

	PLANT PURCHASE SPECIFICATION	NO: BHEL/FSIP/STM/TS:009
	FSIP, JAGDISHPUR	REV NO: 01
	DEPARTMENT: STAMPING PRODUCTION	REV DATE: 10.09.2019

NON-CONIFEROUS TIMBER FOR GENERAL PACKING PURPOSES

1. GENERAL:

This specification governs the quality of non-coniferous timber supplied in the form of planks, battens, beams and sleepers.

2. APPLICATION:

Used for the manufacture of packing Boxes/crates.

3. COMPLIANCE WITH NATIONAL STANDARDS:

Assistance has been derived from the following Indian Standards in preparing this specification.

IS: 1326 - 1992: Specification for non-coniferous sawn timber (Baulks and Scantlings).

IS: 5966 - 1993: Specification for non-coniferous timber in converted form for general purposes.

IS: 6662 - 1993: Specification for timber species suitable for wooden packaging. (Groups I & II).

4. TERMINOLOGY:

For the purpose of this specification, the definitions given in IS: 707 (Glossary of terms applicable to timber and timber products) shall apply except for the beam which is defined as below.

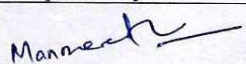
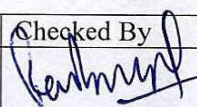
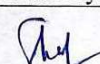
Beam is defined as converted timber whose cross-sectional dimensions exceed 50mm in both directions.

5. SPECIES:

The species of non-coniferous timber shall be as per below:-

Trade Name	Botanical Name
Rubber Wood	Hevea Brasiliensis
Salai	Boswellia serrata
Bahera	Terminalia Bellirica
Jaman	Syzygium cumini
Lendi	Lagerstroemia parviflora
Mango	Hangifera indica
Machilus (Kalamavvu)	Machilus macrantha
Irul	Xylis xylocarpa
Irulbaken	Hopes
Karumarudu	Terminalia tomentosa
Murtenga	Bursera serrata
Nangal	Mesua ferrea
Pillamarudu	Terminalia paniculata
Sal	Shorea robusta
Silver oak	Grevillea robusta
Tada (Dhaman)	Grewia tillifolia

Any other species of wood as per groups I & II of IS 6662 may also be used.

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6. DIMENSIONS AND TOLERANCES:**6.1 Sizes:**

Width, thickness and length of timber shall be clearly stated on the order/drawing/dimension chart.

6.2 Tolerances:**6.2.1 Width:**

Width, mm	Tolerance, mm
50 to 100	{+3, -1}
101 to 250	{+6, -3}

6.2.2 Thickness

Thickness, mm	Tolerance, mm
20 to 50	{+3, -1}
51 to 250	{+6, -3}

6.2.3 Length: As stated on the order/drawing/dimension chart.Tolerance: $\pm 2\%$ or $\pm 50\text{mm}$ whichever is less.

Note: (i) The minus tolerances for width, thickness and length shall not be permitted in more than 10% of the timber supplied.

(ii) Measurements:

- (a) When nominal sizes are ordered, length, width and thickness shall be measured on the basis of accepted sizes. Plus tolerances shall not be added while computing the volume.
- (b) The length shall be measured from centre of one end to centre of other end.
- (c) The width shall be measured at narrowest place.
- (d) The thickness shall be measured at narrowest place.
- (e) The volume shall be computed in cubic meter correct to three decimal places on the basis of accepted size.

(iii) Single sampling plan based on IS: 2500 shall be followed.

7. **MOISTURE CONTENT:** The timber shall have a moisture content up to 30% maximum within a depth of 15mm from the surface excluding a length of 300mm from each end, at the time of inspection during any time in the year. If it is not possible to procure wood with moisture content 30% maximum limits, the procured wood shall be seasoned internally/externally so as to limit the moisture content.
8. **FREEDOM FROM DEFECTS:** Timber shall be free from the following defects: Brashness, splits across the grain, shakes, cup, spring, twist insect attack, any kind of decay (rot), visible infection, open centre heart, centre heart on planks and any other defect. Defects to the extent specified below are permissible. These defects shall be measured in accordance with IS: 3364

End splits:

The longest end split at each end shall be measured and the lengths added together. The total length of these shall not exceed 60mm per metre run of the piece.

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Live knots upto 35mm diameter:

A maximum of 5 knots/metre length are permissible. However the knots shall not be so grouped or located as to affect the strength of the piece. Live knots above 35mm diameter are not permissible.

Dead knots:

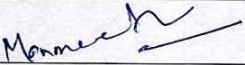
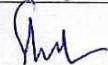
- Below 10 mm diameter: A maximum of 3 knots/metre length are allowed provided that the knots are not so grouped or located as to affect the strength.
- From 10 mm to upto and including 25mm diameter: A maximum of 2 knots allowed to the extent of 1 knot/metre length.
- Above 25mm diameter: Not allowed.

Major axis of the knot should be taken as the diameter of the knot.

Surface cracks: Surface cracks with a depth of 10% subject to a maximum of 10mm are permissible. A continuous crack of any depth all along the length is not permissible.

Sap Wood: Permissible upto a maximum of 12 percent of the cross sectional area.

- INSPECTION:** Inspection shall be done at BHEL against relevant orders and specifications.
- TEST CERTIFICATES:** The supplier shall furnish a certificate with each lot/consignment in support of the type of species of wood used, treatment (Fumigation/Chemical), if any, and moisture content.
- MARKING:** The timber/ Boxes/ crates shall be marked/painted with unique nos. as provided by BHEL for identification.
- REJECTION AND REPLACEMENT:** If the material does not conform to the requirements. Of this specification or found defective during further processing, such material shall be rejected notwithstanding any previous certification of satisfactory testing and/or inspection. The supplier shall under take to replace the rejected consignment at his own cost and the rejected material shall be taken back by the supplier after fulfilling the commercial terms and conditions.

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