



## **IS 12823: 2015 Prelaminated Particle Boards from Wood and Other Lignocellulosic Material (First Revision)**

Prelaminated particle boards are engineered wood products made by **bonding particles of wood with synthetic resins** under heat and pressure. The board is then **laminated on both surfaces** with synthetic resin-impregnated base papers using heat and pressure. Prelaminated particle boards are widely used in furniture manufacturing due to their affordability and variety of finishes. They are also popular for wall panelling and retail displays, offering easy customisation and maintenance. Additionally, they are used for storage units, shelves, and interior partitions in residential and commercial spaces.

The prelaminated particle boards are expected to offer **durability, resistance to wear, and consistent performance** in a range of applications, from furniture to interior panelling. Key quality parameters include **high abrasion resistance for surfaces, structural strength, and moisture resistance**, which are crucial for ensuring longevity and functionality in diverse settings.

The Indian Standard, IS 12823:2015, addresses these expectations by classifying prelaminated particle boards into two grades: **Grade I** and **Grade II**, in alignment with the grades specified in IS 3087:2006 for flat-pressed, three-layer or multi-layer particle boards of medium density used for general purposes. Each grade has four types, **Type I, Type II, Type III, and Type IV**, based on the abrasion resistance of the laminated surface:

- **Type I:** Suitable for heavy-duty flooring applications.
- **Type II:** Designed for high-use horizontal surfaces, such as cash counters and restaurant tables.
- **Type III:** Ideal for regular horizontal surfaces, including office and domestic furniture tops.
- **Type IV:** Best suited for vertical surfaces like panelling, partitioning, and false ceilings.

The standard specifies comprehensive physical and mechanical tests to ensure the board's quality and reliability. These include tests for **density, moisture content, water absorption, swelling in water, modulus of rupture (MOR), modulus of elasticity (MOE), tensile strength perpendicular to the surface (before and after aging), screw withdrawal strength, abrasion resistance, steam resistance, crack resistance, and resistance to cigarette burns**. Essential values for these properties are outlined in **Table 2** for both grades, ensuring the board's suitability for various uses.

Additionally, the standard prescribes sampling methods and conformity criteria to ensure that prelaminated particle boards consistently meet specified quality benchmarks, reinforcing their dependability and performance across a wide range of applications.