



TSD 6208 B

**PLANT STANDARD
BHOPAL****BP 085 14 99**

Rev. No. 03

PAGE 1 OF 4

**SUPERSEDES
BP 085 14 99(Rev.02)****TECHNICAL DELIVERY CONDITIONS FOR
WOODEN PACKAGINGS****1. SCOPE :**

This standard stipulates the technical delivery conditions for packing cases, crates, shooks and cradles manufactured as per drawings, covering requirements of species of timber, constructional features, tolerances, permissible defects, moisture content and marking etc.

2. COMPLIANCE WITH NATIONAL STANDARDS:

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

IS : 5247 (Part 2) - 1982 : Specification For Converted Timber (Coniferous) Part 2 Packing Cases & Crates.
(Reaffirmed: 2000)

IS : 190-1991 : Specification For coniferous Sawn Timber (Baulks & Scantlings).
(Reaffirmed: 2000)

IS : 6662 -1993 : Specification For Timber Species Suitable For Wooden Packaging.
(Reaffirmed: 1998)

3. SPECIES:

Timber Species shall be stated on the order.

Some standard species are :

Trade Name	Botanical Name	Abbreviation
Fir	Abies Pindrow	FIR
Deodar	Cedrus deodara	DEO
Chir	Pinus roxburghii	CHR
Kail	Pinus Wallichiana	KAL
Khasi Pine	Pinus Khasya	KPI

Revision : ● Reviewed and updated.

Issued by :

**STANDARDS AND MATERIALS GROUP
TECHNICAL SERVICES DEPARTMENT**

Rev. No. : 03

Date : 09.03.2005

Date of first issue : 10. 09. 1991



TSD 6209 A

PLANT STANDARD BHOPAL

BP 085 14 99

Rev. No. 03

PAGE 2 OF 4

4. CONSTRUCTIONAL FEATURES:

4.1 Packagings shall be manufactured as per BHEL drawing.

4.2 Dimensions of wood used shall be as below :

4.2.1 Planks

Thickness : 25, 40 and 50 mm.
Width : 140, 150, 175, 200, 225 & 250 mm

NOTE

(i) Planks below 150 mm width are not to be used in plain packing cases, except that, maximum two number of planks with a width of 75 mm and above, can be used for adjustment of dimension of each shook. But in no case these are to be used in the ends.

(ii) In T & G packing Cases the minimum finished width of plank should not be less than 140 mm.

4.2.2 Battens/Scantlings/Beams:

Thickness : 50, 75, 100, 150, 200, 250 & 300 mm

Width : 75, 100, 150, 200, 250, 300 mm

4.3 In case of tongue and groove packing cases/shooks, plaining is to be done as per Drawing supplied alongwith the order.

4.4 For plain packing cases/shooks, maximum gap allowed between planks is 3 mm.

For Tongue and Groove joint packing cases/shooks, the maximum gap shall be :-

- 2 mm for lengths upto 2000 mm.
- 3 mm for lengths above 2000 mm.

4.5 Arrangement of nailing is to be done as per drawing supplied alongwith the order. Nails should be at least 25 mm away from the knot.

4.6 Hardware, excluding wire nails, shall be supplied by BHEL.

5. TOLERANCE:

5.1 For Timber used in manufacture of packagings:

Thickness : + 3 or -1 mm
Width : + or -3 mm

NOTE:

The **negative** tolerance should not be in more than 20X of total quantity of planks, battans & beams.



TSD 6209 A

PLANT STANDARD BHOPAL

BP 085 14 99

Rev. No. 03

PAGE 3 OF 4

5.2 For Packing Cases/Shooks/Crates/Cradles:

Length/Width/Height : Upto 1830 mm : + 5 or - 0mm
From 1831 to 3050 mm: +10 or - 0 mm.
From 3051 to 4570 mm: +15 or - 0 mm.
Above 4571 mm : +20 or - 0 mm.

6. PERMISSIBLE DEFECTS:

6.1 Timber shall be free from cracks, rotten wood and infected wood when examined visually.

6.2 Defects to the extent specified below are permissible.

6.2.1 Live Knots:

6.2.1.1 Knots on the surface:

a) Upto & Including 25 mm 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.

b) Over 25 mm and upto and incld. 100 mm diameter :

A maximum of 2 Knots/metre length are permissible.

6.2.1.2 Knots On The Edges:

a) Upto and incld. 10 mm diamtere and for full thickness:

A maximum of 2 Knots/metre length are permissible.

b) Over 10 mm & upto & incld. 50 mm diameter & for full thickness and upto 100 mm diameter & 60X Thickness :

A maximum of 2 knots/metre length are permissible.

6.2.2 Dead Knots:

a) 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.

b) From 10 mm to upto and incld. 25 mm diameter:

A maximum of 2 knots are allowed to the extent of 1 knot/metre length.

c) Above 25 mm diameter:

Not allowed.

NOTE:

For the purpose of this standard the definitions given in IS : 707 (Glossary of Terms Applicable to Timber and Timber Products) shall apply.



TSD 6209 A

PLANT STANDARD BHOPAL

BP 085 14 99

Rev. No. 03

PAGE 4 OF 4

7. MEASUREMENTS:

- 7.1 When nominal sizes are orderd, length, width and thickness, shall be measured on the basis of accepted sizes. Plus tolerances shall not be added while computing the volume.
- 7.2 The measurement of length, width, thickness and computation of the volume shall be made as follows. A steel tape scale with a least count of 1.0 mm shall be used, for the measurement.
- The length shall be measured in metres in midline of a piece. The fractions of a metre shall be rounded off to the nearest lower 10 mm.
 - The width shall be measured at the narrowest place in millimetres and shall be rounded off to the nearest lower one millimetre.
 - The Thickness shall be meaured at the narrowest place in millimetres and shall be rounded off to the nearest lower one mm.
 - The volume shall be computed in cubic metres correct to three places of decimal on the basis of accepted sizes.

8. MOISTURE CONTENT:

The packing wood shall have moisture content as stated below within a depth of 15 mm from the surface excluding a length of 300 mm from each end, at the time of inspection. The moisture content will be determined in accordance with Appendix -A of IS : 287,1993. (Reaff.1998)

Nov. to April : 30% max.
May to Oct. : 40% max.
(Rainy Season)

9. MARKING :

- 9.1 Supplier should do colour coding allotted to them for identification on each shook/case.
- 9.2 The individual packing case/shook should bear at the edge (thickness), the TFC No. as per the scheme given below in visible paint, in letter size of 20 mm to 35mm.

For example Drg.No.TFC - 120.

It should be written.

For Top - TFC 120 T.
For Base - TFC 120 B.
For Side - TFC 120 S

- 9.3 Wherever the cases are supplied in assembled condition the TFC should be painted on right hand corner inside the box.