



CERTIFICATION AND STANDARDIZATION OF BAMBOO PRODUCTS

BUREAU OF INDIAN STANDARDS

Pradeep Singh Shekhawat
Scientist 'D'

STANDARDIZATION IN INDIA



- **Organized** standardization activity in India started with establishment of **Indian Standards Institution (ISI)** in 1947 – **Registered Society**.
- **Product Certification** - Indian Standards Institution (Certification Marks Act, 1952)
- Bureau of Indian standards (BIS) came into existence as **statutory body** , through an act of parliament dated 26 November 1986.
- BIS Act 2016 - **National Standards Body** responsible for making standards across all sectors.

MAJOR ACTIVITIES



1) STANDARDIZATION (Standard Formulation)

The process involves formulating and publishing of standards.

2) CERTIFICATION (Product Certification)

The process of granting a license against the standard that provides confidence to stakeholders that the product under consideration conforms to specified requirements given in the standard.

STANDARD



A standard is a published **document**, established by **consensus** (involving stakeholders and keeping in consideration National/International practices) and **approved by a recognized body**, that sets out specifications and procedures to ensure that a material, product, method or service meets its purpose and consistently performs to its intended use.

TYPE OF STANDARDS



- **Specifications** – It gives requirements for products, articles, goods, materials, components, processes, etc and is amenable to certification.
- **Terminology** – It gives various standard terms and their definitions.
- **Method of Tests** – It gives procedure of testing or analysis of products, articles, etc.
- **Code of Practice** – It gives good practices for any activity like design, manufacturing, laying, erecting, constructing, etc.

STANDARDS ON BAMBOO



□ Product Specifications –

- IS 7344 : 1974 - Specification for Bamboo Tent Poles
- IS 8295: Part 1: 1976 - Specification for Bamboo Chicks: Part 1 Fine
- IS 8295: Part 2: 1976 - Specification for Bamboo Chicks: Part 2 coarse
- IS 10145: 1982 - Specification for Bamboo Supports for Camouflaging Equipment
- IS 16073: 2013 - Bamboo-Jute Composite Panel Door Shutter – Specification
- IS 16096: 2013 - Bamboo - Jute Composite Hollow Core Door Shutter – Specification
- IS 13958: 1994 - Bamboo Mat Board for General Purposes – Specification
- IS 14588: 1999 - Bamboo Mat - Veneer Composite for General Purposes – Specification
- IS 15476: 2004 - Bamboo Mat Corrugated Sheets – Specification

STANDARDS ON BAMBOO



□ Product Specifications –

- IS 15972: 2012 - Bamboo - Jute Composite Corrugated and Semi - Corrugated Sheets – Specification
- IS 15688: 2006 - Canned Bamboo Shoot – Specification
- IS 15689: 2006 - Bamboo Shoot in Brine – Specification
- IS 15690: 2006 - Dry Salted Bamboo Shoot – Specification
- IS 15698: 2006 - Dehydrated Bamboo Shoots – Specification
- IS 17571: 2021 – Flattened Bamboo Board – Specification
- IS 17572: 2021- BWP Grade Bamboo Mat-Veneer Composite Board – Specification
- IS 17573: 2021 – BWP Grade Bamboo Mat Board – Specification

STANDARDS ON BAMBOO



❑ Method of Tests –

- IS 6874:2008 - Method of Tests for Bamboo
- IS 8242: 1976 - Method of Tests for Split Bamboos

❑ Code of Practice –

- IS1902: 2006 - Preservation of Bamboo and Cane for Non - Structural Purposes - Code of practice
- IS 9096: 2006 - Preservation of Bamboo for Structural Purposes - Code of practice
- IS 15912: 2018 - Structural Design using Bamboo - Code of practice
- IS 15691: 2006 - Guidelines for Storage and Transportation of Bamboo Shoot

PRODUCT SPECIFICATIONS ON BAMBOO



□ **IS 7344 : 1974 - Specification for Bamboo Tent Poles**

- **Scope – This standard covers requirements of following three types of bamboo poles for use with various tents:**
 - i) **Wall,**
 - ii) **Standing, and**
 - iii) **Ridge**
- **Requirements – Tolerances on dimensions, Permissible defects and Preservative treatment**
- **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



- **IS 8295: Part 1 & Part 2: 1976 - Specification for Bamboo Chicks: Part 1 Fine & Part 2 Coarse**
 - **Scope – These standards covers requirements of fine chicks which are normally used for covering door and window openings and of coarse chicks which are normally used for covering verandah openings.**
 - **Requirements – Materials, Manufacturing, Tolerances on dimensions and Workmanship and finish.**
 - **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



- **IS 10145: 1982 - Specification for Bamboo Supports for Camouflaging Equipment**
 - **Scope – This standard covers requirements of bamboo supports for camouflaging equipment.**
 - **Requirements – Workmanship and finish, Tolerances on dimensions, Permissible defects and Preservative treatment.**
 - **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



- ❑ **IS 16073: 2013 – Bamboo - Jute Composite Panel Door Shutter – Specification**
 - **Scope – This standard covers requirements on size, material, construction, workmanship, finish, tests and sampling of bamboo-jute composite panel door shutters for use in residential and industrial buildings.**
 - **Requirements – Dimensions, Squareness, Flatness, Planeness, Edge loading, Buckling resistance, Slamming, Misuse, Screw-withdrawal, Glue adhesion and Varying humidity tests.**
 - **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



□ IS 16096: 2013 - Bamboo - Jute composite Hollow Core Door Shutter – Specification

- **Scope – This standard covers requirements on size, material, construction, workmanship, finish, tests and sampling of bamboo-jute composite hollow core door shutters for use in residential and industrial buildings.**
- **Requirements – Dimensions, Squareness, Flatness, Planeness, Edge loading, Buckling resistance, Slamming, Misuse, Screw-withdrawal, Glue adhesion and Varying humidity tests.**
- **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



- ❑ **IS 15972: 2012 - Bamboo - Jute composite corrugated and semi - Corrugated Sheets – Specification**
- **Scope – This standard covers requirements of bamboo - jute composite corrugated and semi-corrugated sheet for roofing purpose.**
- **Requirements – Dimensions and tolerances, Density, Load bearing capacity, Water absorption, Resistance to impact, Resistance to boiling water and Resistance to fire.**
- **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



□ IS 17571: 2021 – Flattened Bamboo Board – Specification

- **Scope** - This standard covers the requirements of flattened bamboo board used for weather exposed surface of building components and for decorative purposes.
- **Requirements – Tolerances on dimensions, Density, Moisture content, Internal bond strength, Modulus of elasticity, Modulus of rupture, Tensile strength, Compressive strength, Resistance to ageing & Resistance to fire.**
- **BIS Certification mark**

PRODUCT SPECIFICATIONS ON BAMBOO



- **IS 17573: 2021 – BWP Grade Bamboo Mat Board – Specification**
 - **Scope - This standard covers the requirements of BWP grade bamboo mat board used for weather exposed surfaces of building components of various types of buildings and for decorative purposes.**
 - **Requirements – Tolerances on dimensions, Density, Moisture content, Internal bond strength, Modulus of elasticity, Modulus of rupture, Tensile strength, Compressive strength, Resistance to ageing & Resistance to fire.**
 - **BIS Certification mark**

METHOD OF TESTS ON BAMBOO



□ IS 6874:2008 - Method of Tests for Bamboo

- **Scope** - This standard lays down method of tests for determining the following physical and mechanical properties of round bamboo.

- **References**

- **Terminology**

- **Test methods for different properties**

- i) **Moisture Content**

- ii) **Density**

- iii) **Shrinkage**

- iv) **Static Bending Strength**

- v) **Tensile strength**

- vi) **Compressive strength**

- vii) **Shear strength**

METHOD OF TESTS ON BAMBOO



□ **IS 8242: 1976 - Methods of Tests for Split Bamboos**

- **Scope - This standard lays down method of tests for determining the following physical and mechanical properties of split bamboos.**
- **References**
- **Terminology**
- **Test methods for different properties**
 - i) **Moisture Content**
 - ii) **Density**
 - iii) **Static Bending Strength**
 - iv) **Compressive strength**
 - v) **Shear strength**

CODE OF PRACTICE ON BAMBOO



□ **IS 15912: 2018 - Structural Design using Bamboo - Code of Practice**

- **Scope - This standard covers the general principles involved in the design of structural bamboo in buildings with regard to mechanical resistance and durability of structures.**
- **References**
- **Terminology**
- **Materials – Properties of round bamboos**
- **Design Considerations**
- **Design, Techniques of joints and construction practices**
- **Bamboo as reinforcement in concrete**

CERTIFICATION



❑ BIS Product Certification Scheme

- Primarily, voluntary in nature
- Products covered by more than 1000 Indian Standards under certification
- Products covered by 379 Indian Standards notified for compulsory BIS certification
 - Quality Control Orders and Technical Regulations issued by the Central Government
 - BIS Act and Other statutes

CERTIFICATION – GRANT OF LICENCE



□ Grant of Licence Options

- **Option 1:** Normal Procedure

- Available for all products and for domestic as well as foreign manufacturers.

- **Option 2:** Simplified Procedure

- Available only for domestic manufacturers.



Thank You