forming a dedicated committee to support BIS in the standardization process. The following representatives were nominated from FIPPI to present on the proposed subjects:

1. Shri Shiv Prakash (Greenply) – Development of Standard on FlexiPly
2. Shri Rajeshwar Nair (Action Tesa) – Development of Standard on Fire Retardant MDF
3. Dr. Puroshottam Sharma (Green Panel) – Development of Standard on Fire Retardant Particle Board
4. Shri Sumit Roy (Century Ply) – Revision of IS 710 and IS 4990 for Preservative and Glue Line Treatment
5. Shri Aditya Gupta (Northern Plywood) – Revision of IS 1659 (Block Board)

New Standards Proposed by FIPPI

1. Development of Standards for Fire-Retardant MDF and Particle Board

The growing awareness of fire safety regulations, rapid urbanization leading to increased construction activities,

Fire Retardant Medium Density Fiberboard (FR MDF)
Understanding the significance of FR MDF in modern construction and design.

- Definition and Features of FR MDF:** Fire Retardant Medium Density Fiberboard (FR MDF) is an engineered wood product made from wood fibres bonded with adhesives under heat and pressure. The key feature of FR MDF is the inclusion of fire retardant additives, which help to slow down flame spread and minimize smoke production during a fire, thereby enhancing safety.
- Applications Across Various Industries:** FR MDF is widely utilized in various sectors, including furniture production, cabinetry, wall paneling, and decorative applications. Its fire-resistant properties make it especially valuable in environments such as commercial buildings, schools, hospitals, and hotels where fire safety is a top priority.
- Factors Driving Demand in India:** The demand for FR MDF in India is significantly influenced by rapid urbanization, increased construction activities, and stricter fire safety regulations. As awareness of fire hazards rises, consumers are leaning towards building materials that offer superior fire resistance, particularly in residential and commercial settings.
- Importance of Establishing an Indian Standard for FR MDF:** Establishing an Indian Standard for FR MDF is crucial for ensuring quality benchmarks and safety guarantees. It would provide manufacturers with guidelines to follow best practices in production and material selection, promoting consistent performance and enhancing consumer trust.
- Summary of Benefits of an Indian Standard:** Implementing a standard for FR MDF would not only ensure public safety and regulatory compliance but also foster market growth and innovation. By aligning Indian products with international safety norms, it could expand market opportunities both domestically and internationally.

Justification for Indian Standard on Fire Retardant Particleboard
Establishing safety and innovation in fire safety materials.

- Importance of Fire Retardant Particleboard:** Fire retardant particleboard is vital in construction and furniture making due to its inherent fire-resistant properties, which are essential for enhancing safety in various applications.
- Urbanization and Growing Demand:** India's rapid urbanization and significant infrastructure development are increasing the use of particleboard in both residential and commercial sectors, underscoring the need for standardized fire safety materials.
- Compliance with Fire Safety Regulations:** As fire safety regulations become more stringent, having standardized products that meet these requirements is crucial. This ensures that materials used in construction are rigorously tested and compliant with safety standards.
- Consumer Protection through Standards:** Establishing standards for fire retardant particleboard protects consumers by ensuring they receive safe and reliable products, thereby reducing the risk of fire-related incidents in homes and workplaces.
- Stimulating Industry Growth and Innovation:** A formal standard will provide quality benchmarks that stimulate growth within the local manufacturing industry, encouraging manufacturers to innovate and improve production processes for better fire-retardant materials.
- Environmental Sustainability Considerations:** With sustainability becoming increasingly important, consumers can guide manufacturers towards adopting eco-friendly production practices, aligning with India's broader sustainability goals.
- Alignment with International Standards:** Creating an Indian standard will ensure that local products are aligned with international benchmarks such as ISO 70 and ISO 90, enhancing the competitiveness of Indian manufacturers in the global market.
- Training and Awareness for Stakeholders:** Standards serve as educational tools for stakeholders, including manufacturers, builders, and architects, promoting their understanding of the material's properties and promoting informed decision-making.
- Reduction in Fire Incidents:** By establishing robust standards, we can significantly reduce the frequency and severity of fire incidents, protecting lives and property while contributing to community well-being and public trust in building materials.
- Urgent Need for Standards:** There is an urgent need for an Indian standard for fire retardant particleboard, which will support safety, promote industry growth, protect consumers, and align with environmental sustainability efforts.

and rising consumer preferences for compliant and safer building materials are propelling the demand for fire-retardant MDF and particleboard in India. This will align Indian fire safety standards with global benchmarks to improve safety. Engineered wood products treated with fire-retardant chemicals reduce flammability and delay ignition making them suitable for high-risk applications.

2. Development of Standard for Flexible Plywood (Flexi-Ply)

Flexi Plywood is suitable to make curvature, semi-round, full round, wavy designs, important for interior designs & aesthetics. Unlike regular plywood, which is generally rigid and used for flat applications, flexible plywood can be bent or curved without breaking. This makes it an ideal material for applications that require curved surfaces and unique shapes. There is no standard to cover this product.

Why Indian Standards for Flexible Plywood Are Essential
Understanding the Importance of Flexible Plywood Standards in India

- Definition of Flexible Plywood:** Flexible plywood, commonly known as "Flexply", is crafted by gluing thin layers of wood veneers together, resulting in a highly bendable material suitable for various applications.
- Applications in Furniture Design:** Flexply is extensively used in creating curved furniture, such as chairs and tables, allowing for innovative designs that enhance aesthetics and functionality.
- Interior Decoration Uses:** It is perfect for interior decoration projects, including wall panels and false ceilings, enabling unique artistic expressions without compromising durability.
- Significance in Boat Building:** Due to its lightweight and waterproof properties, flexible plywood is a preferred choice in boat construction, particularly for hulls and interiors.
- Architectural Applications:** Flexply is utilized in designing arches and domes, contributing to modern architectural features that require both strength and flexibility.
- Role in Theater and Set Design:** In theater production, flexible plywood's ability to be bent and shaped makes it ideal for creating complex stage sets, enhancing the visual appeal of performances.
- Rising Demand in India:** The demand for flexible plywood in India is increasing, driven by urbanization, a growing housing sector, and the need for aesthetically pleasing interiors.
- Importance of Standards for Quality:** Establishing Indian standards for flexible plywood ensures that products meet safety and performance criteria, protecting users and enhancing construction durability.

Revisions / Amendments Proposed

1. Amendment to IS 710 (Marine Plywood) and IS 4990 (Shuttering Plywood)

This standard specifies the requirements for marine plywood, including materials, manufacturing processes, and performance criteria. It emphasizes durability, water

resistance, and chemical resistance. Indian standard often specifies minimum retention levels for preservatives like CCA (copper-chrome-arsenic) or CCB (copper-chrome-boron). For example, IS 710 requires a minimum retention of 12 kg/m³ for CCA or CCB compositions. In view of new studies on human health and environment it was recommended to use organic molecule in glue line which can provide equally good results as compared to inorganic molecules like -Bifenthrin, Chlorpyrifos and Fipronil as there are enough reports to confirm this.



2. Revision of IS 1659 (Block Board)



Formation of Expert Committee for drafting and revision of standards

To expedite the work, FIPPI constituted the Thematic Technical Coordination Committees (FIPPI-TTCC) to initiate the drafting and revision process of the standards. These committees comprised of industry experts, researchers from leading wood-based industries and scientists from institutions such as IWST. The members engaged in extensive discussions during these sessions to proceed with the formulation of draft proposals for new standards and revision of existing standards based on practical industry insights and scientific research. Several meetings were held to initiate the process and work towards the preparation of the Annual Programme for Standardization (APS).



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

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Office Memorandum: FIPPI/16-3-1/2025 Dated March 3, 2025

CONSTITUTION OF THEMATIC TECHNICAL COORDINATION COMMITTEE (FIPPI-TTCC) FOR STANDARD DEVELOPMENT 2025-26

Director General, Federation of Indian Plywood & Panel Industry (FIPPI) is pleased to constitute following thematic technical coordination committees (FIPPI-TTCC) for expeditious development of wood products:

A. New Standards to Support Industry Growth, Innovation, and Regulatory Needs

- Development of Standard on Flexi-Ply** (M/S Green Ply has sponsored this project to IWST)
 - Dr C.N Pandey (Senior Technical Advisor, FIPPI)-Coordinator
 - Shri Shiv Parkash (M/S Green ply)-Member
 - Shri Sumit Roy (M/S Century Ply)-Member
 - Shri Abhishek Chitlangia (M/S Duro Ply)-Member
 - Shri N Anand, Scientist F-IWST Invitee Member
- Development of Standard on Fire Retardant MDF & Particle Board**
 - Dr C.N Pandey (Senior Technical Advisor, FIPPI) -Coordinator
 - Dr Purosottam Sharma (M/S Green Panel) -Member
 - Shri Murli Bhaskar Sharma (M/S Greenlam)- Member
 - Shri Vinay Chaturvedi (M/S Century Ply)-Member
 - Shri Koushlesh Pandey (Balaji Action Buildwell)- Member
 - Shri G S Achary (M/S Century) -Member
 - Shri Nair (M/S Action Tesa) -Member
 - Dr B.S. Mamata Scientist F IWST -Invitee Member
- Development of Standard on High-Density MDF** (Project Sponsored to IWST by M/S Action Tesa)

B. Revision of Existing Standards to Improve Clarity or Address Industry Concerns

- Protection of Plywood Against Biological Agencies Through Glue Line** Treatment including revision of preservatives retention norms for Marine Grade Plywood Standard - IS710 & Shuttering Grade Ply IS 4490
- Committee Members:**
 - Dr CN Pandey (Senior Technical Advisor, FIPPI) -Coordinator
 - Shri Dhanesh Pandey (M/S Century ply)-Member
 - Shri Shiv Parkash (M/S Green ply)-Member
 - Shri JK Bihani, HPMA-Member
 - Shri Latendu Rath, M/S Greenlam-Member
 - Shri Manoj Gwari, WTA-Member
 - Shri Sumit Roy (M/S Century)-Member
 - Dr. Narasimha Murty, Scientist (IWST)-Invitee Member

The committee shall expedite the submission of zero draft to BIS as early as possible.

Anthony Fernandes

Anthony Fernandes
Office Secretary
Federation of Indian Plywood & Panel Industry

A. New Standards to Support Industry Growth, Innovation, and Regulatory Needs

The Federation of Indian Plywood & Panel Industry (FIPPI) has constituted a committee comprising industry professionals and technical experts to contribute to the development of new standards. Based on feedback received from manufacturers and subject matter experts, FIPPI has prepared and submitted two draft proposals to the Civil Engineering Division Council (CED 20) of the Bureau of Indian Standards (BIS). The proposed drafts are as follows:

A1. DRAFT LAMINATED FLOORING COVERING – SPECIFICATION & REQUIREMENTS

1. SCOPE

This Standard specifies characteristics, states requirements and gives test methods for laminate floor coverings. Laminate floor coverings are considered for domestic and commercial levels of use. This standard does not specify requirements relating to areas which are subjected to frequent wetting, such as bathrooms, laundry rooms or saunas, but it does apply to domestic kitchens.

2. REFERENCES

The standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in AnnexA.

3. TERMS AND DEFINITIONS

Laminate Flooring: A rigid floor covering, typically in a plank or tile format, having a multiple layer product structure, e.g., backer, substrate, overlay, and decor. The planks/tiles have worked edges that allow the product to be joined together to form a larger integral unit. The product may vary in surface texture and gloss. Laminate flooring does not include products having a resilient, stone, textile, wood, leather, or metal top surfacing material (s).

Laminate floor covering - Floor covering with a surface layer consisting of high wear resistance aluminum oxide overlay and decorative paper (usually paper), impregnated with amino plastic, thermosetting resins (usually melamine).

3.1.1. Surface layer - Upper decorative layer intended to be the visible side when the floor is installed.

3.1.2. Substrate - Core material (Medium density fiber board or high-density fiber board) of the laminate floor covering.

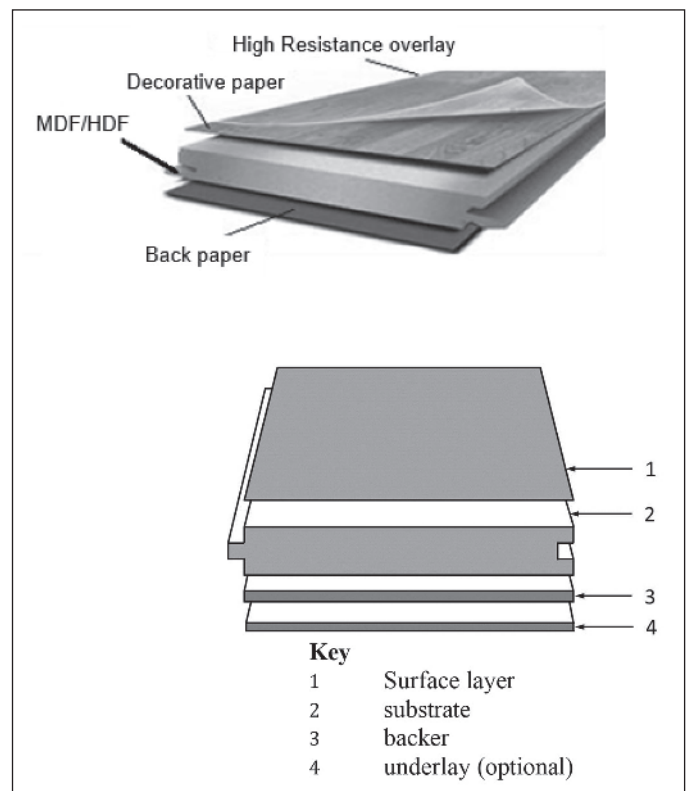
3.1.3. Backing layer - A material bonded to the back of the substrate opposite to the surface layer.

3.1.4. Laminate floor covering element - Consisting of a surface layer, a substrate and a backing, shaped and machined on its sides to the appropriate dimensions.

3.1.5. Decor Layer - The layer of laminate flooring providing visual aesthetic properties.

3.1.6. Impregnated Base Paper - Printed or plain colored absorbent base paper having a weight of 60-140 g/m² impregnated in a suitable synthetic resin and dried to a volatile content of 4-8 percent shall be used for prelamination on both surfaces of fibre board.

3.1.7. Impregnated Overlay - An absorbent tissue paper having a weight of 18-40 g/m² impregnated in a suitable synthetic resin and dried to a volatile content of 4-8 percent, shall be used for prelamination on both surfaces of fibre board.



4. GRADES AND TYPES

4.1. Laminated flooring board shall be of following classification:

1. Residential (R)
2. Light commercial (LC)
3. Commercial (C)
4. Heavy commercial (HC)

5. MATERIALS

- a. **Medium or High-Density Fibre Board:** Synthetic resin bonded medium density fibre board or high-density fibre board used for the manufacture of prelaminated medium density fibre board or high-density fibre board shall conform to IS 12406.
- b. **Impregnated Base Paper:** Printed or plain colored absorbent base paper having a weight of 60-120 g/m² impregnated in a suitable synthetic resin and dried to a volatile content of 4-8 percent shall be used for prelamination on both surface of flooring board which shall confirm to IS 14587.
- c. **Impregnated Overlay:** A high wear resistance overlay having a weight of 18-60 g/m² impregnated in a suitable resin and dried to a volatile content of 4-8 percent, shall be used for prelamination on both surface of laminated flooring board which shall confirm to IS 14587.

6. MANUFACTURE

- a. Laminated flooring board having a dense, compact, homogenous construction with super smooth surface is used for making laminated flooring board. Impregnated base paper & high wear resistance overlay paper, rich in synthetic resin are placed on either side of the flooring board and the assembly is taken inside a short cycle single opening laminated press or a multiday light press. Under heat and pressure, the resin flows and forms a permanent bond with the flooring board.

The top surface of impregnated paper comes in contact with special surfaced chromium plates or steel caul plates and takes the impregnated of surface finish of these cauls. Hot boards are extracted out of the short cycle press and cooled in air, whereas cooling of board is done inside the press in multiday light type. Care shall be taken to keep cycle time low in the press to avoid heat penetration to the centre of the board edge.

- i. The impregnated high wear resistance overlay paper may be used by placing it over the impregnated base paper (IBP) by one surface while using a normal IBP on the other surface and pressed under the influence of heat and pressure. The impregnated overlay becomes transparent after pressing. Such boards are used for high surface abrasion applications.
- ii. **Cutting:** The cured laminated board shall be cut into required size using a rip saw machine.
- iii. **Profiling:** The cut laminated board after rip saw

shall be profiled length wise and width wise using a profiling machine to provide a profile for locking of flooring planks.

- iv. **Waxing:** The profiled flooring plank's all four edges which have been profiled by profiler shall be coated by wax layer to provide moisture resistance.
- v. **Preservative Treatment:** The boards used for the lamination should be having preservative treatment as per IS 12406 clause number 5.4 to provide termite / fungus resistance.

7. FINISH

The finish of the paper overlaid board depends on the surface of caul plates used. Common surface finishes in use are glossy, matt textured (Dew Drop, Swede, wood texture and leather), etc.

8. DIMENSIONS AND TOLERANCES

Dimension as agreed between the manufacture and the purchaser may be used. Dimensions and tolerances shall conform to Table 1 when tested as per Annex C.

9. SAMPLING AND INSPECTION

a. Scale of Sampling

- i. Lot
In any consignment all the laminated flooring board of the same grade, types and dimensions, and manufactured under similar conditions of production, shall be grouped together to constitute a lot.
- 1. The conformity of a lot to the requirements of the specification shall be ascertained on the basis of tests of laminated flooring board selected from it.
- ii. The number of laminated flooring board to be selected from a lot shall be as follows.as per IS 14587 clause number 9.1.2.

Scale of Sampling

Sl No.	Lot Size N	Number of Laminated flooring board to be selected n
(1)	(2)	(3)
i)	Up to 50	2
ii)	51-100	3
iii)	101-200	4
iv)	201-300	5
v)	301-500	7
vi)	501 and above	10

These laminated flooring boards shall be selected at random (see IS 4905). In order to ensure randomness of selection, all the laminated flooring board in the lot may be arranged in a serial in an order and every r^{th} laminated flooring board may be selected till the required number is obtained, r being the integral part of N/n , where N is the lot size and n is the sample size.

- iii. All boards tested as specified in IS 2380 (Part-2) for length, width, thickness, edge straightness and Squareness, shall comply with the requirement specified under Table 1.

10. TEST SPECIMENS AND NUMBER OF TESTS

Form each of the laminated flooring board selected as in 9.1.2.1 following test, three specimens shall be cut out from portions 150 mm away from the edges for tests and conditioned as specified in IS 2380 (Part-1).

i. For Determination of density

Three test specimens 75 mm wide and 150 mm long, in full thickness of the board from each sample shall be tested. Other sizes of specimens may be used when deemed necessary. The density of the board shall be determined for each test specimens in accordance with the method prescribed in IS 2380 (Part-3), and the average value shall be between 800 and 950 kg/m³ and the variations in the board shall comply with the requirements specimens in Table 1.

ii. For Swelling in Water Test

Three test specimens of size 200 mm X 100 mm in full thickness of the board form each sample shall be tested. The swelling in thickness shall be determined for each test specimens in accordance with the method prescribed in SI 2380 (Part-17) for 2 hours soaking in water and the average value shall not exceed the limits specified in Table 1.

iii. For Determination of Modulus of Rupture and Modulus of Elasticity

Three test specimens from each sample shall be tested as specified in IS 2380 (Part-4). The Modulus of Rupture and Modulus of Elasticity shall be determined for each test specimens in accordance with the method prescribed in SI 2380 (Part-4) and the average value shall not be less than the requirement laid down in Table 1.

iv. For Determination of Tensile Strength Perpendicular to surface

Three test specimens of size 50 mm X 50 mm in full

thickness of board from each sample shall be tested. Tensile strength perpendicular to surface shall be determined for each test specimens in accordance with the method prescribed in IS 2380 (Part-5) and the average value shall not be less than the values specified in Table 1.

v. For Determining the Resistance to Abrasion

Three test specimens of size about 130 mm diameter or a square of about 120 mm with its corners rounded to given a diagonal of about 130 mm in full thickness of board from each sample. The abrasion resistance shall be determined for each test specimen in accordance with the method prescribed in Annex B and shall comply with the requirements specified in Table 1.

vi. For Determining the Impact Indentation

Three test specimens of size 100 mm X 100 mm in full thickness of the board each sample shall be tested as per IS 4020-Part 5. The impact resistance of the board shall be determined for each test specimens in accordance with the method prescribed in IS 4020 (Part 5) in Table 1.

vii. For Determining of Cigarette Burn

Three test specimens of size 200 mm X 100 mm in full thickness of board from each sample shall be tested. The resistance to cigarette burn shall be determined for each test specimen in accordance with the method prescribed in IS 2046 and the specimen shall not leave any stain on the specimen after clearing with water or solvent in Table 1.

viii. For Determining Resistance to Stain

Three test specimens of size 75 mm X 25 mm in full thickness from each sample shall be tested. The resistance to stain shall be determined for each test specimen in accordance with the method prescribed in IS 14587 Annex G shall comply with the requirement specified in Table 1.

ix. For Determining Static Indentation

Three test pieces with a surface area of size 75mm x 150 mm shall be tested as per IS 2380 (Part XI). The Static Indentation shall be determined for each test specimen in accordance with the method prescribed IS 2380 (Part XI) shall comply with the requirements specified in Table 1.

x. Dimensional variations after changes in relative humidity

QUALITY & STANDARDS

Three test pieces of 200 mm X 10 mm and full thickness of the board shall be tested as per IS 2380 (Part XIII) shall comply with the requirements specified in Table 1.

- K) **For determining resistance to attack by micro-organisms (mycological test):** Three test pieces of 200 X 200 mm and full thickness of the board shall

be tested as per IS 1734 (Part 7) shall comply with the requirement specified in Table 1.

11. CRITERIA FOR CONFORMITY

A lot shall be considered as conforming to the requirement of the specifications, if no group of test specimens for any of the characteristics fails to meet the conditions as prescribed in 9 and 10.

Table 1: Physical and Mechanical Properties.

S. No.	Property	Level of Use			
		Residential	Domestic Heavy/ Commercial Moderate	Commercial General	Commercial Heavy
1.	Dimensions and tolerances				
	Length	For the nominal values given, no measured value shall exceed: $l \leq 1\,500\text{ mm}: \Delta l \leq 0,5\text{ mm}$ $l > 1\,500\text{ mm}: \Delta l \leq 0,3\text{ mm/m}$			
	Width	Δw average $\leq 0,10\text{ mm}$, relative to nominal value W max. - w min. $\leq 0,20\text{ mm}$			
	Thickness	Δt average $\leq 0,50\text{ mm}$, relative to nominal value T max.- t min. $\leq 0,50\text{ mm}$			
	Squareness of the element, (q)	q max. $\leq 0,20\text{ mm}$			
	Flatness of the element, (f)	Maximum single values: f_w , concave $\leq 0,15\%$ f_w , convex $\leq 0,20\%$ f_l , concave $\leq 0,50\%$ f_l , convex $\leq 1,00\%$			
2.	Dimensional variations after changes in relative humidity, (δl , δw)	δw average $\leq 0,9\text{ mm}$ δl average $\leq 0,9\text{ mm}$			
3.	Formaldehyde content (Fc), mg/100 gm for oven dry board Steady-state formaldehyde emission, Fc, mg/m ³ (optional test)	E1: Fc ≤ 8 E2: $8 < Fc \leq 30$ E1: Fc ≤ 0.124 E2: Fc > 0.124			
4.	Static indentation	residual indentation $\leq 0,05\text{ mm}$ (1000 lbs = 450 Kg) 7500 N			
5.	Impact Indentation	0.1			
6.	Abrasion resistance	≥ 1500	≥ 2000	≥ 4000	≥ 6000
7.	24h Thickness swelling, %, Max	$\leq 16\%$	$\leq 16\%$	$\leq 16\%$	$\leq 12\%$
8.	Bending strength (MOR), MPa	30	30	34	34
9.	Modulus of elasticity (MOE), MPa	3000	3000	3600	3600
10.	Internal bond strength, MPa	0.7	0.7	1.0	1.0
11.	Boil test (IB strength), MPa	0.2	0.2	0.5	0.5
12.	Cigarette burn Resistance	Pass	Pass	Pass	Pass
13.	Stain Resistance	Pass	Pass	Pass	Pass
14.	Mycological test	No disintegration or attack	No disintegration or attack	No disintegration or attack	No disintegration or attack

Optional tests: If information on additional properties is agreed between user and manufacturer, it shall be determined using the test method (s) nominated from specified Indian/International standards.

- a) Skid resistance
- b) Castor chair resistance
- c) Large ball impact resistance
- d) Small ball impact resistance
- e) Surface bonding
- f) Any other test as agreed between manufacturer and user.

12. MARKING

Each Laminated flooring board shall be legibly and indelibly marked on balance side edges with following:

- a. Name of the Manufacture or trade-mark.
- b. Grade and type of laminated flooring board
- c. Thickness, and
- d. Batch number and year of manufacture.

13. BIS CERTIFICATION MARKING

- i. The use of the standard Mark is governed by the provision of Bureau of Indian Standard Act, 1986 and the Rules and Regulations made there under. The detail of conditions under which the license for the use standard mark may be obtained from the Bureau of Indian Standards.

The laminated flooring board may also be marked with the Standard Mark.

ANNEX A
(Clause 2)

LIFE REFERRED INDIAN STANDARDS

IS No.	Title
324:1959	Ordinary denatured spirits (revised)
707: 1976	Glossary of terms applicable to timber technology and utilization (second revision)
1500:1983	Method for Brinell hardness test for metallic material (second revision)
2380	Method of test for wood particle boards and boards from other lignocellulosic material

(Part-1):1977	Preparation and conditioning of test specimens (first revision).
(Part-2):1977	Accuracy of dimensions of boards (first revision).
(Part-3):1977	Determination of moisture content and density (first revision).
(Part-4):1977	Determination of static bending strength (Modulus of Rupture and Modulus of Elasticity in bending) (first revision).
(Part-5):1977	Determination of tensile strength perpendicular to surface (first revision).
(Part-14):1977	Screw and nail withdrawal test (first revision).
(Part-16):1977	Determination of water absorption (first revision).
(Part-17):1977	Determination of swelling in water (first revision).
3400	
(Part-2):1995	Methods of test for vulcanized rubber: Part-2 Hardness (second revision)
4905:1968	Methods for random sampling
12049:1987	Dimensions and tolerances relating to wood-based panel materials
12406:1988	Specification for medium density fibre board general purposes.
IS/ISO 12460 (Part 1)	Wood-based panels — Determination of formaldehyde release — Part 1: Formaldehyde emission by the 1-cubic-metre chamber method

ANNEX B
(Normative)

Determination of Abrasion Resistance and Abrasion Classification

B.1 General

This Annex specifies the method for measuring abrasion resistance and consequently determining the abrasion class of laminate floor covering elements. The test described measures the ability of the surface layer to resist abrasive wear-through. Abrasion is achieved by rotating a test specimen in contact with a pair of loaded cylindrical wheels covered with specified abrasive paper. The number of revolutions of the test specimen required to cause a defined degree of abrasion is measured.

100 mm x 100 mm, two centered 10 mm in from the short edges and one exactly in the centre of the element (see Figure B.2).

Machined edges and machined surfaces shall be avoided in the specimens.

If the dimension of the elements makes the above sampling impossible, then the test specimens shall be sampled from the nearest available area. If the elements measure less than 100 mm, then a joint is necessary. The joint shall be positioned in the middle of the 100 mm x 100 mm specimen.

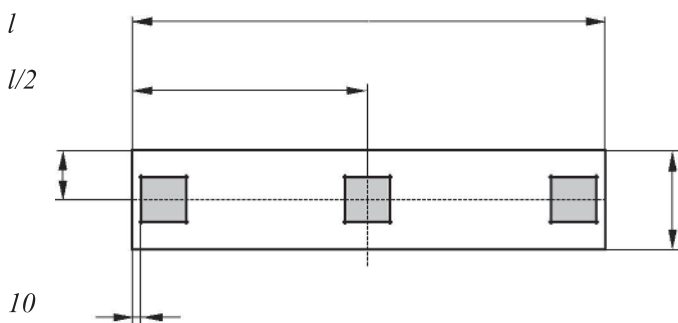


Figure B.2.: Sampling from one floor covering element

B.4 Preparation of test specimens and abrasive papers

Clean the surface of the test specimens with an organic solvent which is immiscible with water. Using a marker pen, mark the surface of each test specimen with two lines mutually at right angles so that the surface area is divided into quadrants (see Figure B.3).

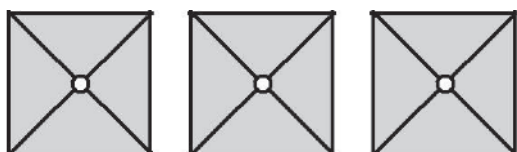


Figure B.3.: Division of the three test specimens into quadrants

Precondition the test specimens and the abrasive papers for at least 24 h in the conditioning chamber. After preconditioning seal the paper strips in polythene bags (maximum 10 strips per bag) until required for immediate use.

B.5 Procedure

B.5.1 Preparation of abrasive wheels

Bond a strip of preconditioned unused abrasive paper to each of the rubber-covered wheels. Ensure that the cylindrical surface is completely covered without any overlapping of the paper. The outside diameter of the finished assembled wheel shall be $(50,90 \pm 0,65)$ mm.

B.5.2 Calibration of abrasive paper

Prepare two wheels with preconditioned unused abrasive paper according to E.5.1 from the same batch and reserve them for testing. Clamp a zinc plate in the test specimen holder, start the suction device, reset the revolution counter to zero, lower the wheels and abrade the zinc plate for 500 revolutions. Wipe the zinc plate clean and weigh it to the nearest 1 mg. Renew the abrasive papers with preconditioned unused strips from the same batch, and abrade the zinc plate for a further 500 revolutions. Wipe the zinc plate clean and weigh it again to the nearest 1 mg. Its loss in mass shall be (120 ± 20) mg. Any batch of abrasive paper which causes a loss in mass outside this range shall not be used for testing.

B.5.3 Abrasion of test specimen

Perform the test immediately after the calibration. Prepare two wheels with preconditioned unused abrasive paper from the same batch previously approved by calibration. Fit the wheels to the machine and reset the revolution-counter to zero. Clamp the first test specimen in the holder. Ensure that the surface of the test specimen is flat. Lower the wheels, start the suction device and abrade the test specimen.

Examine the test specimen for abrasion after each 100 revolutions and renew the abrasive papers after every 200 revolutions. Continue the test in this way until the initial wear point (IP) is reached. The initial wear point (IP) is that point at which the first clearly recognizable wear-through of the print appears and the sub-layer becomes exposed in three quadrants. The initial wear point is reached when there are areas of at least 0,60 mm² wear-through in two quadrants and an area of 0,60 mm² wear-through becomes visible in a third quadrant. The sub-layer for printed patterns is the background on which the pattern is printed. For plain colors it is the first layer of different colour.

Wear-through within 10 mm of the centre of a joint shall be disregarded.

Record the number of revolutions as the IP-value. Repeat the test immediately using the two remaining test specimens.

B.6 Expression of results

Calculate the average of the IP-values obtained from the three test specimens to the nearest 100 revolutions. Express the abrasion resistance of a laminate floor covering as one of the abrasion classes AC1, AC2, AC3 or AC4) according to Table B.1.

Table B.1: Abrasion classes.

Abrasion class	AC1	AC2	AC3	AC4
Average IP-value from three test specimens	≥ 1500	≥ 2000	≥ 4000	≥ 6000

ANNEX C
(Normative)

Determination of thickness, length, width, squareness, straightness and flatness

F.1 Sampling

Take five laminate floor-covering elements as test specimens.

F.2 Conditioning

Test specimens are measured in the received state. For type approval or verification purposes, the test specimens shall be stabilized to a constant mass in an atmosphere of $(27 \pm 2)^\circ\text{C}$ and $(65 \pm 5)\%$ relative humidity. Constant mass is considered to be reached when the results of two successive weighing operations, carried out at an interval of 24 h, do not differ by more than 0,1 % of the mass of the test specimens.

F.3 Apparatus

F.3.1 Micrometer, caliper gauge or any other equivalent tool, having flat and parallel circular measuring surfaces of at least 16 mm diameter and an operating force of (4 ± 1) N, with an accuracy of $\pm 0,05$ mm, for thickness measurements.

F.3.2 Caliper gauge or any other equivalent tools with an accuracy of $\pm 0,05$ mm for width measurements, and $\pm 0,1$ mm for length measurements.

F.3.3 Square with arms of at least 300 mm and having a maximum angular deviation of 0,02 mm over 300mm.

F.3.4 Set of thickness gauges ranging from 0,05 mm to 0,10 mm in steps of 0,01 mm, and from 0,10 mm to 0,50 mm in steps of 0,05 mm.

F.3.5 Steel ruler of length at least equal to the length of the test specimen, and having a maximum straightness deviation of 0,05 mm over 1 000 mm.

F.3.6 Apparatus for measuring width flatness consisting of a dial gauge accurate to $\pm 0,01$ mm with a rounded tip of radius $\leq 5,5$ mm, installed centrally in relation to three rounded supports with radii ≥ 5 mm. The supports shall be adjustable along a T-shaped assembly of bars to provide the required gauge length. The measurement d shall not be less than the width w of the test specimen minus 10

mm. The tip of the gauge in contact with the face of the test specimen shall apply a force of $(1,0 \pm 0,5)$ N. The mass of the apparatus shall not affect the flatness of the test specimen beyond the limit of the accuracy of the gauge. See Figure A.1 for illustration. The instrument shall be set to zero against a suitable reference plate.

Key

1. Dial gauge
2. T-groove
3. Adjustable bridge
4. Adjustable pin

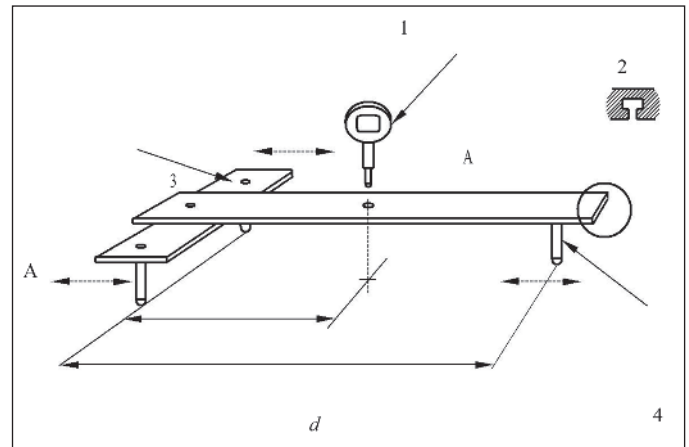


Figure A.1: Instrument for measuring width flatness.

F.4 Procedure

F.4.1 Determination of thickness (t)

Using the micrometer, calliper gauge or any other equivalent tool, measure the thickness t at a distance of 20 mm from the edges of the surface layer, at points located in each corner and in the middle of each long side (only four corner points if length \square 600 mm), (see Figure A.2).

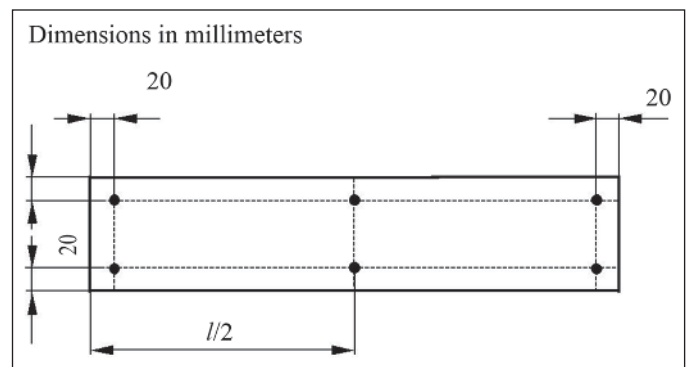


Figure A.2: Measuring points for determination of thickness (t).

F.4.2 Determination of width (l)

Using the appropriate calliper gauge or any other equivalent tool, measure the length l of the surface layer

along two lines parallel to the axis of the test specimen, at a distance of 20 mm from the long sides (see Figure A.3).

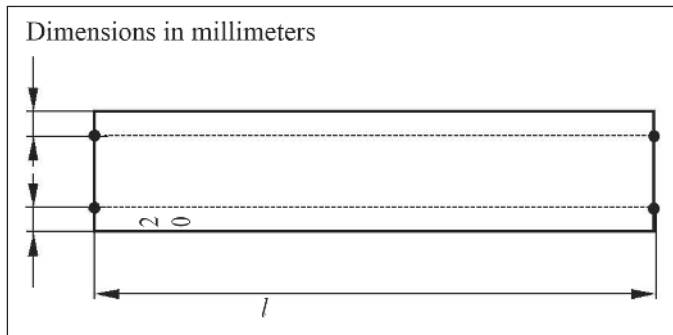


Figure A.3: Measuring points for determination of length (l).

F.4.3 Determination of width (w)

Using the appropriate calliper gauge or any other equivalent tool, measure the width w , along two lines parallel to the sides of the surface layer, at a distance of 20 mm from the sides, and in the middle for elements with a length greater than 600 mm (see Figure A.4).

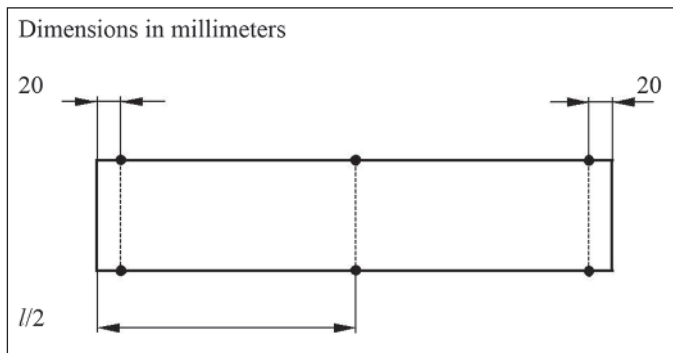


Figure A.4: Measuring points for determination of width (w).

F.4.4 Determination of dimensions of squared elements

Using the appropriate calliper gauge or any other equivalent tool, measure the width w , and the length l along two lines parallel to the sides of the surface layer, at a distance of 20 mm from the sides (see Figure A.5).

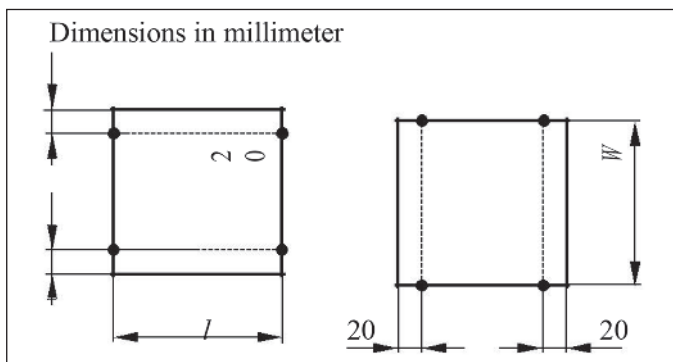


Figure A.5: Measuring points for determination of width (w) and length (l) of squared elements.

F.4.5 Determination of squareness (q)

Place one side of the square against one long side of the surface layer of the element. Using the thickness gauges, determine the maximum deviation from square q_{max} . at the small side. Repeat the procedure on the diagonally opposite corner (see Figure A.6).

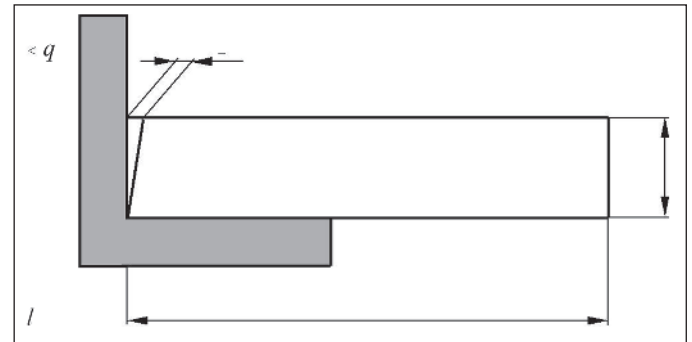


Figure A.6: Determination of squareness (q).

F.4.6 Determination of straightness (s)

Place the steel ruler against one long side of the surface layer. Using the thickness gauges, determine the maximum deviation s_{max} . from the ruler. Measure only the concave or cupped side (see Figure A.7).

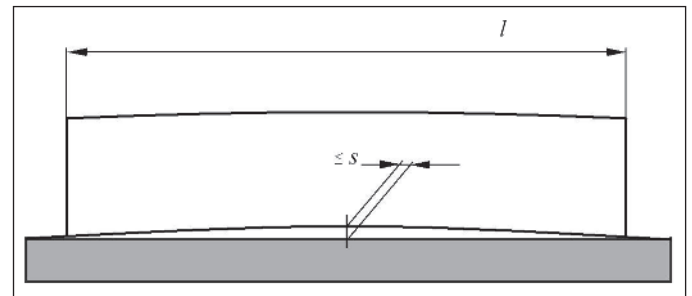


Figure A.7: Determination of straightness (s).

F.4.7 Determination of width flatness (f_w)

Adjust the supports along the T-shaped assembly of bars according to the width of the test specimen to evaluate (see Figure A.8). Determine the maximum deviation f_w for each element. The measurement d shall not be less than the width w of the test specimen minus 10 mm.

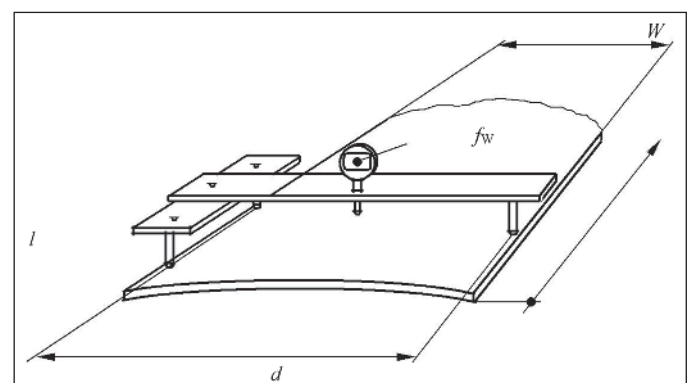


Figure A.8: Determination of width flatness (f_w).

F.4.8 Determination of length flatness (fl)

Place the test specimen against the steel ruler as shown in Figure A.9. Using the thickness gauges or the calliper gauge, determine the maximum deviation f_i from the ruler for each element. The measured value shall be expressed as concave when the surface layer is facing towards the ruler and as convex when the surface layer is facing away from the ruler.

Key

1. Test specimen
2. Steel ruler

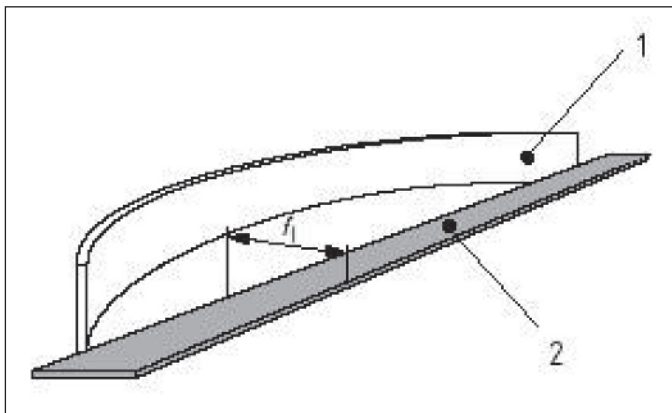


Figure A.9: Determination of length flatness (f_i).

A.5 Calculation and expression of results

F.5.1 Thickness (t)

Using all the measurements taken, calculate the mean value $t_{average}$, and also record the single maximum value $t_{max.}$ and the single minimum value $t_{min.}$.

Calculate $\Delta_{t_{average}} = |t_{nominal} - t_{average}|$ and $t_{max.} - t_{min.}$ and express the results in millimeters to the nearest 0,05 mm.

F.5.2 Length (l)

Record all measured values $l_{measured}$. Calculate for all measured values

$\Delta l = |l_{nominal} - l_{measured}|$ and express the results in millimeter to the nearest 0,1 mm. If

$l_{nominal} \leq 1500$ mm divide Δl by $l_{nominal}$ and express the results in millimeter to the nearest 0,1 mm/m.

F.5.3 Width (w)

Using all the measurements taken, calculate the mean value $w_{average}$, and also record the single maximum value $w_{max.}$ and the single minimum value $w_{min.}$

Calculate $\Delta w_{average} = |w_{nominal} - w_{average}|$ and $w_{max.} - w_{min.}$ and express the results in millimeter to the nearest 0,05 mm.

F.5.4 Squareness (q)

Record all measured values q and take the largest value $q_{max.}$ of the deviation from square to the nearest 0,05 mm as the result.

F.5.5 Straightness (s)

Record all maximum deviations from the ruler and divide the largest value by the nominal length and express this value $s_{max.}$ as the result to the nearest 0,05 mm/m.

F.5.6 Width flatness (fw)

Record all measured values f_w and take the largest convex and concave values and divide each by the measurement d (see A.3.5). Express the results to the nearest 0,01 %.

F.5.7 Length flatness (fl)

Record all measured values f_l and take the largest convex and concave values and divide each by the nominal length of the element. Express the result to the nearest 0,01 %.

A2. DRAFT STANDARD FOR FLEXIBLE PLYWOOD – SPECIFICATION & REQUIREMENTS

1. SCOPE

1.1. This standard covers requirements for materials, manufacture and performance of flexible plywood suitable for curved and shaped structures.

1.2. Its application includes where bending of plywood is required into small radii. It can take any desired shape. Once glued/laminated, it will hold the required shape.

2. REFERENCE:

- IS 4859:1968 - Specification for High Strength Aircraft Plywood
- IPIRTI research report no 157, Project code: WC/47/ Panel/2004
- IS 848:2006 - Synthetic Resin Adhesives for Plywood (Phenolic and Aminoplastic) - Specification

3. TERMINOLOGY

- Blisters:** Spot or area where the veneer do not adhere together properly and bulge like a blister.
- Decay:** Disintegration of wood tissues caused by wood-destroying fungi.
- Decayed Knot:** A knot which, due to advanced decay, is not as hard as the surrounding wood. Discoloration: Patch of a color different from that normally associated

with the species and occurring in either streaks or patches.

- **Gaps:** A void in the core due to a split or edges of adjacent veneers not being close.
- **Insect Hole (Borer Hole):** A hole caused by the attack of woodboring insects.
- **Lathe checks:** Cracks formed on the veneer at the point of cutting at the knife side which are normally controlled or minimized by application of pressure bar compression for obtaining smooth, tight and uniform thick veneer.
- **Overlap:** A ridge-like elevation noticeable on the surface of plywood due to overlapping of two adjacent core veneers.
- **Pleats:** A defect due to a veneer being folded parallel to grain forming higher than desired thicknesses locally.
- **Splits:** A separation of the fibers along the grain in a veneer extending from face to face.
- **Tight veneer:** Depth of lathe checks is less than 50 % of the thickness of veneer.
- **Veneer:** A thin sheet of wood of uniform thickness produced by slicing or rotary-cutting.
- **Extender:** A substance added to the adhesive either to reduce the cost of gluing or to reduce penetration through the veneers or both.
- **Fortifier:** A substance used primarily to improve the water resistance and durability of hot setting resins.

4. GRADES AND CLASS

4.1. Flexible plywood shall be of the following three grades, depending upon the bond strength developed by the adhesive used for bonding the veneers:

- a) MR (Moisture Resistant) grade;
- b) BWR (Boiling Water Resistant) grade; and
- c) BWP (Boiling Water Proof) grade.

4.2. In terms of formaldehyde class, each grade of flexible plywood shall be further classified in two classes as follows:

- a) Formaldehyde Class, E₁
- b) Formaldehyde Class, E₂

5. MATERIALS

5.1. Veneers

Veneers of the required thickness shall be obtained from

timber logs grown in plantations outside the natural forest system such as Tree outside forest (TOF), agroforestry, farm forestry, industrial and social forestry plantation etc. Imported veneers may also be used in the manufacturing.

5.2. Veneers shall contain deep lathe checks and therefore pressure bar compression is not exerted at the point of cutting. That is to say that, the gap and lead (horizontal gap and vertical gap between pressure bar and knife bar) shall be kept too large or equal to thickness of veneer. The nominal thickness of all the veneers used shall be identical and uniform within a tolerance of ± 5 percent.

6. ADHESIVES

Biobased or synthetic adhesives along with extender/fortifier as additive may be used for bonding the veneers to achieve requirement performance conforming to Table 1 of IS: 848.

7. MANUFACTURE

Glue shall be evenly spread over the veneers not leaving any unglued or glue-starved areas. Veneers will be assembled with the grain direction parallel to each other to have maximum flexibility however to avoid cracking while bending 10-15% of veneer thickness may be along the length of ply. No overlap of veneer ends or edges shall be permitted during assembly. The requisite number of veneer layers may be assembled to obtain the required finish. The assembly shall be hot pressed under controlled conditions of temperature, pressure and pressing time which depends upon the thickness and adhesive used for the flexible plywood. The stack under press shall then be cooled down to near room temperature by suitable cooling schedule in order to stabilize it.

8. DIMENSIONS AND TOLERANCES

8.1. Any dimensions (length and width) and number of ply as agreed to between the manufacturer and the purchaser may be used and shall be declared by the manufacturer. Prevailing dimensions (length \times width) of plywood boards are as given below:

- a) 2440 mm \times 1220 mm;
- b) 2135 mm \times 1 220 mm;
- c) 2135 mm \times 915 mm;
- d) 1830 mm \times 1220 mm; and
- e) 1830 mm \times 915 mm

8.2. Thickness

Prevailing thickness of such plywood boards are as 3 mm, 4 mm, 5 mm, 6 mm, 9 mm, 12 mm, NOTE — Any other

thickness as agreed to between the manufacturer and the purchaser may also be used.

8.3. Squareness and Edge Straightness

Edge straightness and squareness shall be tested as per Annex A

Table 1. Tolerances on Dimensions of Flexible Plywood

Sl No. (1)	Dimension (2)	Tolerance (3)
i)	Length	+6 mm -3 mm
ii)	Width	+3 mm -1 mm
iii)	Thickness a) Less than 6 mm; and b) 6 mm and above	± 10 percent ± 5 percent
iv)	Squareness, <i>Max</i>	2mm/1000 mm or 0.2 percent
v)	Edge straightness, <i>Max</i>	2mm/1000 mm or 0.2 percent

9. FINISH

The top and bottom of the finished board shall be free from checks, splits, gaps, blisters, harmful discoloration, any kind of decay, pleats and overlaps, insect holes, veneer hole, veneer splits, cracks etc.

10. SAMPLING

The method of drawing representative samples, sample size and the criteria for conformity shall be as prescribed in IS 7638.

11. TESTS

11.1. Moisture Content

The flexible plywood when tested in accordance with IS 1734 (Part 1) shall have a moisture content not less than 5 percent and not more than 15 percent.

11.2. Water Resistance Test

Flexible plywood when tested in the manner specified below shall satisfy the minimum pass standard for test for adhesion of plies as given in IS 1734 (Part 5).

Three test specimens of size 250 mm × 100 mm with full thickness of plywood shall be prepared from each of the boards selected under serial no. 10 and shall be tested for respective grade as described below:

- a) **For MR Grade** — Specimens shall be submerged in water at a temperature of 60 °C ± 2 °C for 3 h and dried for 8 h at a temperature of 65 °C ± 2 °C. Such cycle of submergence and drying shall be followed by two more cycles. The specimens shall then be tested in accordance with the method given in IS 1734 (Part 5).
- b) **For BWR Grade** — Specimens shall be submerged in boiling water for 8 h and then dried for 16 h at a temperature of 65 °C ± 2 °C. Such cycle of submergence and drying shall be followed by two more cycles. The specimens shall then be tested in accordance with the method given in IS 1734 (Part 5).
- c) **For BWP Grade** — The specimens shall be kept submerged in a pan of boiling water for a period of 72 h. The period of 72 h of boiling may be a continuous period or an aggregate of smaller periods of boiling, if the test piece is left in cold water between these smaller periods. These test pieces shall then be removed from the boiling water and cooled down to room temperature by plunging them in cold water. These test specimens, while still in wet condition, shall be tested in accordance with the method given in IS 1734 (Part 5).

NOTE — The cycles of drying or soaking can be made up of a number of shorter periods of drying or soaking. In such instances the specimen shall be kept in air at 27 °C ± 2 °C in between the shorter periods constituting the drying cycle, and be kept submerged in water at 27 °C ± 2 °C in between the shorter periods constituting the soaking cycle.

11.3. Determination of Bending Strength

C-1. TEST SPECIMENS

C-1.1 Test specimen shall be cut from each selected board in such a manner that:

- a) The length of the test piece is parallel to the grain direction of the face plies, and
- b) A joint shall run along the axis of the test specimen, if there are such joints in the sheet.

C-1.2 The specimens shall be cut with the minimum slope of grain from the edges.

C-1.3 The specimens shall be oven dry at the time of test.

C-1.4 The specimen shall be 25 mm wide and of sufficient length, so that when bent over a mandrel of that specified diameter a parallel sided U is formed.

C-2. PROCEDURE

C-2.1 The ratio of the diameter of the mandrel to the thickness of the plywood shall be as specified in Table 2.

C-2.2 The specimens shall be bent at the specified radius to a parallel sided U shape without support on the tension side. The specimen shall be bent once and bent again in the reverse directions.

C-3. EXAMINATION

C.3.1 The test specimen shall then be examined visually for fractures and separation of the plies. Breakage shall consist of fractures extending 3 mm or more across the width of the specimen. Tears along the fibre direction that begin at the edge and extend into the specimen along the grain sloping from the edge shall not be considered breakage. It shall be determined whether a specimen breaks before removal from the mandrel. Breakage of more than 20 percent of all the specimens tested shall be considered as the cause for rejection of the whole lot.

Table 2. Bending Test (Reference: Table 4, IS 4859:1968) (Clause C-2.1)

Plywood Thickness mm	Mandrel Diameter mm
1.0	100
1.5	150
2.0	200
2.5	250
3.0	300
3.5	350
4.0	400
4.5	450
5.0	500

11.4. FORMALDEHYDE CONTENT TEST

Test of free formaldehyde content in the sample shall be done by perforator method as per IS 13745 and test results of drawn sample shall meet the requirements of formaldehyde content as follows:

- a) Formaldehyde Class, $E_1 \leq 8$ mg/100 g of oven dry sample; and
- b) Formaldehyde Class, $E_2 > 8$ mg/100 g of oven dry sample and ≤ 30 mg/100g of oven dry sample

11.5. STEADY- STATE FORMALDEHYDE EMISSION TEST (Optional Test)

Manufacturer will offer a stack of plywood made under a batch (not less than 50 pieces) bearing the batch number and date of manufacture along with details of plywood, that is, grade, size and thickness, adhesive used and any other (the manufacturer wish to inform). After sampling, the sample shall immediately cover in airtight polythene with date of sampling on the plywood.

Sample must be taken for test within 24 h of opening the airtight cover and within one month from the date of sampling, and test shall be done by the test method as given in IS/ISO 12460 (Part 1). The test results of drawn sample shall meet the requirements of formaldehyde emission value as follows:

- a) Formaldehyde Class $E_1 \leq 0.124$ mg/m³; and
- b) Formaldehyde Class $E_2 > 0.124$ mg/m³

12. INSPECTION

All boards shall be visually inspected to ensure that the flexible plywood sides conform to the requirements. They shall also be inspected for delamination, blisters or surface defects.

13. DELIVERY

The Flexible plywood shall be supplied in a clean and dry condition and shall be suitably packed according to approved grade practice, unless otherwise specified by the purchaser.

14. MARKING

Each plywood board shall be legibly and indelibly marked or stamped with the following on the face of the board near one corner:

- a) Indication of the source of manufacture;
- b) Year of manufacture;
- c) Batch No.;
- d) Size and thickness;
- e) Grade; and
- f) Bending class

Annex A

METHOD OF TEST FOR SQUARENESS AND EDGE STRAIGHTNESS

C-1. PROCEDURE FOR EDGE STRAIGHTNESS

The straightness of the edges and ends of plywood shall be verified against a straightedge not less than the full length of the plywood. If the edge on the end of plywood

is convex, it shall be held against the straightedge in such a way that also gives approximately equal gap at each end. The largest gap between the straightedge and the edge shall be measured to the nearest millimeter and recorded.

C-2 PROCEDURE FOR SQUARENESS

The squareness of plywood shall be checked with a 1 200 mm × 1200 mm square, by applying, one arm of the square to the plywood. The maximum width of the gap shall be record

B. Revision of Existing Standards

The meeting for the revision of preservatives retention norms in IS 4490: 2024 - Shuttering Grade Plywood was held on 28th March 2025. The members engaged in detailed technical discussions on the feasibility of reducing the preservative retention for shuttering grade plywood which currently mandates a retention level of 12 kg/m³.

Minutes of meeting of the FIPPI Technical Committee for Revision of Preservative Retention Norms – IS 4990: 2024 – Plywood for Concrete Works – Specification

Committee Members:

- Shri Dhanesh Pandey (M/S Century Ply) – Member
- Shri Shiv Parkash (M/S Green Ply) – Member
- Shri J.K. Bihani (HPMA) – Member
- Shri Latendu Rath (M/S Greenlam) – Member
- Shri Manoj Gwari (WTA) – Member
- Shri Sumit Roy (M/S Century) – Member
- Dr. Narasimha Murty (Scientist, IWST) – Invitee Member
- Dr. C. N. Pandey- Coordinator
- Dr. M.P. Singh-Director General, FIPPI

Invited Members

- Dr. Prasanth, Secretary, SIPMA
- Shri Jagannath Das, Century Ply boards
- Shri Abhishek Chitlangia, Duroply
- Shri Rishabh Gandhi, FIPPI
- Shri Anthony Fernandes, FIPPI
- Dr. Richa Bansal, FIPPI

The Federation of Indian Plywood & Panel Industry (FIPPI) held an online meeting on 28th March 2024 in an online mode to discuss and review the existing preservative retention guidelines under clause 6.6 of IS 4990:2024, which currently mandates a retention level of 12 kg/m³ for shuttering-grade plywood.

A committee comprising industry experts and researchers was formed for this purpose. The members engaged in an extensive discussion on the technical feasibility of reducing the preservative retention limit while ensuring the durability and performance of shuttering-grade plywood.

After having detailed discussions on the subject, the committee members expressed their views as follows:

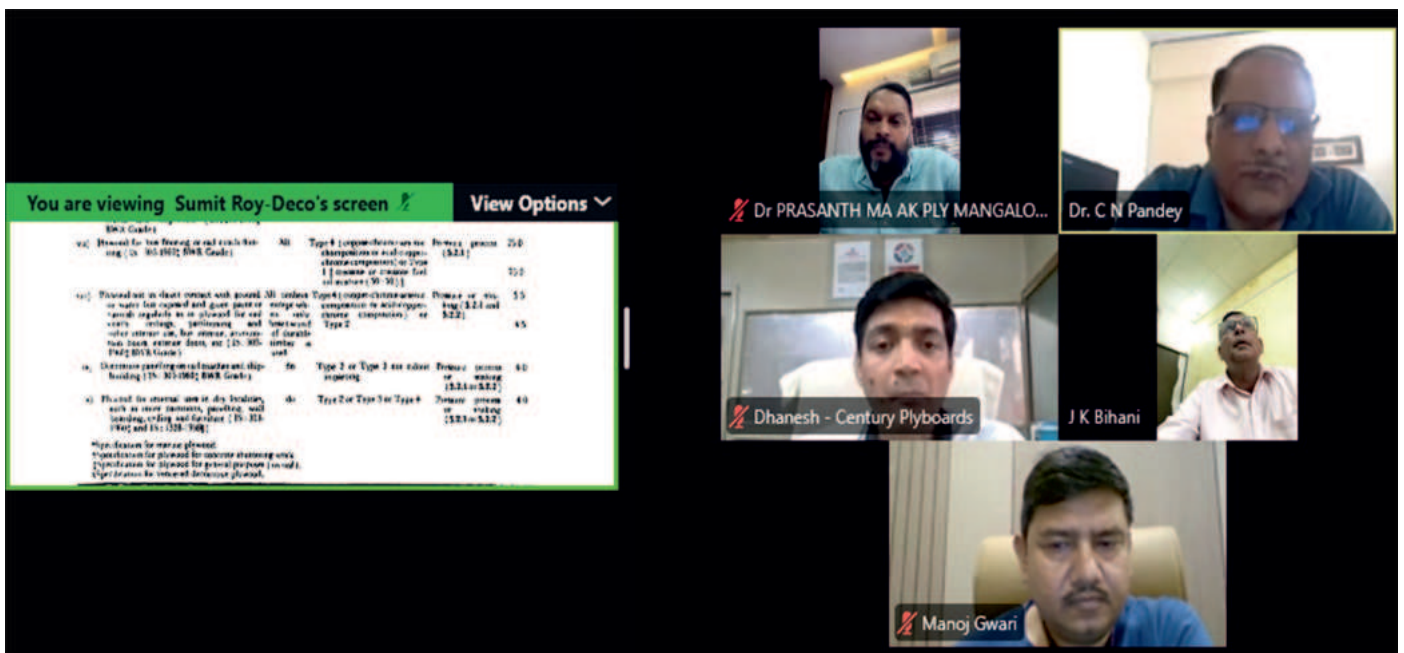
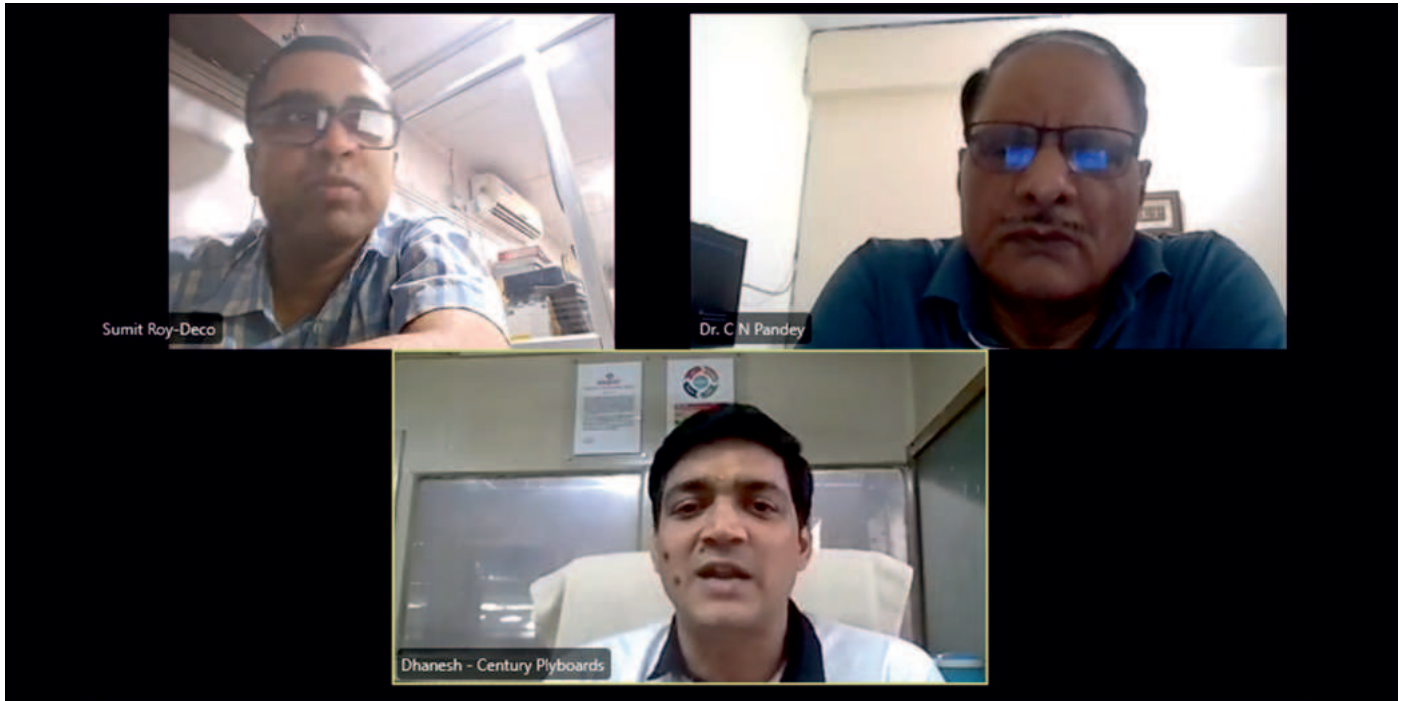
Dr. C. N. Pandey referred to the “ICFRE-Wood Preservation in India” book, which suggests lower retention limits for timber applications (approximately 50% less than 12 kg/m³ as specified in IS 4990:2024, clause 6.6). However, he highlighted that these recommendations apply to timber and their direct applicability to plywood remains uncertain. He also referred to clause 8.2, Table 2, IS 401, which supports similar recommendations for preservative-treated timber.

Dr. Narasimha Murty, Senior Scientist, IWST, Bengaluru, presented experimental results, where a retention of 8 kg/m³ of preservative chemicals provided 24 months of protection against biological degradation in graveyard tests. This raised the possibility of lowering the retention requirement while maintaining adequate protection.

Shri Dhanesh Pandey emphasized that 12 kg/m³ requirement in IS 4990 is derived from raw wood preservation norms (IS 401) and is primarily achievable through the Vacuum Pressure Treatment (VPT) method. He also stated that plywood differs significantly from raw wood of the same species in respect to sensitiveness to microorganism/termite infestation during storage and use due to its cross-layered orientation filled with additives/synthetic resin, it is compressed under high temperature and pressure to make it denser and less porous than wood and it also has less relative cellulose (primary food source) content per unit volume.

The preservation requirement for shuttering plywood as:

1. **During Storage condition:** Shri Dhanesh Pandey suggested that “VPT”/higher retention is not required, and that glue-line protection and final dipping are sufficient to protect the shuttering plywood. He also suggested that there is a need for clear guidelines on the storage and handling of shuttering plywood.



2. **In Use:** Shuttering plywood is used in direct contact/saturation with cement which is highly alkaline. A high-alkaline medium helps prevent termite attacks in plywood by creating an environment that is toxic and unsuitable for termites, and plywood being saturated to high pH creates an inhospitable environment; it damages termite digestion in many ways, it disrupts termite gut microorganisms & eventually kills them due to starvation. Additionally, alkalinity dehydrates and weakens the exoskeleton of termites, causing fatal damage and resulting in their eventual death.

eucalyptus, which is commonly used in plywood, has a lifespan of around 2 years. He suggested that Type III timber should be used for manufacturing IS 4990-compliant shuttering plywood.

Shri J.K. Bihani stated that preservative retention requirement for plywood for bus flooring or rail coach flooring is 7.5 kg/m³. He further clarified that in IS 5539, Appendix A, SI No. vii, there is a printing mistake of retention value 75 kg/m³ for plywood used in bus flooring or rail coach flooring and mentioned that this retention value should be 7.5 kg/m³. He suggested that the retention requirement of 12 kg/m³ for shuttering grade plywood should be revised as it is not used for a longer period of time.

Shri Manoj Gwari highlighted that Type I timber under IS 401 has a durability span of 120 months, whereas

QUALITY & STANDARDS

Dr. M.P. Singh suggested for a revision in IS 5539:1969, which is referenced in IS 4990:2024, particularly regarding the reduction of preservative retention requirements. Since shuttering plywood is typically used for a short duration (2–3 years), the existing 12 kg/m³ retention requirement should be reviewed.

Based on the discussions, the committee members agreed that the chemical retention clause for shuttering plywood should be modified. Additionally, it was decided that Dr.Narasimha.

Murty would review the points discussed in the meeting and propose suitable modifications to the preservative retention clause to ensure adequate protection of shuttering-grade plywood.

The meeting successfully highlighted key concerns regarding the preservative retention norms in IS 4990 for shuttering plywood. The committee members actively participated in discussions based on their industry and research experience leading to the conclusion that a revision of the retention clause is necessary.

Retention limit to be set as 4 kg/m³ in addition to glue line protection of the shuttering plywood. Preservative chemical to use shall be of Type-4 (Water Soluble Fixed Type)- Copper-chrome-arsenic composition, acid-copper-chrome composition, chromated zinc chloride and copper-chrome-boric composition.

Conclusion

FIPPI has played a pivotal role in bringing together diverse industry stakeholders under a single platform to address critical technical gaps in the plywood and panel industry. Its active involvement in the formulation of new standards and the revision of existing ones demonstrates its long-standing commitment to quality enhancement, safety, innovation, and sustainability in the wood-based panel industry.

The proposed new standards are expected to bring uniformity in production practices, improve the fire safety characteristics of MDF and particle boards, and support innovation in specialty plywood like flexi-ply. Revisions to IS 710 and IS 4990 will result in more robust specifications for marine and shuttering-grade applications.

These initiatives will significantly uplift the quality benchmarks of plywood and panel products in India, ensure consumer safety, and promote regulatory compliance aligned with international norms. □

FEDERATION OF INDIAN PLYWOOD AND PANEL INDUSTRY

ZERO DEFECT, ZERO EFFECT

INDIAN WOOD PANEL INDUSTRIES

acknowledge the vision and guidance of Honourable Prime Minister, Shri Narendra Modi for implementation of quality control order on Plywood, MDF, Particle Board & Wooden Flush Door Shutters.

JOIN US IN SUPPORTING MANDATORY QUALITY PRODUCTS FOR A STRONGER, GREENER, AND MORE PROSPEROUS INDIA

Making Indian standard world standard

Employment of 2 Million people (direct & indirect)

Supporting and scaling up the size and income of carpenters and millworkers

Increasing income of farmers engaged in agro forestry for supply of raw materials of wood panel industry

Opening doors for the export of quality products globally
(VOCAL FOR LOCAL, LOCAL TO GLOBAL)

Increasing Tree Green Cover, reducing carbon footprint, and acting as a carbon sink

Indian wood panel (Plywood, MDF & Particle Board) industry, which is valued at more than ₹50,000 Crore, is growing at more than 10% CAGR

Enhance consumer product safety and avert circulation of sub-standard products

Premium quality and reliability of 'Made in India' products shall be reinforced

A strong industry-government partnership to enhance quality consciousness

Federation of Indian Plywood and Panel Industry (FIPPI) and affiliated associations

Association of Indian Panel Board Manufacturers | Haryana Plywood Manufacturers' Association | Plywood Manufacturers Welfare Association, U.P. | All India Plywood Manufacturers Association | BK Plywood Manufacturers Association. | Bangalore Plywood Manufacturers Association | Association of Indian Plywood Panels & Laminate Industries | Rajasthan Plywood Manufacturers Association | Punjab Plywood Manufacturers Association | All India Plywood & Laminates Industries. | Wood-Based Udyog Association, U.P. | Delhi-NCR Plywood Manufacturer Association | South India Plywood Manufacturers Association. | UK UP Plywood Manufacture Association | Aamma All India MDF Manufacturers Association | Kandla Timber Association

WOOD IS GOOD: GROW MORE, USE MORE

Quality Planting Material for Plantation Forests: The Path Atamnirbhar Bharat



Dr. Padam Parkash Bhojvaid
Ex-Principal Chief Conservator
Forests, Haryana, India

A critical analysis of Indian forests reveals that these can be classified into three main categories: conservation forests, production forests, and restoration forests. While trees play a similar role across these categories, each type of forest has a distinct primary function. Conservation forests such as National Parks, sanctuaries and bio-reserves primarily focus on biodiversity conservation and ecological security. Restoration forests, on the other hand, aim to restore degraded landscapes for example the forests raised on mine dumps etc. Production forests are geared towards the production of fiber and biomass, often featuring fast-growing commercial timber and pulp species. These production forests are predominantly plantations of fast growing tree species raised on private or institutional lands outside the scheduled forests, which are notified under various sections of the Indian Forest Act.

Plantations can result in reduction of Import bills and foreign exchange savings, Currently, only 10 to 15 percent of India's national wood requirements are met through domestic production. Furthermore, 75 percent of this domestic wood production comes from plantation (trees outside notified forests), with the rest being imported. Plantations play a crucial role in sequestering carbon dioxide from the atmosphere. The growth of trees in these plantations absorbs carbon dioxide, mitigating the effects of climate change. This is an essential step for industries aiming to offset their carbon footprint and contribute to a healthier planet. Plantations can transform fallow land into productive land, preventing degradation that is often

a source of carbon dioxide emissions. This conversion not only enhances the land's productivity but also contributes to environmental sustainability. Plantation activities create a wide range of employment opportunities along the value chain, from raising nurseries to wood utilization. This generates significant income for a large portion of the population, fostering economic growth and community development. Engaging in plantation activities helps India achieve the targets committed in the Paris Agreement on climate change. By increasing forest cover and enhancing carbon sequestration, India can make significant strides towards its climate goals. In the last but not the least plantations are a burning example of Atmanirbhar Bharat.

Farm-grown timber trees are the cornerstone of plantations, with the primary aim of maximizing biomass yield for industries like pulp, plywood, and furniture-making. These plantations, established on private agricultural lands, benefit from several advantages. Fertile soils on agricultural land foster robust tree growth, while individual ownership ensures better plant protection, higher survival rates, and the efficient use of inputs like fertilizers and irrigation. However, the real catalyst for increased productivity in farm forestry lies in the adoption of genetically improved quality planting material (QPM).

Central to their success is the development and widespread use of genetically improved Quality Planting Material (QPM). Using QPM can dramatically enhance the productivity of fast-growing tree species—significantly higher when compared to traditional nursery seedlings. For instance, clonal eucalyptus plantations in Haryana have shown nearly tenfold biomass production compared to those, which were raised using saplings derived from seed origins in early 1970s. This transformative potential highlights the critical importance of QPM in advancing farm forestry. Yet, despite its promise, the adoption of QPM faces several significant barriers.

Some paper mills, such as the Bilrapur Paper Mill and ITC Bhadrachalam, have invested significant human and financial resources over decades to develop superior Quality Planting Material (QPM) for plantation forestry. These efforts included selecting plus trees of Eucalyptus species and establishing vegetative multiplication gardens and greenhouses to produce high-yielding, disease-resistant clonal plants. Initially, these QPMs



QPM ensures better survival, disease resistance and higher production, leading to higher income generation. A clonal QPM production facility in Jaipore district Koraput in Odisha.

were distributed to local tree farmers under a buy-back arrangement, ensuring a reliable supply of pulpwood for the mills while promoting farm forestry.

Over time, the capacity of these facilities expanded, and the model was replicated by others, such as Pragati Biotech in Punjab and Star Paper Mill in Haryana. However, the past two decades have witnessed an unprecedented surge in demand for clonal planting material, driven by the rapid growth of farm forestry and the increasing recognition of its economic and ecological benefits. This demand has now far outstripped the production capacities of these facilities, highlighting the need for further investment and expansion in QPM production to meet the rising needs of private landowners engaged in plantation forestry.

One major challenge is the limited infrastructure for QPM production. Facilities such as greenhouses, hardening chambers, and vegetative multiplication gardens—essential for producing high-quality planting material—are severely lacking. Without these specialized facilities, large-scale production of QPM is constrained, restricting access for farmers. Compounding this issue is the shortage

of skilled professionals. Unlike agricultural crops such as wheat, which benefit from the expertise of hundreds of trained scientists specializing in species specific genetics, pathology, breeding, and agronomy within the Indian Council of Agricultural Research (ICAR), forestry lacks similar species-specific specialization. Institutions such as the Indian Council of Forestry Research and Education (ICFRE), Dehradun and the National Research Centre for Agroforestry in Jhansi do not have dedicated tree species experts, further underscoring the need for policy interventions to develop a cadre of professionals for farm forestry.

Another obstacle lies in the inadequacies of state forest department nurseries. Many state forest departments lack the expertise and resources to operate advanced and specialized nurseries for QPM production. Despite recognizing its importance, government facilities remain minimal. Procurement practices constrained by tendering and cost-cutting often lead to the purchase of substandard planting material. For example, while in-house facilities might produce clonal plants at ₹10-15 per plant, outsourced plants procured at half the cost (raised



4 year old high technology clonal plantations created with the use of QPM in tribal areas in Odisha. The uniform genetic makeup of clones ensures maximum productivity.

by fly by night operators) are frequently of inferior quality, undermining productivity and farmer confidence in QPM.

The high costs associated with QPM production, coupled with limited awareness among small and marginal farmers, further impede its widespread adoption. Many farmers remain unaware of the long-term benefits of QPM, such as significantly higher yields and better economic returns under normal inputs on same land, leading to hesitancy in embracing this advanced planting material.

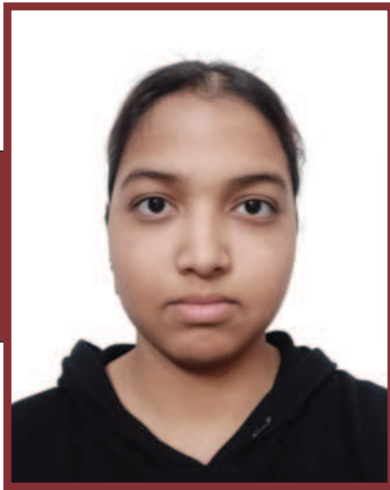
Addressing these technical, economic, and policy-related challenges is crucial to unlocking the full potential of QPM. Investments in infrastructure like greenhouses, hardening chambers, and vegetative multiplication gardens are essential. Simultaneously, building capacity in forest departments and private enterprises by training specialists in tree genetics, pathology, and other related disciplines can ensure scientific rigor in QPM development and distribution. Policy interventions to simplify procurement processes and incentivize public-private partnerships will also be pivotal in enhancing the availability of affordable, high-quality QPM. Finally, raising farmer awareness through targeted outreach programs and raising demonstration plots can help educate them

about the economic and ecological benefits of adopting QPM in farm forestry.

With targeted investments and strategic policy interventions, farm forestry can achieve its full potential, leading to sustainable timber production, higher farmer incomes, and reduced pressure on natural forests. The widespread use of QPM will not only boost timber production and farmer incomes but also align with India's goals of Atmanirbhar Bharat, reducing dependency on imports and strengthening the rural economy. It showcases how self-sufficiency in resources, particularly wood, can be achieved through sustainable practices that strengthens the national economy. In the end, QPM is more than just a technical advancement—it is a symbol of innovation and sustainability, paving the way for a brighter, greener, and more self-reliant India.

Investing in plantations aligns with the vision of Atmanirbhar Bharat (Self-Reliant India). It showcases how self-sufficiency in resources, particularly wood, can be achieved through sustainable practices. This not only supports the environment but also strengthens the national economy. □

Time for Timber Policy



Pragyapati Mandal
Intern at FIPPI
(Student of Amity University)

What does a 6,000-year-old Neolithic longhouse have in common with India’s timber industry today? Both were revolutionary for their time—but while the world has moved to engineered wood and carbon-neutral construction, India’s policies remain stuck in the past.

The history of timber is rich and extensive, dating back over 10,000 years. One of the oldest examples is Europe’s Neolithic longhouse, built around 6000 B.C., which housed up to thirty people and showcased remarkable construction skills.

In India, timber frames can be traced back to 200 BC, with teak being shaped and connected using bamboo pegs. Timber was the primary building material in Pataliputra and in South India for temples and palaces.

Japanese builders discovered the benefits of working with more fibrous timbers after witnessing that stone buildings would often crack under stress during earthquakes or typhoons. Wood, on the other hand, was able to withstand almost any environmental condition. The discovery of bronze and finally steel did not replace wood either although they changed the way that we use it.

Timber’s strength parallel to the grain is comparable to reinforced concrete, with hardwood being slightly stronger and softwood slightly weaker. However, timber does not match modern high-strength concrete in compression and is less stiff than concrete and steel. Its lower density makes it efficient for long-span or tall structures, as it reduces the weight supported by the structure.

While traditional timber construction methods laid the foundation, modern engineering has revolutionized its applications. In recent years, engineered wood has gained popularity as a derivative wood product that is created by binding together wood strands, particles, fibers, or veneers with adhesives to form composite materials. The key principle of manufacturing engineered wood is to maximize its strengths while covering for weaknesses possessed by natural wood such as its tendency to crack, warm or split.

While elucidating the concept of engineered wood, one may bring up plywood, one of the oldest and most widely used wood products, which is known for its strength and stability. Newer engineered wood products would be CLT (Cross-Laminated Timber) and Glulam (Glued Laminated Timber) which are both known for their versatility, durability and thermal properties. CLT is being used increasingly in high rise buildings for its fire resistance and sustainability.

India is the world’s largest consumer of wood for residential construction, and according to the Indian Centre for Science and Environment, demand for timber stands at 63 million cubic metres – with 30 million cubic metres coming from domestic production and 33 million cubic metres from imports.

Demand for timber surged after the Modi government lifted a 27-year ban on using timber in public buildings in 2020. This decision represented a complete U-turn from the 1993 ban, with the Modi government focusing on



afforestation and low-carbon materials to fuel its growing economy.

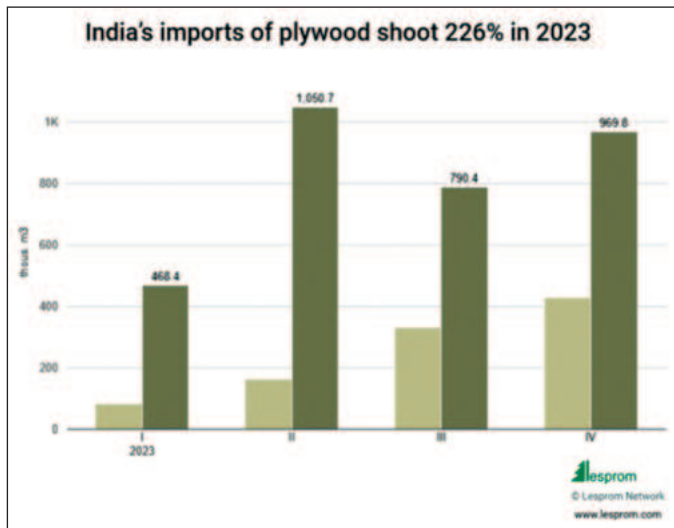
Other than the domestic demand for timber, there is also a global demand for Indian wood. This is reflected by the plywood industry and the teakwood industry, respectively. Despite a decline in timber imports, India's plywood imports surged drastically, reflecting robust domestic demand.

Here is the list of top export markets for Indian wood of 2023-24:

Rank	Top Importers of Indian Wood	Export Data (Export Value in USD)
1	United States	\$524.89 Million
2	United Arab Emirates	\$211.27 Million
3	United Kingdom	\$185.17 Million
4	Saudi Arabia	\$170.96 Million
5	Sri Lanka	\$163.41 Million
6	Nepal	\$147.87 Million
7	Bangladesh	\$109.37 Million
8	Kenya	\$103.28 Million
9	Nigeria	\$91.61 Million
10	Netherlands	\$82.37 Million

The U.S. and UAE dominate imports, reflecting demand for high-quality Indian wood in luxury construction, yet instead of capitalizing on this demand, India's own housing sector faces shortages due to draconian logging rules

Simultaneously, India is on a fast track to being a global leader in teak exports, capitalizing on its abundant native teak resources. The wood-based industries of India have a significant capacity to generate employment opportunities across various stages of their supply chains,



from the cultivation of timber to the production of wood-based products.

A report by the Law Library of Congress details how countries like Canada, France and Japan have enacted “wood-first” legislation to encourage timber use in construction, balancing economic growth with sustainability. The 2024 Paris Olympics incorporated significant use of wood in their construction projects to promote sustainability. In the Olympic Village, all buildings up to eight stories were constructed using timber.

The wood product market in India is forecasted to grow by at least 8.78% CAGR during the period 2025-2030. With increased urbanization and government initiatives centred around affordable housing, there's been an increase in demand for wood in different sectors.

The main problem is that although India is one of the world's top producers of tropical logs, it is also one of the world's largest consumers of wood products. India cannot meet its demand for wood products with domestic supply and hence is one of the topmost importing countries of tropical woods.

Despite its potential, the industry faces multilayered challenges—from bureaucratic permit systems to outdated processing technology—that stall its growth. Without urgent reforms, India risks losing its competitive edge to more agile timber-exporting nations

While India's forest conservation laws, such as the Forest Conservation Act (1980) and the Environment Protection Act (1986), are commendable for their intent to protect the country's green cover, they have also created significant hurdles for the timber industry.

India's permit raj for timber is a relic of the past—strangling growth while illegal logging thrives under the radar. Obtaining permits for harvesting, transportation, and processing is a confusing process riddled with bureaucratic delays and inefficiencies. The policies are imbalanced, perpetually constraining the industry deterring investment and innovation in the timber industry, and limiting growth opportunities.

The Forest Conservation Act, drafted in an era of scarcity, now does more harm than good—prioritizing red tape over reforestation, and pushing the industry toward costlier imports

Economically speaking, the industry is under immense pressure due to the high costs of extraction, transportation, and processing, coupled with competition from cheaper imported timber, which has eroded the profitability of domestic producers.

RAW MATERIAL SUSTAINABILITY

Not to mention that although the government has made several schemes such as PRAMAN certification to ensure the legality and the sustainability of timber, it increases cost making it difficult for businesses to compete with imported timber.

When it comes to technology, India's timber industry is lagging behind and needs to catch up with the advancements seen in the timber sectors of other leading countries. This industry faces a variety of technological challenges, such as adapting to modern demands, integrating alternative materials, and ensuring sustainable practices. All of these issues are becoming increasingly important given the rising demand and growing environmental concerns.

There is also a lack of skilled labour in this industry limiting productivity and innovation; the absence of modern processing facilities means that much of the timber is exported in its raw form, depriving the industry of value addition and higher revenues.

Amidst all these challenges, sustainability has emerged as both a necessity and a constraint, as the transition to the sustainable development of the timber industry is neither easy nor inexpensive. For it to grow there needs to be significant investment and awareness amongst the stakeholders about sustainable practices, legal requirements, and market opportunities. Despite recent reforms in India, timber trade restrictions and varied state laws remain obstacles which potential investors are wary of.

At its core, policies should aim at creating a balanced ecosystem where conservation and commerce coexist harmoniously, ensuring that forests are managed responsibly while meeting the growing demand for timber.

Trees Outside Forests (TOF) represent a vital yet often overlooked resource that can significantly bolster the Indian timber industry. These trees, found on farmlands, homesteads, urban areas, and along roadsides, contribute substantially to timber supply without putting additional pressure on natural forests.

TOF not only provides a sustainable source of raw materials but also supports rural livelihoods by integrating timber production with agriculture through agroforestry practices. TOF also contributes to environmental benefits like carbon sequestration, soil conservation, and biodiversity preservation, making TOF a win-win solution for the timber industry and ecological sustainability.

However, landowners and local communities often lack incentives to protect or enhance TOF. Without benefits

tied to preserving these trees, there's little motivation to invest in their long-term health. To unlock TOF's potential, India must introduce payment-for-ecosystem-services (PES) schemes, mirroring successful models in Costa Rica and Europe

Improving access to information about TOFs by disseminating related information through virtual call centres, online dashboards and promotion of smartphone applications to help make technical decisions about the integration of trees into farming systems and landscapes.

Incentivizing afforestation, reforestation, and agroforestry, and encouraging private landowners and communities to grow timber species on degraded or non-forest lands will lead to the growth of the industry. Financial incentives, such as subsidies or tax breaks, would help timber enterprises transition to certified and sustainable practices.

In Europe, incentive-oriented policies have led to the afforestation of many hectares of agricultural land in five years. This includes direct financial aid for afforestation, funding for five years of plantation maintenance, and compensatory payments for farmers facing loss.

Investment in modern processing facilities, especially in rural and forested areas, would enable value addition to raw timber, boosting profitability and reducing waste. Simultaneously, the policy should promote research and development in timber-based products, such as engineered wood and bio composites, which have a growing demand in the construction and furniture sectors.

Collaboration among government agencies, private companies, and local communities is crucial for fostering innovation and attracting investment to the timber industry. Public-private partnerships (PPPs) play a key role in modernizing logging practices, enhancing supply chain efficiencies, and creating new market opportunities for engineered wood products.

Investing in digital inventory systems can enhance transparency and ensure compliance with sustainable practices in India. A national database to track timber production and consumption would provide reliable data for demand-supply forecasting and policy adjustments.

To move forward, we need a comprehensive approach. Policymakers must update rules to create a balanced system where both conservation and business can thrive. It's important to simplify permits, encourage sustainable practices, and invest in technology. The industry should adopt new ideas and look for new markets to remain competitive. It is also essential to involve all stakeholders, from local communities to industry leaders, to find fair and effective solutions. □

Planning the Roadmap for Sustainability: Meeting of the Federation of Indian Plywood and Panel Industry Held on 26th March 2025

Members Present:

1. Dr. M.P. Singh, Director General FIPPI
2. Shri Jinendra Jain, Senior Sustainability Advisor FIPPI
3. Dr. C.N. Pandey, Senior Technical Advisor FIPPI
4. Shri Jikesh Thakkar, Managing Director- M/s. Rushil Décor Limited
5. Shri Rajeshwar Nair, Vice President-M/s. Balaji Action Buildwell Pvt. Ltd.,
6. Shri Ashish Mishra, Vice President-Sustainable Wood Sourcing & Plantation M/s. Greenlam Industries Limited
7. Shri Ajay Kumar, Advisor (Economics, Strategy & Sustainability) M/s. Merino Industries
8. Shri Abhishek Chitlangia, Vice President-Manufacturing M/s. Duroply Industries Limited
9. Shri Vivek Aggarwal, President Century Hoshiarpur Plant
10. Dr. Richa Bansal, Senior Research Analyst FIPPI
11. Shri Rishabh Gandhi, Research Analyst FIPPI
12. Shri Anthony Fernandes, Office Secretary

The Federation of Indian Plywood & Panel Industry (FIPPI) held an online meeting with its members on March 26, 2025 to discuss and strategize the roadmap for sustainability.

Shri Jinendra Jain commenced the meeting with a presentation on sustainability, highlighting both short-term and long-term initiatives. The short-term initiatives included: Development of sustainability guidelines for members especially for raw material - Promote sustainable forestry practices - Collaborate with national and international organizations for best practices; Study tours and learning from other countries; Campaign for increasing popularity of green materials; carbon footprint and climate change; Support certification programs or such other innovative schemes. The long-term initiatives focused on: Ensuring sustainability and implementation of guidelines by members especially for achieving carbon neutrality and sustainable supply chain management and climate change; Supporting self-certification programs or

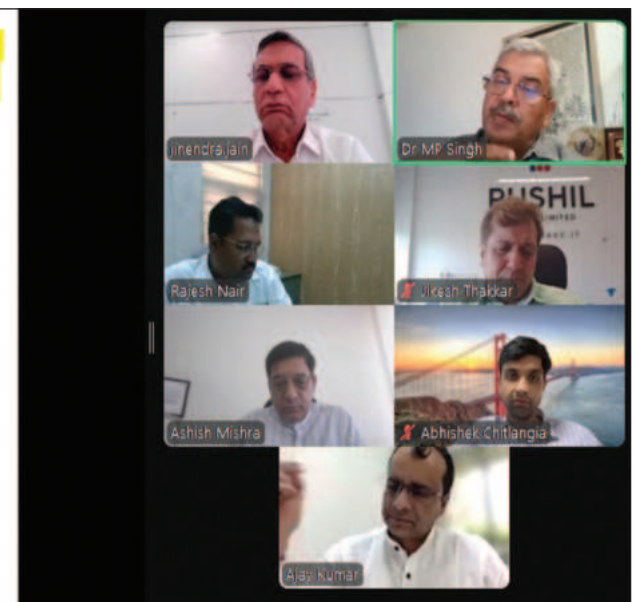
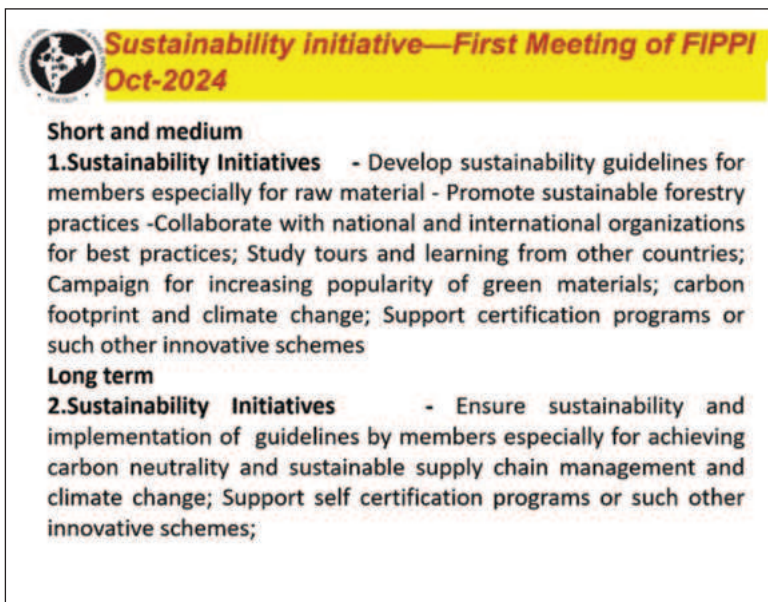
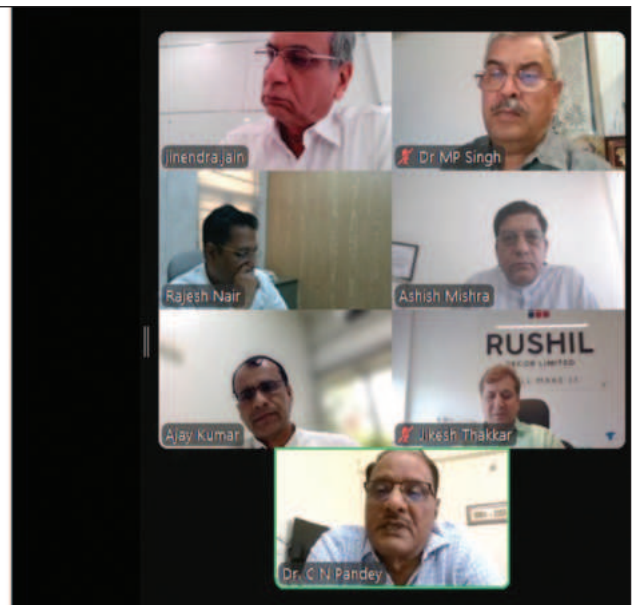
such other innovative schemes. He also presented data on plantation activities undertaken by members until December 2024. The data showed that the industries had planted approximately 9.7 crore seedlings across 1.19 lakh acres of land. He emphasized the importance of regular monitoring and progressive tracking of plantation activities and encouraged other industries to share their data. He further urged members to establish preliminary data benchmarks to help individual industries set and achieve sustainability targets effectively.

In response, Shri Ashish Mishra emphasized the need for standardizing the data and establishing a standardized pattern for sustainability initiatives. He highlighted that their organization is actively promoting agroforestry practices and have already developed a roadmap for sustainability. He further shared their long-term goal of achieving 100% self-sustainability in the long-term and outlined their target of planting 5,000 acres annually. He also mentioned that their plantation data up to March will be updated soon.

Dr. M.P. Singh requested Shri Ashish Mishra, Greenlam Industries Limited, Shri Jikesh Thakkar, M/s. Rushil Decor Limited and Shri. Ajay Kumar, M/s. Merino Industries to provide articles on their plan for sustainability and their activities for the January to March issue, 2025 of the FIPPI magazine.

Shri Jinendra Jain emphasized that the agenda should also focus on timber consumption and requirements. He highlighted that the industry is currently meeting less than 10% of its timber demand, and this requirement is expected to double by 2030. To address this, he suggested that at least 4–5 industries share their data and sustainability plans and the targets they can achieve by 2030. This would encourage other industries to take this initiative and contribute their respective data as an effort toward sustainability.

Dr. C.N. Pandey informed members about their discussions with ITC, which is actively working on sustainability and plantation initiatives. ITC projected that 60,000 hectares of land should be planted per annum with the help of farmers or with the collaboration with Forest Departments. He also highlighted that the major industries in the plywood and



panel sector account for 50% of the organized sector in India. Given this significant presence, he suggested that we can work on timber sustainability at a country level.

Shri Jikesh Thakkar emphasized that sustainability initiatives should first be implemented at the industry level and then only we can motivate other industries in this sector. He also suggested that a different model for sustainability can be developed for the unorganized sector.

Shri Rajeshwar Nair also agreed and emphasized that industries should motivate others about the plantation activities. The agenda should focus on building a roadmap, ensuring a minimum price benchmark, and collaborating with the paper industry for better alignment. He also suggested for organizing a separate meeting to focus on these aspects and proposed on preparing broad-level data to show the industry concentration across different

regions. He stated that one of the main challenges at present is the availability of the saplings. To address this issue, planning should be done to avoid any shortage of saplings.

Shri Jinendra Jain said that a plan should be made to cover all stages from pre-nursery to post-harvest. He highlighted that other industries could also benefit from this initiative. He emphasized that our goal should be to do maximum plantations and establish a common platform for data sharing to enhance industry-wide collaboration and sustainability.

Shri Ashish Mishra suggested the following key points: ensuring the participation of all the industries in meetings focused on sustainability; establish a common platform for sharing sustainability data; recognize that the individual plan is industry specific and zone specific; and there should be no internal competition on land use pattern.

Shri Abhishek Chitlangia suggested that the industry should work on sustainability initiatives under the guidance of Dr. M.P. Singh. He also inquired about the sustainability of Eucalyptus plantations in the long-term.

In response, Shri Jinendra Jain recommended using a combination of more than one species and ensuring that site-specific clones are provided. He also emphasized the need to consider potential adverse impacts when planning plantation strategies.

Dr. C.N. Pandey emphasized that wood coming from plantations should be declared as AgriProduce. He stated that resolving this issue would significantly boost the plywood and panel industry, creating new opportunities for growth and sustainability.

Dr. M.P. Singh addressed the members emphasizing the need for each industry to develop a sustainability roadmap. He stated that after gathering sufficient industry data, it can be effectively represented at the Ministry level. The major industries in this sector should first work on sustainability agenda. He also suggested that we can involve the Ministry of Environment and Climate Change and other research institutes to strengthen our sustainability initiatives. He stated that such collaboration would enhance industry recognition and credibility. He also proposed that we can write to Forest Survey of India and ICFRE for taking up the project on Plantation Monitoring and Advisory Services (P-M-A-S) for Industries.

The members also discussed their next agenda regarding the study tour to Vietnam, which will be conducted in two phases: The first tour (7th–10th April, 2025) which will be focused on Production. The second tour (15th–20th April, 2025) will be focused on Plantation and Sustainability. Additionally, members were invited to submit nominations for participation in the tour.

Shri Vivek Aggarwal suggested that we should have a long-term plan on how to achieve a broader goal. The industries are at different locations, therefore the format of plantations in the vicinity of the industry should be known

considering the different dynamics at different locations. He requested the members that industries should do 20-25% plantations in Gujarat. He also stated that survival should also be promoted along with plantation activities. This will improve the traceability and strengthen the connection with the farmers. He also suggested that the industries can establish their own nurseries to build trust with farmers and promote sustainable plantation practices.

Dr. M.P. Singh agreed with the suggestion and stated that if the nurseries are run by industries, it will provide more credibility and visibility to the industries while also promoting sustainability. He further proposed that there should be an extension wing in every industry to build a strong connection with the farmers. He also suggested that superior clones can be taken from research institutes specializing in this field to improve plantation quality and productivity. All the members agreed to this comprehensive approach as this would build trust with farmers while ensuring they receive the best quality material.

Shri Ajay Kumar also shared some insights into the sustainability activities being carried out by Merino Group.

Shri Ashish Mishra suggested that a map plotting can be done for the panel industries, which can be published in the FIPPI magazine.

Dr. C.N. Pandey shared insights on the efforts being done by Century Ply on plantation activities in Hoshiarpur and Tamil Nadu. He motivated other industries to do work in this aspect so that the data of every industry can be collected and worked on. He also emphasized that each organization should have a forestry expert to manage its plantation activities effectively.

The meeting concluded with a plan to hold the next meeting after the Vietnam tour, allowing more industries to share their sustainability data and contribute to a comprehensive strategy. □

*Readers are invited to send views, comments and suggestions if any, addressed to Editorial board
We also invite your valuable Advertisement and Article to be published in the Journal.*

“INDIAN WOOD & ALLIED PANELS” A Quarterly Journal on Plywood and Panel Industry

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Plantation Taken Up by the Members till December 2024 – Around 9.7 Crore Seedlings Planted, Covering 1.19 Lakh Acres of Land

Name of the industry	Species	Till 2023-24		During 2024-25 till Dec 2024		Total	
		Number of seedlings supplied	Area planted in Acre	Number of seedlings supplied	Area planted in Acre	Number of seedlings supplied	Area planted in Acre
Century Plyboards (India) pld	1. Eucalyptus	10812016	16993.34	5405338	7768.03	16217354	24761
	2. Kadam	626291	1450	96757	224	723048	1674
	3. Melia dubia	105192	244	20818	48	126010	292
Total		11543499	18687	5522913	8040	17066412	26727
Merino Industries Ltd., Gujarat	Eucalyptus-clonal species	5923200	7059	6156800	5534	12080000	12593
Balaji Action buildwell, Pvt. Ltd. (Action Tesa)	1. Eucalyptus	7184188	7184	4267301	4267	11451489	11451
	2. Poplar	50000	125		0	50000	125
Total		7234188	7309	4267301	4267	11501489	11576
Greenply industries Limited	1. Eucalyptus	38389803	46913	11887728	13860.51	50277531	60774
	2. Acacia- mangium	55700	56			55700	56
	3. Casuarina	268400	467	2555000	730	2823400	1197
	4. Subabul	662240	662			662240	662
	5. Bamboo			48256	120	48256	120
	6. Melia dubia	1028723	2126	5850	13	1034573	2139
	7. Khokhan	1128502	2565	108550	247	1237052	2812
	8. Dhuna	2456	6			2456	6
	9. Kadamb			203025	461	203025	461
	10. Hollong			300	1	300	1
Total		41535824	52794	14808709	15432.51	56344533	68227
Grand Total		66236711	85850	30755723	33274	96992434	119123

Call for Proposal

Plantation Monitoring and Advisory Services (P-M-A-S)

The proposal for the establishment of the Plantation Monitoring and Advisory System (PMAS) is invited to supervise and evaluate the plantations, mortality rates, and productivity of listed species across 12 states in India (UP, Uttarakhand, Haryana, Punjab, Madhya Pradesh, Gujarat, Chhattisgarh, Odisha, Telangana, Andhra Pradesh, Karnataka, and Tamil Nadu). PMAS should also provide guidance to Wood-Based Industries (WBIs) and their plantation teams to ensure a sustainable wood supply from their catchment areas (~100-150 km) and address cyclical demand-supply gaps. Additionally, list of plantation species, their estimate of optimum growth potential and demand supply chain in each state should be added that are utilized by wood industries. Funding will be supported by the members of the Indian Paper Manufacturers Association (IPMA) and the Federation of Indian Plywood and Panel Industries (FIPPI). Proposal should clearly indicate methodology to be used, type of data to be collected/generated, kind of satellite data to be used, sampling strategy, domain expertise available with details of resource persons, details of activities that would be outsourced, justification of required fund and timeline for each deliverable. Proposal must address and highlight methods to delineate and measure field boundary plantations and should provide a proof-of-concept measurement (free of cost) over a small area for which prior ground truth will be carried by funding agency before sanctioning of the proposal.

Scope of work

1. Mapping and Spatial Analysis

- Map the spatial distribution of timber species under agroforestry systems utilized by industries across WBIs catchments using satellite imagery and remote sensing technologies.
- Monitor plantation growth and productivity under agroforestry systems at a national scale.

2. Monitoring and Evaluation

- Evaluate the availability and potential of timber harvest over specific time periods to ensure sustainable supply to the industries.
- Assess the demand and supply dynamics of wood within catchments of WBIs.

3. Digital Platforms and Predictive Analytics

- Develop a web-based portal to track timber production, harvest cycles, and associated data.
- Create predictive models to track and forecast domestic and imported wood/wood chip prices based on key variables, providing advice for stakeholders.

4. Site-Specific Advisory Services

- Provide tailored consultations to farmers and producers to enhance the quality and quantity of timber harvests including plantation techniques, package of practices and genetically superior variety.
- Recommend strategies for sustainable plantation management to improve productivity and economic returns.

5. Supply Chain Optimization

- Design and implement an efficient supply chain system to reduce transportation costs, aligning supply with demand in real-time.

6. Strategic Roadmap Development

- Develop a comprehensive roadmap for WBIs to achieve self-sufficiency in wood production within their catchment areas.
- Align plantation and harvesting strategies with the production potential in a catchment. □

Rushil Decor Limited's Green Initiative in Andhra Pradesh: A Commitment to Sustainability and Community Empowerment



Jikesh Thakkar
Sr. Vice President,
Rushil Decor Limited

Rushil Décor Limited (RDL) has long been a pioneer in promoting sustainability through its various impactful initiatives. The company has demonstrated its unwavering commitment to environmental preservation and community development through its Green Initiative in Andhra Pradesh. This program, focussed on tree plantation and agroforestry, engages local communities and empowers farmers to adopt sustainable agricultural practices, benefiting both the environment and the economy.

A Landmark Achievement in Tree Plantation

One of the hallmark achievements of Rushil Décor Limited's Green Initiative is the successful planting of 24 million (2.4 crore) saplings across key districts in Andhra Pradesh, including Anakapalli, Visakhapatnam, Vizianagaram and East Godavari. These saplings are a crucial part of the company's broader strategy to combat environmental degradation and promote sustainable forestry practices. This ambitious plantation program not only focuses on increasing the green cover in these regions but also plays a key role in improving soil quality, enhancing biodiversity and mitigating the adverse effects of climate change.

Support for Farmers: Empowering Through Subsidies

Understanding that small and marginal farmers form the backbone of rural India, Rushil Décor Limited has tailored its Green Initiative to include extensive support for local agricultural communities. By providing subsidy support to small and marginal farmers, the company ensures that these farmers have the resources to integrate eucalyptus clones into their agricultural practices. This is particularly valuable as eucalyptus trees offer both ecological and economic benefits. They contribute to soil conservation, enhance water retention, and improve land productivity.

In addition to the subsidy support for farmers, Rushil Décor Limited actively encourages transport subsidies for both marginal and large farmers, which helps ease the distribution process of saplings and other essential resources. This reduces the financial burden on farmers, ensuring they can access quality planting materials and other inputs necessary for successful tree cultivation.

Technical Assistance: Enhancing Agricultural Practices

Rushil Décor Limited goes beyond financial support by





offering comprehensive technical assistance to farmers, ensuring they are well-equipped to maximize the potential of their plantations. This includes the following key activities:

1. **Agroforestry integration:** Encourages eucalyptus clonal plantation with cash crops for economic and ecological benefits.
2. **Farmer engagement and awareness Programs:** Organizes farmer meetings and workshops to educate on the benefits, challenges, and best practices of Eucalyptus clonal cultivation.
3. **Soil and plantation guidance:** Educates farmers on soil suitability, soil specific clones selection, and the correct planting methods based on seasons.
4. **Supply of high quality clones:** Provides genetically improved, high-yielding, disease-resistant, and standardized clones of Eucalyptus to farmers.
5. **Training and capacity building:** Conducts training sessions on proper plantation techniques, maintenance, and harvesting practices to maximize sustainable yields.
6. **On-Site sapling delivery:** Ensures direct delivery of saplings to farmer's locations for convenience and efficiency. □

Evolving Sustainably – Merino Industries Limited

– Initiatives under Agroforestry for FABWood (Chipboard)



Ajay Kumar

Advisor (Economics, Strategy & Sustainability)
Merino Industries

Merino Industries Limited achieved a significant milestone by commissioning a state-of-the-art, integrated industrial complex in Halol, Gujarat, in October 2023 as part of its mission of “Universal Weal through Trade and Industry”. Spanning over 57.4 acres of land, the industrial complex combines the production of FABWood (Chipboard), pre-laminated panels and modular furniture. It offers complete backward and forward linkages, from saplings for timber to finished goods for the global market, all under the ‘FABwood’ brand.

This advanced industrial facility and its activities have been designed to be globally competent, competitive and compliant from Day One of its production:

- **Globally Competent:** Equipped with cutting-edge European machinery, it produces super-strong, health-friendly chipboards—marking a first in India.
- **Globally Competitive:** Leveraging scale, automation and a strong value proposition, this unit aims to lead the ‘Future of Furniture’ movement under the Make-in-India vision.



United Nations Sustainable Development Goals (SDGs).

- **Globally Compliant:** From sourcing FSC-certified timber to achieving key certifications, this unit supports 16 out of the 17 United Nations Sustainable Development Goals (SDGs), linking sustainable agroforestry with sustainable furniture production.

The Foundation: Sustainable Agroforestry with Farmer's Connect

At the heart of FABwood production, the sustainability model is its agroforestry-driven timber sourcing strategy—empowering farmers, the true champions of wood-based industries. Since July 2022, Merino has been operationalizing its farmer engagement program HAMRAHI, in Gujarat. The objective is to create an enduring partnership for sustainable timber production through:

1. Connect

- Engage 50,000 farmers (including FPOs, cooperatives and producer companies) by 2027

2. Sustainable Production



Khedut Shivir by Merino for beneficial Agroforestry with farmers.



Plantation Team of Merino with Farmers for monitoring for best Agroforestry practices to gain the yields.

- Provide suitable saplings/seedlings of fast-growing timber species aligned with local soil and climatic conditions
- Build farmer capacity through training in agroforestry best practices and policy support
- Monitor and review timber cultivation in the factory's catchment area

3. Sustainable Procurement

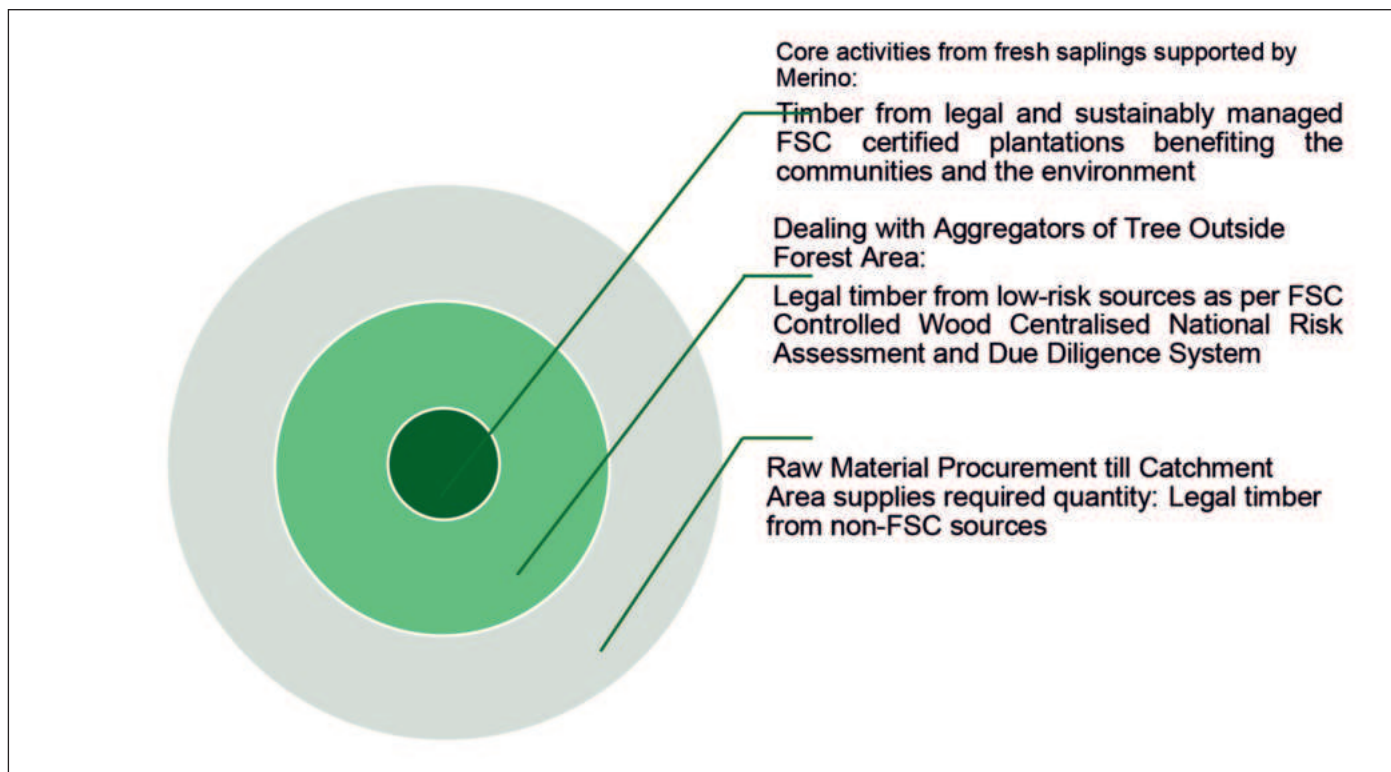
- Ensure fair, efficient and transparent harvesting, logistics and payment mechanisms
- Offer loyalty incentives and promote economies of scale for small farmers
- Assist in obtaining carbon credits and certifications like FSC
- Encourage timber cultivation across maximum land areas



Fresh Land Area under Agroforestry by Farmers with support of Eucalyptus clone No -03 from Merino's Hi-Tech Nursery.



Support to Farmer to bring their Agroforestry under FSC managed farms.



Roadmap to Sustainable Procurement by Merino in Gujarat

Merino’s Direct Farmer Collaboration: Keys to Success in Mission

With over 2,500 farmers directly engaged across nine districts of Central Gujarat—Panchmahal, Chhota Udaipur, Mahisagar, Narmada, Anand, Kheda, Vadodara, Dahod and Ahmedabad—Merino focuses on:

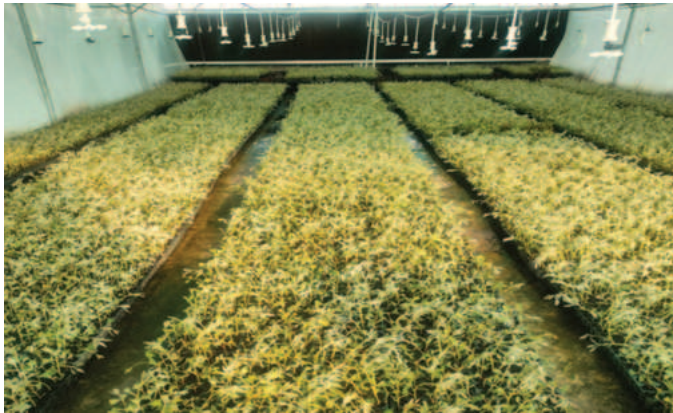
1. Promoting scientific cultivation of high-yielding species like Eucalyptus, Subabul and Casuarina
2. Ensuring the availability of clone saplings that are compatible with soil and socio-economic conditions to enhance yields and returns
3. Providing farmers with access to experts in plant care, clone development and agroforestry training
4. Facilitating forums for discussions on social and farm forestry to amplify farmer benefits
5. Operating a high-tech nursery and gene multiplication centre for clone development
6. Deploying an agri-extension team of 25+ professionals to provide on-ground handholding and support

Focused Sustainability Drive: Key support for Agroforestry in catchment area

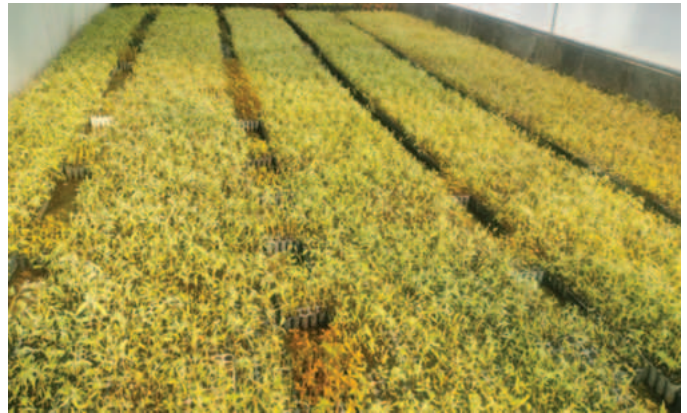
Merino has catalysed a robust agroforestry ecosystem

through several pioneering initiatives in the last 20-22 months in Gujarat:

- Promoting Eucalyptus Cultivation: Backed by a 2017 Centre for Science and Environment (CSE) report, Eucalyptus clones have demonstrated:
 - o Higher income per hectare than 60–70% of regular crops
 - o Superior water efficiency (785 liters/kg of biomass), one of the lowest compared to tree species such as Acacia (1,323 litres/kg), Dalbergia (1,484 litres/kg) and agricultural crops such as paddy rice (2,000–3000 litres/kg) and cotton (3,200 litres/kg)
 - o Strong potential for carbon sequestration, aiding climate change mitigation through its availability as renewable heat-processing energy and raw materials for recyclable products
- Dispelling Misconceptions: Clone-based Eucalyptus agroforestry, as practiced by Merino, counters the myth of eucalyptus being a water guzzler.
- Farmer Support:
 - o Clone saplings provided at concessional prices
 - o Dedicated plantation teams guiding farmers
 - o Platforms for policy advocacy and standardized agroforestry practices



Clones in Merino’s Mist Chambers



Clones in Merino’s Mist Chambers



Curiosity of foreign clients – the holding Hi-tech nursery for clone saplings compatible with soil and socio-economic conditions for local farmers in Halol by Merino



Appreciation for Clonal Saplings Development & Propagation by IKEA under responsible plantation drive by Merino

Planting Season	No. of Saplings	Area in Acres	No. of farmers involved
2022-23 (Apr 22 to Mar 23)	40,25,650	2,516	413
2023-24 (Apr 23 to Mar 24)	72,68,750	4,543	809
2024-25 (Apr 24 to Mar 25)	1,05,47,620	6,592	1,284
Total	2,18,42,020	13,651	2,506

Progress So Far: Nursery and Agro-forestry Drive

Merino’s hi-tech nursery, operational since 2023, spans over 12,580 sq. meters and has a production capacity of over 25 lakh saplings. Facilities include:

- Clonal Multiplication Area (CMA)
- Mist Chamber (10 lakh saplings/year capacity, scaling to 30 lakh by 2026)
- Hardening Chamber (2 lakh capacity)
- Open Nursery (8 lakh capacity)

In the previous year, around 8.5 lakh saplings, predominantly of Clone No: 03, 07, 413, ECXED of

Eucalyptus were given from Merino’s owned nursery.

Through its advanced nursery, combined with saplings sourced from hi-tech nurseries in Telangana and a strong farmer support infrastructure, Merino has led a transformative plantation revolution.

Way Forward

Merino’s initiative at Halol for FABwood (Chipboards) and modular furniture production is more than just an industrial project—it’s a blueprint for sustainable industrialization, grounded in environmental stewardship and inclusive farmer development. Through meaningful collaboration, technological infusion and a long-term commitment to agroforestry, Merino is evolving sustainably and setting new standards for the Indian wood-based industry. □

India's Plywood and Panel Product Imports: Trends, Sources and Market Insights



Rishabh Gandhi
Research Analyst

Federation of Indian Plywood & Panel Industry (FIPPI)

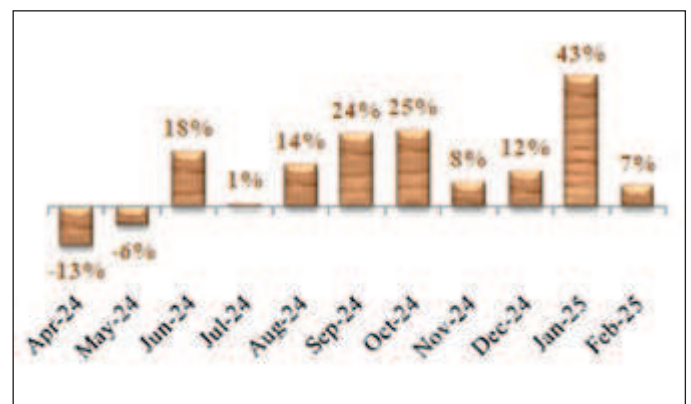
1. Introduction

India's mission to become a developed nation by 2047—'Viksit Bharat'—has created a strong impetus for growth and the need for productive capacity building across various industrial sectors. Among them, infrastructure and housing are expected to play a crucial role in driving this growth by generating employment opportunities for a diverse workforce, ranging from skilled managers to factory workers. At the heart of every major construction, interior, furniture solution or housing project lies a fundamental material—WOOD PANEL—essential for creating durable and versatile structures.

The demand for wood panel products (Plywood, Medium-density Fibreboard and Particle Board) in India is rapidly growing, driven by a boom in its forward-linking sectors, including furniture and interior design. These sectors have gained immense traction in recent years, fueled by factors such as rapid urbanisation, a booming real estate market and shifting consumer preferences toward modern, functional and eco-friendly furniture. However, as demand surges and domestic production faces challenges in scaling up swiftly, a significant portion of India's wood panel requirements is being met through imports. This study aims to analyse the trends and sources of wood panels imports into India, providing valuable market insights to help domestic manufacturers identify optimization opportunities.

2. Trend Analysis of Imports of 'Wood and Wood Products'

India's total imports of wood and wood products grew by approximately 11% during the period April - February FY25, reaching INR 54,345 crore. In comparison, total imports of wood and wood products during the same period of the previous financial year were around INR 48,786 crore.



Source: Compilations from Directorate General of Commercial Intelligence & Statistics.

Figure 1: YoY% Change in Wood & Wood Products Imports.

Figure 1 shows that the year-on-year growth rate of imports of wood and wood products experienced significant fluctuations during the last financial year. After contracting in the early months, the growth rate rebounded sharply, reaching its seasonal peak in October. A steep 43% increase in total imports during January suggests that importers were likely stockpiling inventories in anticipation of disruptions. During this period, importers were concerned about the adequacy of future supplies, given rising tensions over global trade and uncertainties surrounding the impact of mandatory QCOs (Quality Control Orders) on wood panel products.

3. Impact of Quality Control Orders (QCOs) on Plywood and Panel Imports to India

Quality Control Orders (QCOs) are the regulatory measures implemented by the government to establish quality standards for specific products. These orders ensure that products meet necessary quality and safety norms before being sold in the market. Recognising the need for stringent standards to protect consumers and facilitate the

growth of the wood panel industry, the Indian government introduced QCOs for plywood and panel products which came into effect in February 2025.

Post-implementation of mandatory QCOs on plywood and panel products, stringent quality standards are expected to restrict the import of low-quality products into India. Foreign players who were previously selling plywood and panel products to India will now need to ensure compliance with these new quality requirements, which would further drive up their costs. As a result, QCOs are likely to create a competitive advantage for domestic manufacturers who already comply with quality requirements, potentially reducing India’s reliance on imports.

4. Breakdown of Imports of Different Plywood Products under HS Code 4412

Under the umbrella of ‘Plywood, Veneered Panels and Similar Laminated Woods (HS Code 4412);’ there exists a diverse range of plywood products with distinct specifications and sourcing countries. Table 1 outlines the various plywood products under HS Code 4412 along with their 8-digit HS (Harmonized System) codes. It also provides data on imported quantities (in cubic meters), imported values (in INR crore), top sourcing countries and the percentage share of the top sourcing country, based on the data from April to December period of FY25.

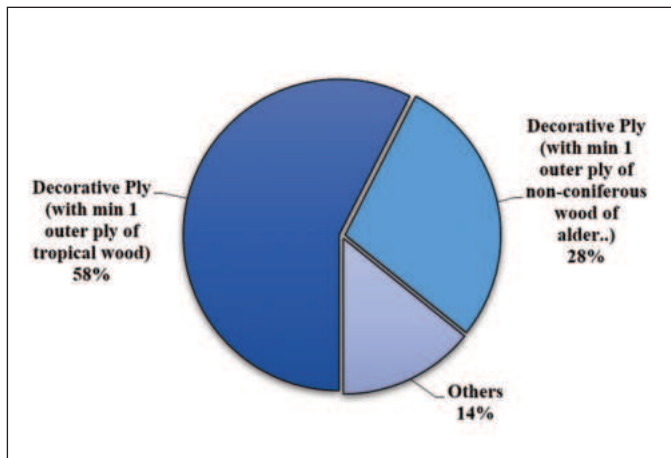
Table 1: Import Statistics of Different Products under ‘Plywood, Veneered Panels and Similar Laminated Woods (HS Code 4412)’ during April – December FY25

S. No.	HS Code (8-digit)	Product Description	Specifications	Imported Quantity (in CBM)	Imported Value (in INR crore)	Top Sourcing Countries	% Share of Top Sourcing Country
1	44123110	Decorative Plywood	With at least one outer ply of Tropical Wood	14,850	64.98	Indonesia, China, Malaysia	Indonesia (40%)
2	44123310	Decorative Plywood	With at least one outer ply of Non-Coniferous Wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut	80,940	31.97	China	China (84%)
3	44123410	Decorative Plywood	With at least one outer ply of Non-Coniferous Wood not specified in last category	270	1.31	Vietnam	Vietnam (87%)
4	44123910	Decorative Plywood	With both outer plies of Coniferous Wood	1,550	5.94	Singapore	Singapore (71%)
5	44123140	Marine & Aircraft Plywood	With at least one outer ply of Tropical Wood	1	0.00	Indonesia	Indonesia (98%)
6	44123330	Marine & Aircraft Plywood	With at least one outer ply of Non-Coniferous Wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut	10	1.37	Lithuania	Lithuania (95%)
7	44121000	Plywood, Veneered Panels & Similar Laminated Wood	Made from Bamboo	10	0.05	China	China (54%)
8	44124100	Plywood, Veneered Panels & Similar Laminated Wood	With at least one outer ply of Tropical Wood, Laminated Veneered Lumber	350	1.14	Vietnam	Vietnam (99%)

9	44124200	Plywood, Veneered Panels & Similar Laminated Wood	With at least one outer ply of Non-Coniferous Wood, Laminated Veneered Lumber	730	2.07	Vietnam	Vietnam (84%)
10	44124900	Plywood, Veneered Panels & Similar Laminated Wood	With both outer plies of Coniferous Wood, Laminated Veneered Lumber	540	1.96	New Zealand, Hong Kong, China	New Zealand (40%)
11	44125100	Blockboard, Laminboard & Batterboard	With at least one outer ply of Tropical Wood	750	1.79	Indonesia, China	Indonesia (69%)
12	44125200	Blockboard, Laminboard & Batterboard	With at least one outer ply of Non-Coniferous Wood	140	0.42	China	China (95%)

Source: Compilations from Ministry of Commerce & Industry and ITC Trade Map.

A closer analysis of the data presented in Table 1 reveals a clear dominance of two plywood products within the HS Code 4412 category. During the period April to December of FY25, the two most imported products were decorative plywood (with at least one outer ply of tropical wood) and decorative plywood (with at least one outer ply of non-coniferous wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut).



Source: Ministry of Commerce & Industry and ITC Trade Map.

Figure 2: Share of Leading Plywood Products in Total Imports (Apr-Dec FY25).

Figure 2 presents an analysis of the data from Table 1 in the form of a pie-chart. India's plywood import market is largely driven by decorative plywood products, highlighting the growing consumer preferences for highly aesthetic products. As shown in Figure 2, more than half of the total imports within the HS Code 4412 category are attributed to decorative plywood (with at least one outer ply of tropical wood). This is followed by another category of decorative plywood (having at least one outer ply of

non-coniferous wood), accounting for around 28% share.

4.1. Dominance of Decorative Plywood in India's Imports

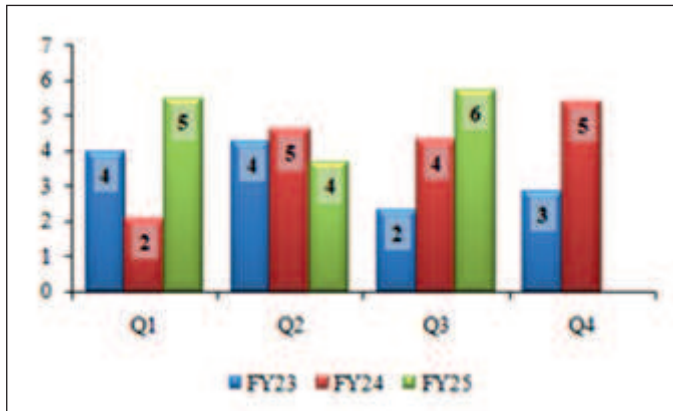
Within the HS Code 4412 category, decorative plywood products have emerged as the frontrunners in terms of imported value during the April to December FY25 period. This highlights a growing demand among Indian consumers and businesses for materials that are both functionally strong and aesthetically appealing. Furthermore, among the decorative plywood products, the varieties that dominate India's imports are:

- Decorative Plywood with at least one outer ply of tropical wood (HS Code 44123110).
- Decorative Plywood with at least one outer ply of non-coniferous wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut (HS Code 44123310).

With these two products leading the charge in India's plywood import market, the article narrows its focus to delve deeper into their import trends in greater detail.

4.1.1. Delving into Import Trends of Decorative Plywood with at Least One Outer Ply of Tropical Wood

To uncover the dynamics behind import trends of decorative plywood with at least one outer ply of tropical wood (HS Code 44123110), two distinct aspects are examined. The first is the quarterly import volumes (in thousands of cubic meters) over three fiscal years (FY23 to FY25) and the second is the mapping of quarterly imported quantity (in thousands of cubic meters) against its corresponding imported value (in INR crore).

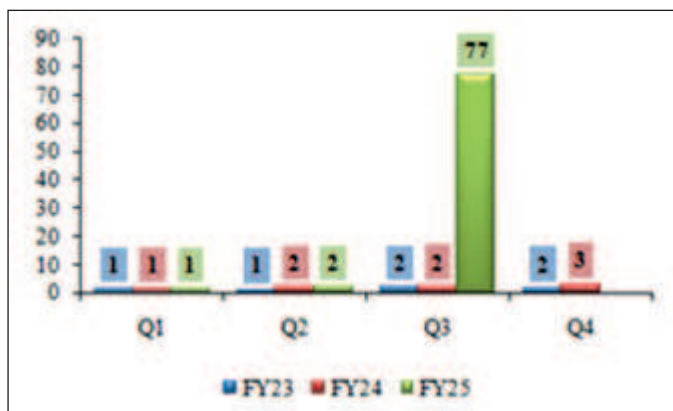


Source: Compilations from Ministry of Commerce & Industry.

Figure 3: Imports of Decorative Plywood with at least one outer ply of tropical wood (in 000' CBM).

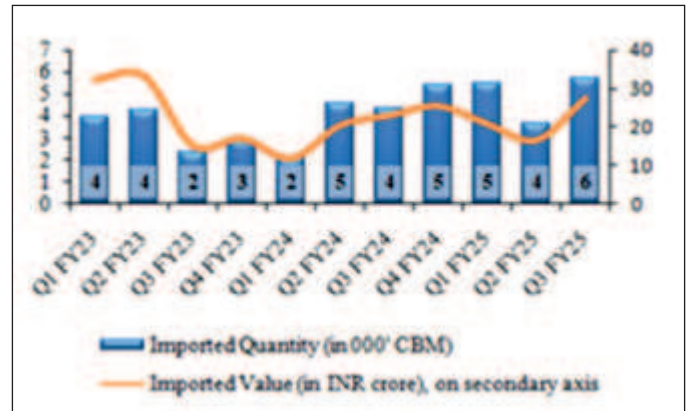
Figure 3 depicts that during Q3 FY25 (October – December 2024) period, imports of decorative plywood (with at least one outer ply of tropical wood) surged by a staggering 50%, reaching a total of 6,000 cubic meters. This spike is likely driven by the seasonal push in demand along with the rising demand for aesthetically appealing products in both residential and commercial segments. Figure 4 supports this analysis by showing that during Q3 FY25, imported volume reached its highest levels in three years with the imported value surpassing INR 27 crore.

Digging deep into the origins of India’s imports of decorative plywood (with at least one outer ply of tropical wood) based on the April – December FY25 data, Figure 5 shows the shares of different sourcing countries. It shows that Indonesia emerged as a frontrunner, with a remarkable 40% share in total decorative plywood imports to India during the April – December FY25 period. It is followed by China and Malaysia with around 27% and 21% shares respectively. The pie-chart uncovers an interesting insight – a select few countries dominate the supply of decorative plywood (with at least one outer ply of tropical wood) to India, making India vulnerable to concentration risks.



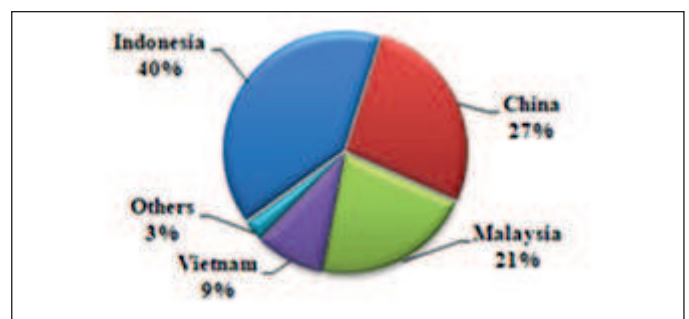
Source: Compilations from Ministry of Commerce & Industry.

Figure 6: Imports of Decorative Plywood with at least one outer ply of non-coniferous wood (in 000' CBM).



Source: Compilations from Ministry of Commerce & Industry.

Figure 4: Imports of Decorative Plywood with at least one outer ply of tropical wood (Volume vs Value).

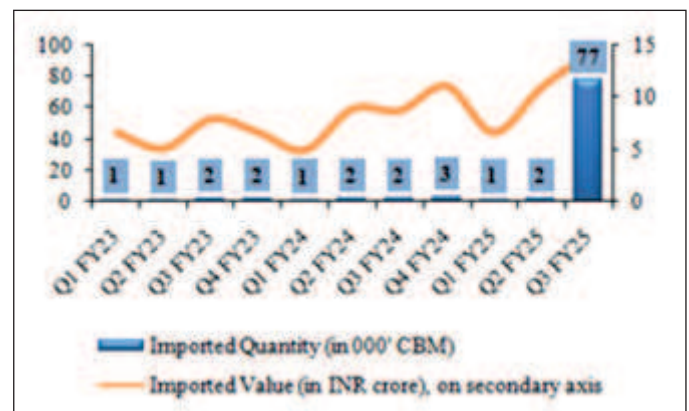


Source: Compilations from ITC Trade Map.

Figure 5: Share of Sourcing Countries in India’s Imports of Decorative Plywood with at least one outer ply of tropical wood.

4.1.2. Delving into Import Trends of Decorative Plywood with at Least One Outer Ply of Non-Coniferous Wood

The trends behind India’s imports of decorative plywood with at least one outer ply of non-coniferous wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut (HS Code 44123310) are analysed through two graphs. Figure 6 presents the quarterly import volumes



Source: Compilations from Ministry of Commerce & Industry.

Figure 7: Imports of Decorative Plywood with at least one outer ply of non-coniferous wood (Volume vs Value).

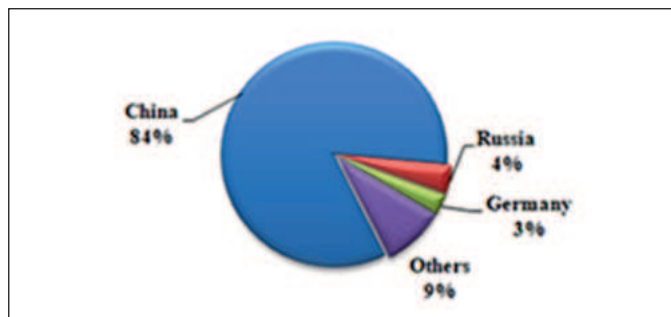
IMPORTS

(in thousands of cubic meters) over the last three fiscal years (FY23 to FY25) while Figure 7 highlights the financial impact of these imports by mapping quarterly imported quantity (in thousands of cubic meters) against its corresponding imported value (in INR crore).

While the quarterly import volumes of decorative plywood (with at least one outer ply of non-coniferous wood of aforementioned species) have remained within a range of 1,000 to 3,000 cubic meters since the start of FY23, Q3 FY25 figures depict a completely different story. Figure 6 reveals that during the Q3 FY25 period (October – December 2024), imports skyrocketed to a massive figure of about 77,000 cubic meters. Furthermore, Figure 7 shows that the value of India's imports of decorative plywood (with at least one outer ply of non-coniferous wood of aforementioned species) surpassed INR 14 crore for the first time in three years during Q3 FY25.

Compared to the value of the same quarter last year, Q3 FY25 imports mark a jump by around 34 times in volume terms, which raises some serious questions about whether this surge is driven by factors beyond organic growth, such as the dumping of substandard products.

Figure 8 presents a detailed breakdown of the shares of different sourcing countries in India's total imports of



Source: Compilations from ITC Trade Map.

Figure 8: Share of Sourcing Countries in India's Imports of Decorative Plywood with at least one outer ply of non-coniferous wood.

decorative plywood (with at least one outer ply of non-coniferous wood of alder, ash, eucalyptus, hickory, polar, aspen, robina, tulipwood or walnut) based on the April – December FY25 data. It reveals that China was the undisputed leader, significantly outpacing other suppliers in terms of imports of decorative plywood with the aforementioned species of non-coniferous wood to India during April – December FY25.

5. Overview of Imports of Different Fibreboard Products under HS Code 4411

Table 2: Import Statistics of Different Products under 'Fibreboard of Wood or Other Ligneous Materials, Whether or Not Bonded with Resins or Other Organic Substances (HS Code 4411)' during April – December FY25.

S. No.	HS Code (8-digit)	Product Description	Specifications	Imported Quantity (in Metric Tons)	Imported Value (in INR crore)	Top Sourcing Countries	% Share of Top Sourcing Country
1	44111200	Medium Density Fibreboard	Of a Thickness not exceeding 5 mm	53,454	152	Thailand, Indonesia, Malaysia	Thailand (41%)
2	44111300	Medium Density Fibreboard	Of a Thickness exceeding 5 mm but not exceeding 9 mm	18,481	64	China, Vietnam, Thailand	China (31%)
3	44111400	Medium Density Fibreboard	Of a Thickness exceeding 9 mm	35,547	113	Vietnam, Thailand, Malaysia	Vietnam (42%)
4	44119211	Hard Board	Of a Density exceeding 0.8 grams per cubic centimeter, not mechanically worked or surface covered	7,013	30	Thailand	Thailand (92%)
5	44119221	Hard Board	Of a Density exceeding 0.8 grams per cubic centimeter	2,682	10	Thailand	Thailand (95%)

Source: Compilations from Ministry of Commerce & Industry and ITC Trade Map.

Table 2 outlines the import statistics for various fibreboard products under the HS Code 4411 category for the period April - December FY25. The table maps these fibreboard products to their corresponding 8-digit HS (Harmonized System) codes, along with import volumes (in metric tons), imported values (in INR crore), top sourcing countries and the percentage share of the leading sourcing country.

5.1. Dominance of Thinner Medium-Density Fibreboard (MDF) in India’s Imports

The data presented in Table 2 shows that within the HS Code 4411 category, imports of medium density fibreboard (MDF) surpass those of other fibreboard products. Further analysis showcases that within the MDF category, MDF with a thickness not exceeding 5 mm is the most commonly imported product. The strong demand for these thinner boards reflects the growing needs for lightweight materials in applications such as decorative panels and interior design.

In contrast, the demand for imported MDF boards with medium thickness (exceeding 5 mm but less than 9 mm) lags behind that of other MDF boards. This can be attributed to the fact that these boards often fail to strike an optimal balance between strength and weight. While thicker boards are preferred for structural applications such as furniture and cabinetry, thinner boards are favoured for decorative applications. Positioned between these two extremes, medium-thickness MDF struggles to meet the specific demands of either category, resulting in lower import volumes.

5.2. Thailand Emerging as the Leading Source for Fibreboard to India

The fibreboard import market indicates that supply is concentrated in a few select countries. Based on the import data of April - December FY25, Thailand has emerged as the frontrunner, particularly in the hardboard segment, where it holds over 90% of the market share. In addition to hardboards, Thailand also leads the import market for thinner MDF. Furthermore, Vietnam has positioned itself as a primary source for MDF with a thickness exceeding 9 mm. This illustrates how different countries have strategically positioned themselves to cater to specific segments of the Indian market. This analysis highlights the dominance of thinner MDF boards in the fibreboard import market. Additionally, overreliance on Thailand, particularly in the hardboard segment, makes the supply chain vulnerable to potential disruptions.

6. Analysis of Imports of Different Particle Board Products under HS Code 4410

The following table, Table 3, provides a detailed overview of import statistics for various products under the HS Code 4410 category for the period April - December FY25. It includes the 8-digit HS (Harmonized System) codes, imported quantities (in metric tons), imported values (in INR crore), leading sourcing countries and the percentage share of the top sourcing country for each product under this category.

Table 3: Import Statistics of Different Products under ‘Particle Board and Similar Board of Wood or Other Ligneous Materials, Whether or Not Agglomerated with Resins or Other Organic Binding Substances (HS Code 4410)’ during April - December FY25.

S. No.	HS Code (8-digit)	Product Description	Specifications	Imported Quantity (in Metric Tons)	Imported Value (in INR crore)	Top Sourcing Countries	% Share of Top Sourcing Country
1	44101110	Particle Board	Plain Particle Board	29,066	78	Thailand, Malaysia, China	Thailand (43%)
2	44101120	Insulation Board and Hardboard	Insulation Board and Hardboard	149	1	Brazil	Brazil (94%)
3	44101130	Veneer Board	Without Decorative Veneer on any face	825	7	Turkey, Romania, Italy	Turkey (38%)
4	44101210	Oriented Strand Board/Wafer Board	Unworked or Sanded	448	1	Thailand	Thailand (91%)

Source: Compilations from Ministry of Commerce & Industry and ITC Trade Map.

6.1. Plain Particle Board's Dominant Position in India's Imports

A closer analysis of the data presented in Table 3 highlights that plain particle board is the most imported product in the HS Code 4410 category. During the period April - December FY25, India imported over 29,000 metric tons of plain particle board, valued at over INR 78 crore. This points to the growing demand for plain particle board in India, driven by its cost-effectiveness and widespread use in applications such as furniture and construction projects.

6.2. Thailand as a Top Supplier of Particle Board Products to India

The examination of various sourcing countries selling particle board products to India shows that Thailand has emerged as a dominant supplier, particularly for oriented strand boards, where it holds about 91% of the market share. Additionally, Thailand is also the top sourcing country for India's plain particle board imports. In the insulation board and hardboard segment, Brazil leads and contributed around 94% of the imports to India during April - December FY25.

Similar to the fibreboard products category, India's import market for particle board products is highly reliant on Thailand, which puts the supply chain at risk of disruption.

7. Way Forward

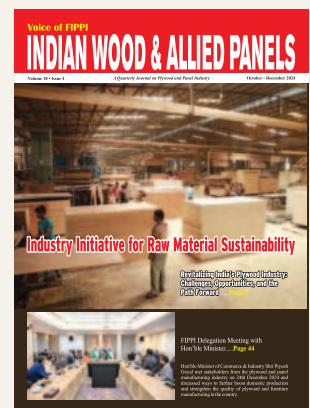
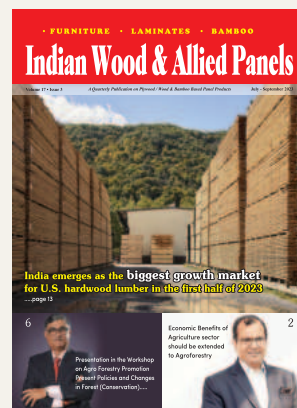
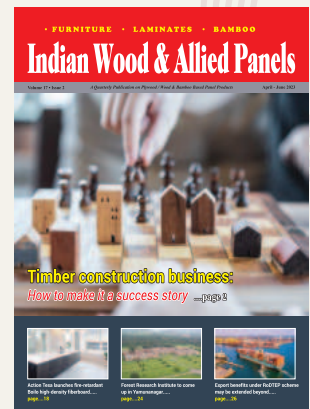
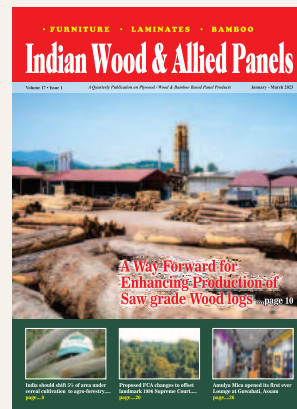
This study highlights a sharp increase in decorative plywood imports to India during Q3 FY25, diverging from historical trends. Data indicates that China may be the primary driver of large-scale dumping of sub-standard decorative plywood (with at least one outer ply of non-coniferous wood) into the Indian market during this period.

In the fibreboard and particle board segments, this analysis shows that India's import market for these products is highly reliant on one nation—Thailand—making the supply chain vulnerable to disruptions.

Going forward, the implementation of the Quality Control Order (QCO) for plywood and panel products since February 2025 is expected to bring greater discipline to industry alignment while enhancing productive capacity that meets established quality and standard norms. Additionally, it is likely to encourage a shift in consumer preferences, driving demand for safe, high-quality products endorsed by experts from leading institutions in the country. The QCO is set to curb the influx of low-quality imports, fostering a standardized and competitive marketplace for domestic plywood and panel manufacturers. □



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Minutes of the Meeting of the Federation of Indian Plywood and Panel Industry Held on 17th January 2025 at Hotel Park, New Delhi, for Planning the Roadmap for the Year 2025

Members Present:

1. Mr. Sajjan Bhajanka Chief Patron FIPPI & Chairman M/s. Century Plyboard (I) Ltd.,
2. Mr. N.K. Aggarwal Patron FIPPI & Chairman M/s. Balaji Action Buildwell Pvt. Ltd.,
3. Mr. M.S. Vagh Patron FIPPI & Managing Director M/s. Hunsur Plywood Works Pvt. Ltd.,
4. Mr. Rajesh Mittal President FIPPI & Chairman M/s. Greenply Industries Limited
5. Mr. Jaydeep Chitlangia Senior Vice President FIPPI & Mentor M/s. Duroply Industries Ltd
6. Mr. Jikesh Thakkar Vice President FIPPI & Managing Director Rushil Décor Limited
7. Dr. M.P. Singh Director General FIPPI
8. Mr. Shobhan Mittal Managing Director M/s. Green Panel Industries Ltd.,
9. Mr. M.L. Gattani Managing Director M/s. Gattani Industries
10. Mr. Madhusudan Lohia Director M/s. Merino Industries Ltd.,
11. Mr. Saurabh Mittal Managing Director M/s. Greenlam Industries Limited
12. Mr. Sumant CEO MDF M/s. Century Plyboard (I) Ltd.,
13. Mr. Rajiv Daga Managing Director M/s. Archidply Industries Limited
14. Mr. Rajeshwar Nair M/s. Balaji Action Buildwell Pvt. Ltd.,
15. Dr. C.N. Pandey Senior Technical Advisor FIPPI
16. Mr. Nareh Tewari Northern India Plywoods
17. Mr. Jinendra Kumar Jain Senior Sustainability Advisor
18. Mr. Yogesh Arora President M/s. Greenlam Industries Ltd.,
19. Dr. Purosottam M/s. Green Panel Industries Ltd.,
20. Mr. Neeladri Basu M/s. Green Panel Industries Ltd.,
21. Mr. Ajay Kumar Advisor M/s. Merino Industries Ltd.,
22. Mr. Dhanesh Pandey M/s. Century Plyboard (I) Ltd.,
23. Mr. Sandeep Gupta President UK UP Plywood Association Northern Plywood
24. Mr. Bhawani Singhal Director URB Wood Industry
25. Mr. Aditya Agarwal Partner Northern India Plywood (NIPMA)
26. Mr. Amit Goel Director Crosta Panels GM G Plywood Yamunanagar
27. Mr. Sunil Solanki Sales Head Group Aryamman
28. Mr. Raghav Gupta COO M/s. Minimax Plywood
29. Mr. Maipali Singhal Director M/s. Suraj Wood
30. Mr. Arjit Jana M/s. Riangdo Veneers Pvt. Ltd.,
31. Mr. Rishabh Gandhi Research Analyst FIPPI
32. Mr. Anthony Fernandes Office Secretary FIPPI

Dr. M.P. Singh informed members that today we have a meeting of the Primary members to discuss the road map for moving forward. In the afternoon we have a meeting with Affiliated Members to discuss how we can work together on the common Agenda for the benefit of Plywood & Panel Industry. In the evening a meeting has been planned with Furniture Industry to address their concerns related to the plywood and panel products.

Shri Rajesh Mittal, President, FIPPI welcomed all the members and Shri Sajjan Bhajanka as the Chief Patron FIPPI and Shri N.K. Aggarwal & Shri M.S. Vagh Patron. He said that it is great to see lot of young people taking the initiative and attending the meeting physically and now we can take forward the Plywood and Panel Industry to face the challenges confronting our Plywood & Panel Industry. First and foremost we have to ensure the timely implementation of QCO. Secondly we have to work on the sustainability issue of Timber as raw material. We have also other issues namely rationalization of GST and BCD. In this meeting we will take the views of all the members and move forward in achieving these goals.

Shri Mittal requested everyone to actively participate in the discussion and give suggestion so that we can implement the road map whether it is related to Plywood, MDF or Particle board. He further requested Shri Sajjan Bhajanka Chief Patron, FIPPI to share his valuable views and guide the gathering towards implementing the roadmap.

Mr. Sajjan Bhajanka greeted Shri Rajesh Mittal President FIPPI, Dr. M.P. Singh Director General FIPPI, Shri Naresh Tewari, Shri NK Aggarwal, Shri Saurabh Mittal, Shri Jaydeep Chitlangia and all the Senior Members physically present in the meeting and said that today I am delighted to see



Dr. M.P. Singh mobilizing the members after joining FIPPI towards common goals. Last few months there has been lot of activities and achievements in FIPPI. We have met the Hon. Minister Ministry of Commerce and Industry regarding QCO implementation. With the implementation of the QCO we can protect the Industry from sub-standard products. We have worked closely with BIS in meeting the demand of the Industry and there have been lot of amendments and as we move forward and progress there will be lot of more amendments coming up to meet the requirements of the Industry. It is a continuous process and after the implementation of QCO Order we can make more amendments as per our requirements for the betterment of the Industry. We have to work together and we have long way to go for the Plywood and Panel Industry as we are only 4% of China in the wood panel industry. I am very positive that there will be hectic growth in the wood panel industry in India. With the efforts of the farmers we will get sustainable raw material at moderate and competitive prices.

I am more than delighted to see Mr. Rajesh Mittal leading FIPPI in the right direction enthusiastically with full vigor

and support from all the members. Mr Jaydeep Chitalangia has worked with me for so many years and he is the common link with old and new executive teams.

Mr. Moiz Vagh, Patron FIPPI expressed his support that we are moving in the right direction and let us move forward and invited Mr. Rajesh Mittal, Dr. M.P. Singh and senior members for a meeting in SIPMA in Bengaluru.

Shri N.K. Aggarwal Chairman Action Tesa and Patron FIPPI was happy for the implementation of Quality Control Order and Ministry of Commerce & Industry has given 100% assurance that it will be implemented. It is good that sub-standard import will come down and manufacturers will benefit and we would be able to give better quality. Shri N.K. Aggarwal desired that we should go for the advertisement at the earliest to create public awareness.

Coming to 1ST agenda on QCO related issue, Dr M P Singh informed the members that full page advertisement has been prepared and requisite clearance has been obtained to publish it in the newspapers and social media. The advertisement was displayed to the members and members approved for full page advertisement in two

national newspapers, which can be funded by individual industries or FIPPI. Shri Jaydeep Chitlangia offered to advertise it in ToI. He further suggested that we should go for digital and objective is to create public support.

Shri Dr. M.P. Singh opined that we should continue working with MSME They have got more time for compliance, therefore we should help them. If bigger Industries have testing lab in their premises they can accommodate the small units for testing purposes. It can be a BIS accredited lab, we need to explore all possibility to mitigate their limitation. Further we may help them in conducting awareness programme. We should work as an entity with them and help them in engaging with BIS also so that they can join in the implementation of BIS QCO.

Shri Rajesh Mittal and Shri Jaydeep Chitlangia also expressed that we should support the MSME & SSI sector as they cannot afford to set up laboratory and we should facilitate them in testing. Shri Sajjan Bhajanka stated that we should take clarification from BIS in setting up the lab as there are some conditions in setting up the labs. Shri Jaydeep Chitlangia responded that we can facilitate in setting up Cluster labs and 7-8 units can come together and set up cluster labs. Shri Sajjan Bhajanka said that we should find out the minimum cost that is available in setting up a lab and inform the SSI & MSME and facilitate them in setting up the lab.

Under this agenda, Dr. MP Singh informed about a letter that have been sent by few furniture manufacturers to DPIIT stating that BIS Standards are substandard. And they are going to challenge it legally. Shri Rajesh Mittal stated that we should take all precautions against this and be aware of this. Particularly they are targeting the MDF and Particleboard and are also falsely publicizing information related to increase in prices. Dr. M.P. Singh clarified that an email sent long back is being misused and manipulated by a few to create narrative about price rise and misguiding the Industry. They were also circulating on whatsapp group that there will be an increase in prices.

Mr. Ajay Kumar said that we should be careful in discussing prices as prices cannot be discussed in such forums and we can be penalized for this Even DPIIT does not discuss price part and it does not stand on any committee.

Shri. Saurabh Mittal wanted to know the strategies we are going to adopt in the challenges we are going to face in the implementation of QCO. Is there a road map for this and we should be specific on this and be practical on what direction we are going to take as I am not clear on this as Dilution happens in Quality.

Shri M.L.Gattani said Lab is not an issue but getting

Chemist and Production Manager is a problem because of cost as their salary are very high. It is not concerned with viability. Therefore the challenges there are 300 to 400 manufacturers who do not have GST number in producing the goods. M.L. Gattani stated that Quality is not an issue. Taxation is an issue.

Shri Jaydeep Chitlangia informed that for the last one year I have met BIS DG office a number of times. We are 3000 units. BIS says that there are 800 factories out of 3000 who have licences. We had approached all the associations for the awareness programme and only 3-4 responded to the awareness programmes. Implementation of QCO will help the carpenters in particular and consumers in general, getting standardized good quality materials.

On GST Shri Sajjan Bhajanka informed that there was earlier excise duty where only 100 to 300 got registered but as soon as GST came and it became mandatory within 6 months everyone got registered. So same way as time passes QCO will also get implemented and everybody will get registered and help in the process of implementation. Every change takes some time but at the end it is fruitful.

Shri Rajesh Mittal said that nobody is against QCO and everybody is supporting it. Our first target is to implement QCO and then awareness programme and issue of constraint of Testing Labs can be taken up in mission mode.

The next on the agenda was Sustainability of Raw Material. Shri Jinendra Jain informed that we have taken initiative in the plantation drive but we have not got any data and our first priority is to compile the data from our Industry. As IPMA they have data to show but FIPPI members do not have any data. The format is there which is sent from FIPPI but members should respond to it. We have 3-4 data related to plantation activities. We should work on this step by step. As we have circulated the data and request members to send the data.

Shri Saurabh Mittal stated that it is long term goal we should engage with the Industry and have a separate meeting on this subject as it is a wider subject and this issue is not that easy.

Shri Jinendra Kr Jain said that we should organize Advance Technology of saplings which will give good yield. Shri Jinendra informed that his submission was that one person from each unit should be in the Sub-committee on Sustainability who should take a decision and that will take the move forward and lot of this can be done like FSC certification, Carbon neutral and other work on these aspects. Shri Rajesh Mittal said that we can facilitate members to encourage farmers as they have made a

MEETINGS

PPT on this aspect and members can take advantage by going through the input on this and they can help other members on this aspect.

We have requested the members to provide their comments suggestion on Plantation Monitoring and Advisory Services (PAMS) , so that FIPPI can talk to some agency for the job.

Shri Jinendra Jain said that we should have study tour as it is seeing is believing as IPMA had conducted a study tour and brought a clone and got a better yield. Once the farmer get benefitted as example is Haryana where there is very encouraging Plantation activities going on and they are moving in the right direction.

Shri Mittal informed that Dr. M.P. Singh is planning a tour to Vietnam and senior members can give their names once it get finalized.

Mr. Jinendra Kr Jain said that we should not limit to one or two species but go for wider choice of species. We should take one Senior Members from each unit on Plantation and have a meeting on this.

Dr. C.N. Pandey informed that IPMA & FIPPI had a meeting on plantation aspect and it was committed that they will provide the data but none of them provided the data. Dr. C.N. Pandey said that we have a presentation where all the data is available as how much land is required with the availability of expansion of the product.

Dr. M.P. Singh proposed that let us have the nominations first and then we can have a separate meeting of the sub-committee to decide the framework of sustainability of raw material.

Shri Rajesh Mittal said that we can have an exclusive meeting on this aspect.

Coming to 3rd agenda of trade related issues, Shri Jaydeep Chitlangia informed that we are working on the GST aspect as how to go about and get it reduced from 18% to 12% and further get it reduced by 5%. PWC has given a note as to how to go about it. PWC will help us and we are working on it.

Shri Jaydeep Chitlangia informed that DPIIT can help us in MIP as they have the administrative control and we have to finalize the proposal and give it to Ministry of Commerce & Industry where they have a separate desk on it.

On 4th agenda of advocacy with government, Dr. M.P. Singh informed that we are pursuing for setting up Wood Products Development Council on the line of Leather and Paper Industry; so far we have not been able to meet

success on this issue. We have to pursue this further as through Development Council on Wood Products so that we can have an authentic forum and platform to discuss our crucial issues with the backing of the Government.

We are also requesting Ministry of Environment & Forests for changes in transit and felling ecosystem and trying to convince the Government that wood coming from farmers' land be declared as AgriWood Products not a forest products. We are suggesting to incorporate certain guidelines on these issues so that all the states uniformly build ecosystem for agroforestry.

On 5th agenda related to organizational capability of FIPPI, Dr. M.P. Singh emphasized to strengthen the capability for running the activities of the Federation. We are having presently 22 Primary Members who will pay membership subscription of 0.01% of their turnover (minus laminates) with minimum 1 lakh. The annual membership fee for Associate Member will be One Lakh. We are not charging any subscription from Affiliated Members. We have to strive a Membership drive and enroll more members achieve the road map of FIPPI.

FIPPI publishes a quarterly magazine Indian Wood & Allied Panels. The October-December 2024 issue was circulated at the meeting and Dr. M.P. Singh highlighted that we should promote this magazine as it is the Voice of FIPPI. The magazine can be published bimonthly to keep pace with the activities of FIPPI and the Sector with its name shortened as Indian Wood Panels. Members should come forward and release advertisement and articles. Mr. Saurabh Mittal and Madhusudan Lohia would take the initiative in promoting the magazine.

Other discussions:

As FICCI has the mandate for PLI for furniture. Further discussions may be conducted with FICCI regarding the Production Linked Incentive (PLI) scheme to support industry growth on Engineered Wood.

A structured yearly calendar for meetings and key industry activities is to be developed and maintained.

A technical committee should be constituted with furniture manufacturers associations and IWST scientists for effective collaboration to develop specialized application product using indigenous resources. Shri Shobhan Mittal was of the view that most manufacturers have their own laboratory and we should use it for proper research and strengthen our resources.

Meeting ended with vote of thanks to the Chair. □

Minutes of the B2B Meeting between FIPPI and the Association of Furniture Manufacturers and Traders (AFMT) Held on 17th January 2025 at Hotel Park, New Delhi

List of Participants from AFMT

1. Mr. Chintan Parekh - Hon. Secretary - AFMT INDIA
2. Mr. Rajesh Chhabria - Joint Secretary - AFMT INDIA
3. Mr. Amit Chugh - Hon. Secretary - AFMT North India
4. Mr. Mayank Singhal - Member AFMT
5. Mr. Saurabh Jain - Member AFMT
6. Mr. Sunil - Representative of Aryamaan Interior (Mr. Dhanesh Bhatia)
7. Mr. Amit Vaze - Member AFMT

List of Participants from FIPPI

1. Mr. Sajjan Bhajanka Chief Patron FIPPI & Chairman M/s. Century Plyboard(I) Ltd.,
2. Mr. N.K. Aggarwal Patron FIPPI & Chairman M/s. Balaji Action Buildwell Pvt. Ltd.,
3. Mr. M.S. Vagh Patron FIPPI & Managing Director M/s. Hunsur Plywood Works Pvt. Ltd.,
4. Mr. Rajesh Mittal President FIPPI & Chairman M/s. Greenply Industries Limited
5. Mr. Jaydeep Chitlangia Senior Vice President FIPPI & Mentor M/s. Duroply Industries Ltd
6. Mr. Jikesh Thakkar Vice President FIPPI & Managing Director Rushil Décor Limited

7. Dr. M.P. Singh Director General FIPPI
8. Mr. Shobhan Mittal Managing Director M/s. Green Panel Industries Ltd.,
9. Mr. M.L. Gattani Managing Director M/s. Gattani Industries
10. Mr. Madhusudan Lohia Director M/s. Merino Industries Ltd.,
11. Mr. Saurabh Mittal Managing Director M/s. Greenlam Industries Limited
12. Mr. Sumant CEO MDF M/s. Century Plyboard(I) Ltd.,
13. Mr. Rajiv Daga Managing Director M/s. Archidply Industries Limited
14. Mr. Rajeshwar Nair M/s. Balaji Action Buildwell Pvt. Ltd.,
15. Dr. C.N. Pandey Senior Technical Advisor FIPPI
16. Mr. NarehTewari Northern India Plywoods
17. Mr. Jinendra Kumar Jain Senior Sustainability Advisor
18. Mr. Yogesh Arora President M/s. Greenlam Industries Ltd.,
19. Dr. Purosottam M/s. Green Panel Industries Ltd.,
20. Mr. NeeladriBasu M/s. Green Panel Industries Ltd.,
21. Mr. Ajay Kumar Advisor M/s. Merino Industries Ltd.,
22. Mr. Dhanesh Pandey M/s. Century Plyboard(I) Ltd.,



MEETINGS

23. Mr. Sandeep Gupta President UK UP Plywood Association Northern Plywood
24. Mr. Bhawani Singhal Director URB Wood Industry
25. Mr. Aditya Agarwal Partner Northern India Plywood (NIPMA)
26. Mr. Amit Goel Director Crosta Panels GM G Plywood Yamunanagar
27. Mr. Sunil Solanki Sales Head Group Aryamman
28. Mr. Raghav Gupta COO M/s. Minimax Plywood
29. Mr. Maipali Singhal Director M/s. Suraj Wood
30. Mr. Arjit Jana M/s. Riango Veneers Pvt. Ltd.,
31. Mr. Rishabh Gandhi Research Analyst FIPPI
32. Mr. Anthony Fernandes Office Secretary FIPPI

The meeting commenced with a welcome address by the President of FIPPI, who expressed his appreciation for the strong participation from AFMT members. He emphasized the primary objective of the meeting: the implementation of the Quality Control Order (QCO) for Plywood, MDF, and Particleboard in the furniture manufacturing sector in India.

The Secretary of AFMT, Mr. Chintan Parekh, extended his full support on behalf of AFMT members towards the QCO initiative. He highlighted that its implementation would be mutually beneficial for both organizations, enhancing industry standards and consumer confidence.

During discussions, Mr. Parekh raised concerns regarding certain specialized wood-based panel products that are currently not manufactured domestically. He emphasized the need for exemptions on imports for these products until the domestic industry is capable of producing them. This concern was acknowledged, and it was agreed that further deliberations would be held to address the issue.

As part of the agreed action points, Mr. Parekh was requested to provide the technical specifications of these specialized products, along with their applications in the furniture sector.

The President of FIPPI assured the members that, in the long run, efforts would be made by interested members to develop these specialized products indigenously. It was decided to constitute a technical committee comprising representatives from the plywood industry and AFMT members, who will collaborate closely with scientists from IWST to develop specialized application products using indigenous resources. This initiative would help reduce costs and minimize dependence on imports, strengthening the domestic industry. □



FEDERATION OF INDIAN PLYWOOD
AND PANEL INDUSTRY

Vision

Empowering the growth, sustainability, and global competitiveness of Indian Plywood and Panel Industry through collaboration, innovation, stewardship and advocacy.

Mission

To make FIPPI a robust organization representing all firms, companies, corporations, associations, and individuals engaged in the 'Plywood & Panel' industry in India nationally and internationally, promoting their interests, fostering cooperation among members, and advocating for policies and institutions to support the sector's growth, quality, competitiveness, sustainability, and stewardship.



Join FIPPI and Shape the Future of the Indian Wood Industry



FIPPI Expands Its Network, Welcomes Indian Bagasse Board Manufacturers Association (IBBMA) as an Affiliated Member



In a significant step towards sustainability, the Federation of Indian Plywood and Panel Industry (FIPPI) has welcomed the Indian Bagasse Board Manufacturers Association (IBBMA) as an affiliated member. This collaboration highlights the commitment of both organizations to advancing sustainability and innovation within the sector. The meeting, held in Savli, Vadodara, Gujarat, in February 2025, brought together key representatives from both associations to discuss

future initiatives aimed at fostering sustainable growth in the industry.

The meeting was attended by key leaders from FIPPI, including:

1. Shri Rajesh Mittal – President, FIPPI
2. Dr. MP Singh – Director General, FIPPI
3. Shri Jikesh Thakkar – Vice President, FIPPI

The Bagasse Board Association was represented by:

1. Shri Rakesh Verma (Bobby)
2. Shri Amrit Patel
3. Shri Dhaval Kachadia

Following the discussions in the February meeting, momentum continued when a Memorandum of Understanding (MoU) was signed between the Institute of Wood Science and Technology (IWST) and the Indian Bagasse Board Manufacturers Association (IBBMA) in March in Bengaluru. With Dr. M.P. Singh, IFS, Director General of FIPPI, and Shri Rajesh S. Kallaje, IFS, Director of IWST, in attendance, the MoU set the stage for a collaborative project. IWST will undertake a project on 'Evaluation of Properties of Bagasse Particle Board Manufactured in India by MSMEs,' which will be funded by the IBBMA. The project aims to evaluate the properties of these boards and recommend suitable values for BIS standards, establishing a foundation of higher quality assurance and consistency in bagasse particle board production. □



MATECIA Marks a Grand Debut in Southern India at Bengaluru, Setting a New Benchmark for the Industry



The inaugural edition of MATECIA Southern India concluded on a high note at BIEC, Bengaluru from 21st to 23rd February 2025, solidifying its position as a premier trade exhibition for materials, architecture, and design nationally and also imprinting deep roots in the Southern states of Karnataka, Kerala, Tamilnadu, Andhra Pradesh, Telangana and Goa.

More than 20500+ visitors, including dealers and distributors, architects, interior designers and decorators,

builders, manufacturers graced the exhibition fostering networking, and business collaborations on an unprecedented scale.

Highlights of MATECIA Southern India 2025:

- **Massive Industry Participation:** Thousands of visitors, including top architects, interior designers, and business owners, engaged in dynamic discussions and business opportunities.



- **Innovative Product Showcases:** The latest advancements in building products and surface innovations were unveiled, setting new industry trends.
- **Exclusive Networking:** The event facilitated meaningful collaborations among brands, dealers, architects and specifiers, driving future growth in the region.



Knowledge-Driven Sessions: Insightful talks and interactive sessions enriched participants with valuable insights on market dynamics, design evolution, technology advancements, and business strategies.

Federation of Indian Plywood & Panel Industry organized a panel discussion on the topic Adoption of BIS by Industry 2025 - Way forward on 21.02.2025 from 3:30 to 4:30 PM at the MATECIA, Building Material Exhibition which was held from 21 – 23 February 2025 at BIEC Bengaluru. Senior Officers/Scientists from IWST guided the industry in addressing these concerns and adopting appropriate strategy.

India Furniture Conclave – A Resounding Success

Alongside MATECIA Southern India, the INDIA FURNITURE CONCLAVE in Bengaluru emerged as a key highlight, bringing together industry experts, entrepreneurs, and designers to explore critical aspects of the furniture industry, including market trends, technological advancements, and business growth strategies. The 2 Day long conclave facilitated impactful discussions, fostering collaborations and paving the way for future growth in the sector. □

INDIAWOOD 2025: 25 Years of Transforming the Woodworking and Furniture Manufacturing Industry



INDIAWOOD 2025, one of Asia's largest trade fairs for furniture manufacturing and woodworking technology, was held at Greater Noida, Delhi-NCR from 6-9th March 2025.

Federation of Indian Plywood & Panel Industry also participated in the exhibition where we had a stall in Hall No.9 C-108F where we displayed our brochures, magazines

and posters. Many of our office bearers, members and Association President visited our stall and had discussions with our Director General Dr. M.P. Singh.

The event, marked its 25th anniversary, has drawn industry leaders, manufacturers, and technology providers from over 30 nations, highlighting India's growing prominence in the global woodworking sector.





Some of the leading manufacturers of FIPPI with their renowned brands like Action Tesa and Greenlam

participated in Indiawood 2025 in Greater Noida Delhi-NCR. □

Readers are invited to send views, comments and suggestions if any, addressed to Editorial board We also invite your valuable Advertisement and Article to be published in the Journal.

“INDIAN WOOD & ALLIED PANELS” A Quarterly Journal on Plywood and Panel Industry

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Amulya Mica Organized an Enriching Thailand Trip for Kolkata's Top Architects and Interior Designers



Amulya Mica's Kolkata branch organized an exclusive international trip to Thailand for the city's leading architects and interior designers from February 9th to February 13th 2025. The trip was attended by over 13 esteemed architects and interior designers, accompanied by Ms. Ruby Singh, BDM of Amulya Mica Kolkata branch, and Mr. Vivek Gupta, Distributor (Shree Ram Santosh Kumar.)

During their stay, the participants engaged in insightful discussions about the differences between Indian and

foreign architectural designs, explored the latest industry trends, and immersed themselves in Thai culture. The trip was a perfect blend of learning and leisure, featuring games, boating adventures, and indulgence in authentic Thai cuisine.

As they returned, the participants expressed their gratitude to the Amulya Mica family for organising such a wonderful and refreshing experience. Inspired and rejuvenated, they pledged to achieve new milestone in their professional journeys. □

Common Facility Centre for Wooden Furniture in Nagaland



Common Facility Centre (CFC) for Wooden Furniture Cluster at Toluvi here was progressing as per plan and would be completed as per schedule. This was revealed during a joint inspection by Nagaland Industrial Development Corporation (NIDC) Ltd chairman Kvalo Lorin, Industries & Commerce (I&C) commissioner & secretary Shanavas C, I&C director P Tokugha Sema and senior officials from the department, NIDC Ltd, Ministry of Micro, Small and Medium Enterprises (MSME), District Industries Centre (DIC), Dimapur and Engineering Wing of Directorate of Industries & Commerce in the presence of the SPV members on January 18.

According to a statement issued by NIDC Ltd, officials were working to ensure that the project stayed on track, and were confident that they would be able to meet the deadline once the few remaining machineries were delivered, installed and commissioned.

According to NIDC, civil works were almost complete (95%), machineries were being purchased as per the Ministry of MSME's final approval, component-wise expenditure details were checked and found to be correct, 60% of the machineries had been supplied, and order placed for the remaining machineries with some in transit.

The project represented a significant commitment of investment to the tune of Rs 10.16 crore, with the Ministry of MSME contributing 80%, and 10% each by the Government of Nagaland and the SPV-CCDS. It is expected to help local units in the furniture industry by providing access to common resources. □

Kerala Emerging Particle Boards Manufacturing Hub, with Timber Upwards



Kerala is emerging as another Particle Boards manufacturing hub in India. Recently three new manufacturing units have started production, hence the number of manufacturing units has reached close to a dozen, and the capacity addition has reached to 2500 cubic meters per day. Reports say that most of the PB manufacturing lines have approximately 150 to 250 cubic meters per day production capacity of 8x4 ft size. Recently Woodon Decor has set up 6 ft line, they claim to have the biggest production capacity in Kerala.

Kerala based Greenland Particle Boards has started a second manufacturing line in Kannur district. Mr. Salim, Managing Director, Greenland Particle Boards says that

he has opted for 180 cubic meters per day capacity, to cater only to the quality Particle Boards market. Talking to Ply Reporter, Mr Salim says that timber prices have been going up in Kerala, which would become a challenge for the Industry.

Mr Moideen of Positive Particle Board says that the rising timber prices have been worrying us because it has affected our profit margins. There is a 50% jump in timber prices reported in the last one year in Kerala for the particle board industry as per report. Kerala Particle Board sector caters to the entire southern India market, and they produce good quality boards. □

Sawnwood Prices Continue to Increase in India

The annual rate of inflation based on the India Wholesale Price Index (WPI) was 2.37 percent in December 2024. The positive rate of inflation in December 2024 was primarily due to increase in prices of food articles, manufactured food products, other manufacturing, manufacture of textiles and non-food articles, according to eaindustry.nic.in.

The index for the manufacturing sector in December 2024 was the same as that in November. Out of the 22 groups for manufactured products 11 saw an increase in prices, 9

a decrease and 2 groups, including wood panels, saw no change in prices.

Some of the important groups that showed month on month price increases were sawnwood, wood veneers, textiles, fabricated metal products except machinery & equipment), other non-metallic mineral products, motor vehicles, chemicals and chemical products. Some of the groups that saw declining prices were basic metals, food products and furniture. □

Events Calendar 2025

April, 22 - 24 , 2025

DOMOTEX MIDDLE EAST 2025

Dubai

April, 14 – 16 , 2025

DUBAI WOODSHOW 2025

Dubai, United Arab Emirates

May, 08 – 11 , 2025

QINGDAO INTERNATIONAL FURNITURE FAIR 2025

Qingdao, China

May, 20 – 23 , 2025

INTERZUM 2025

Cologne, Germany

May, 27 – 30 , 2025

XYLEXPO 2025

Milan, Italy

May, 26 – 28 , 2025

DOMOTEX ASIA / CHINAFLOOR 2025

Shanghai, China

May, 26 – 30 , 2025

LIGNA 2025

Hannover, Germany

May, 27 – 29 , 2025

INDEX 2025

Dubai, UAE

June, 19 – 21 , 2025

INDO WOOD EXPO 2025

Surabaya, Indonesia

August, 29 – 31, 2025

KOREAN INTERNATIONAL FURNITURE & INTERIOR FAIR 2025

Seoul, South Korea

September, 09 – 12, 2025

CHINA INTERNATIONAL FURNITURE FAIR 2025

Shanghai, China

September, 09 – 13, 2025

SYLVA WOOD 2025

Shanghai, China

September, 10 – 13, 2025

FMC 2025

Shanghai, China

September, 24 – 27, 2025

IFMAC & WOODMAC 2025

Jakarta, Indonesia

October, 01 – 03, 2025

NHLA ANNUAL CONVENTION & EXHIBIT SHOWCASE 2025

Texas, US

October, 02 – 04, 2025

MOKKITEN JAPAN 2025

Nagoya, Japan

November, 13 – 14, 2025

SOUTHEAST ASIA WOODWORKING SUMMIT 2025

Bangkok, Thailand

November, 19 – 22, 2025

VIETNAMWOOD 2025

Ho Chi Minh City, Vietnam



FEDERATION OF INDIAN PLYWOOD
AND PANEL INDUSTRY

FIPPI Calls on All Wood Panel & Ply Industries!

Are you in the wood panel and plywood industry? Looking to grow, collaborate, and drive innovation in the sector? FIPPI (Federation of Indian Plywood & Panel Industry) invites you to join hands with us for a stronger, more united industry!

Why Join FIPPI?

- ✓ **Stronger Together –**
A united voice for policy advocacy
- ✓ **Business Growth –**
Networking and trade opportunities
- ✓ **Industry Insights –**
Stay ahead with market trends & updates
- ✓ **Sustainability & Innovation –**
Work towards a greener future

Who Can Join?

Plywood Manufacturers Veneer & Panel Producers
MDF, Particle Board & Laminates Businesses and
Allied Manufacturers

How to Register?

Write to us at :

fippi@fippi.org

**Let's build a stronger future
for the industry – TOGETHER!**

**FIPPI – Uniting the Wood Panel
& Ply Industry for Progress!**





FEDERATION OF INDIAN PLYWOOD
AND PANEL INDUSTRY

FIPPI PRESIDENTS WHO HAVE STEWARDED THE ORGANISATION

A.K. Kaderkuty
Baliapatam
1974 and 1975

G.L. Kedia
Kolkata
1964 and 1965

P.D. Chitlangia
Kolkata
1966 and 1967

H.K. Vissanji
Mumbai
1968 and 1969

B.K. Khaitan
Kolkata
1970 and 1971

L.N. Dokania
Kolkata
1972 and 1973

A.K. Kaderkuty
Baliapatam
1974 and 1975

B.N. Kapur
Kolkata
1976 and 1977

M.M. Jalan
Kolkata
1978 and 1979

H. Thomson
Sitapur
1980 and 1981

S.L. Goenka
Kolkata
1982 and 1983

K.S. Lauly
Mumbai
1984 and 1985

M.L. Perival
Kolkata
1986 and 1987

H.V. Sarda
Kolkata
1988-89 and 1989-90

M.M. Jalan
Kolkata
1990-91 to 1999-2000

S.P. Goenka
Kolkata
2000 to 2004



Sajjan Bhajanka
Kolkata
2004 to 2024

Rajesh Mittal
Kolkata
2024 onwards





FEDERATION OF INDIAN PLYWOOD
AND PANEL INDUSTRY

Together we are stronger!

Our Primary Members

- ♦ Amul Boards Pvt. Ltd.
- ♦ Archidply Industries Limited
- ♦ Austin Plywood Industries
- ♦ Balaji Action Buildwell
- ♦ Century Plyboards (India) Ltd.
- ♦ Duroply Industries Ltd.
- ♦ Gattani Industries
- ♦ Greenlam Industries Ltd.
- ♦ Greenpanel Industries Limited
- ♦ Greenply Industries Ltd.
- ♦ Hunsur Plywood Works Pvt. Ltd.
- ♦ Jacsons Veneers and Panels Private Limited
- ♦ Jollyboard Limited
- ♦ Maple Panels Pvt. Ltd.
- ♦ Mayur Panel Pvt. Ltd.
- ♦ Merino Industries Ltd.
- ♦ Palghar Plywood Products Ltd.
- ♦ Realply Industries Pvt. Ltd.
- ♦ Riandgo Veneers Pvt. Ltd.
- ♦ Rushil Décor Limited
- ♦ Shri Ram Panels
- ♦ The Western India Plywoods Ltd.

Affiliate Members

- ♦ All India Plywood Manufacturers Association (AIPMA)
- ♦ Association of Indian Panel Board Manufacturers (AIPM)
- ♦ Association of Indian Plywood & Laminate Industries (AIPLI)
- ♦ Association Plywood Manufacturers Welfare Association, U.P.
- ♦ Bangalore Plywood Manufacturers Association
- ♦ Delhi-NCR Plywood Manufacturer Association
- ♦ Haryana Plywood Manufacturers' Association
- ♦ Indian Laminate Manufacturer Association (ILMA)
- ♦ Kandla Timber Association (KTA)
- ♦ Punjab Plywood Manufacturers Association
- ♦ Rajasthan Plywood Manufacturers Association
- ♦ Saw Mill Owners & Plywood Manufacturers Association (SOPMA)
- ♦ South India Plywood Manufacturers Association (SIPMA)
- ♦ UK UP Plywood Manufacture Association
- ♦ Indian Bagasse Board Manufacturers Association

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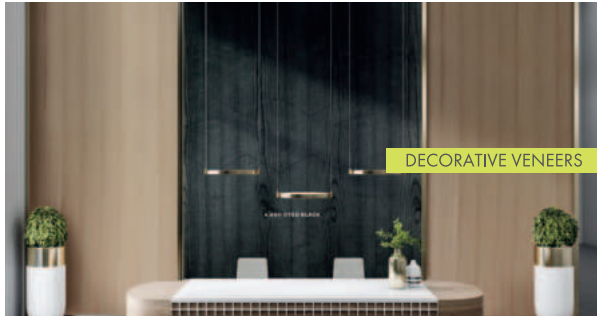


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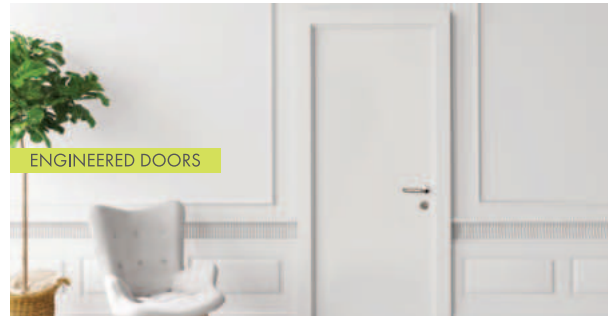
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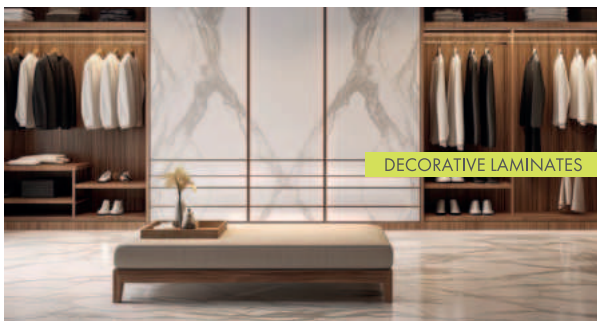
EXTERIOR COMPACT PANELS



DECORATIVE VENEERS



ENGINEERED DOORS



DECORATIVE LAMINATES



MFC PRELAM CHIPBOARD



PLYWOOD



ENGINEERED FLOORS

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, MFC prelam chipboard & MDF. With five state-of-the-art manufacturing facilities located across India, Greenlam is committed to both quality and environmental responsibility.

Its products meet international standards such as CE, UL, NSF, Greenguard, SEFA, Green Label, NEMA and BS EN standards. Supported by a robust global sales and distribution network, Greenlam is dedicated to transforming spaces with seamless expertise.

For any query, please contact at our Toll-Free No.: 1800 833 0004

www.greenlamindustries.com



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