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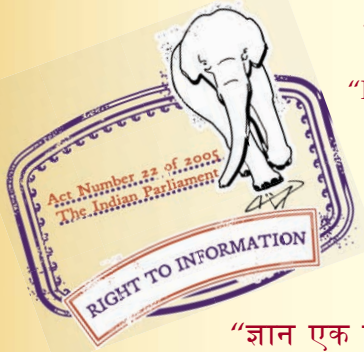
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IS 10-5 (1976): Plywood Tea-Chests, Part 5: Assembly and Packing [CED 9: Timber and Timber Stores]



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“Knowledge is such a treasure which cannot be stolen”



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IS : 10 (Part V)-1976

*Indian Standard*  
SPECIFICATION FOR  
PLYWOOD TEA-CHESTS  
PART V ASSEMBLY AND PACKING  
(Fourth Revision)

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BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

*Indian Standard*  
**SPECIFICATION FOR  
 PLYWOOD TEA-CHESTS**

**PART V ASSEMBLY AND PACKING**

*(Fourth Revision)*

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*Indian Standard*  
SPECIFICATION FOR  
PLYWOOD TEA-CHESTS

PART V ASSEMBLY AND PACKING

*(Fourth Revision)*

0. FOREWORD

**0.1** This Indian Standard (Part V) (Fourth Revision) was adopted by the Indian Standards Institution on 22 June 1976, after the draft finalized by the Wood Products Sectional Committee had been approved by the Civil Engineering Division Council.

**0.2** This standard covered provisions relating to different components of plywood tea-chest, namely, battens, plywood panels, metal fittings, etc. Besides it also covered provisions in respect of sizes and testing of assembled tea-chest. Since some of these aspects are the concern of different trades, such as plywood, battens, metal fittings and to assist the quality enforcement procedures, it has been felt necessary that this standard (IS:10) be issued in parts. Accordingly, this standard is being published in the following parts:

- Part I General
- Part II Plywood
- Part III Battens
- Part IV Metal fittings
- Part V Assembly and packing

**0.2.1** During the course of working to the standard a need has been felt for the preparation of a separate standard giving guidance regarding the assembly and packing of plywood tea-chest. These provisions had not been so far covered in IS:10-1970. These requirements are now covered in this part.

**0.3** In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated,

expressing the result of a test, shall be rounded off in accordance with IS:2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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## **1. SCOPE**

**1.1** This standard (Part V) covers the requirements for assembly and packing of plywood tea-chests.

## **2. TERMINOLOGY**

**2.1** For the purpose of this standard, the definitions given in IS:707-1976† shall apply.

## **3. DESIGN OF TEA-CHEST**

**3.1** The tea-chest shall be assembled as indicated in Fig. 1 from six panels of plywood forming a shook and 12 battens together with other accessories specified in IS:10 (Part I)-1976‡.

## **4. SIZES**

**4.1** The outside dimensions of tea-chests shall conform to the provisions of IS:10 (Part I)-1976‡.

## **5. COMPONENTS**

**5.1 Plywood**—The plywood shall conform to the requirements of IS:10 (Part II)-1976§.

**5.2 Battens**—The battens shall conform to the requirements of IS:10 (Part III)-1974||.

**5.3 Metal Fittings**—The metal fittings shall conform to the requirements laid down in IS:10 (Part IV)-1976¶.

**5.4 Nails**—The nails shall conform to the requirements laid down in IS:10 (Part I)-1976‡.

**5.5 Linings and Tissue Paper**—The linings and tissue paper shall conform to the requirements laid down in Table 1 of IS:10 (Part I)-1976‡.

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\*Rules for rounding off numerical values (*revised*).

†Glossary of terms applicable to timber technology and utilization (*second revision*).

‡Specification for plywood tea-chests: Part I General (*fourth revision*).

§Specification for plywood tea-chests: Part II Plywood (*fourth revision*).

||Specification for plywood tea-chests: Part III Battens (*fourth revision*).

¶Specification for plywood tea-chests: Part IV Fittings (*fourth revision*).



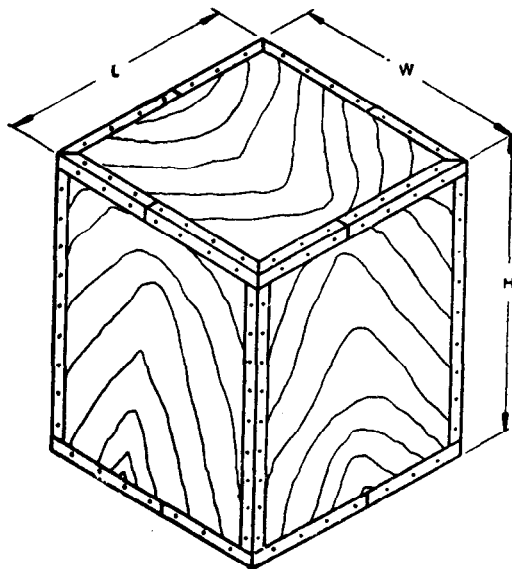


FIG. 1 COMPLETE TEA-CHEST

## 6. ASSEMBLY

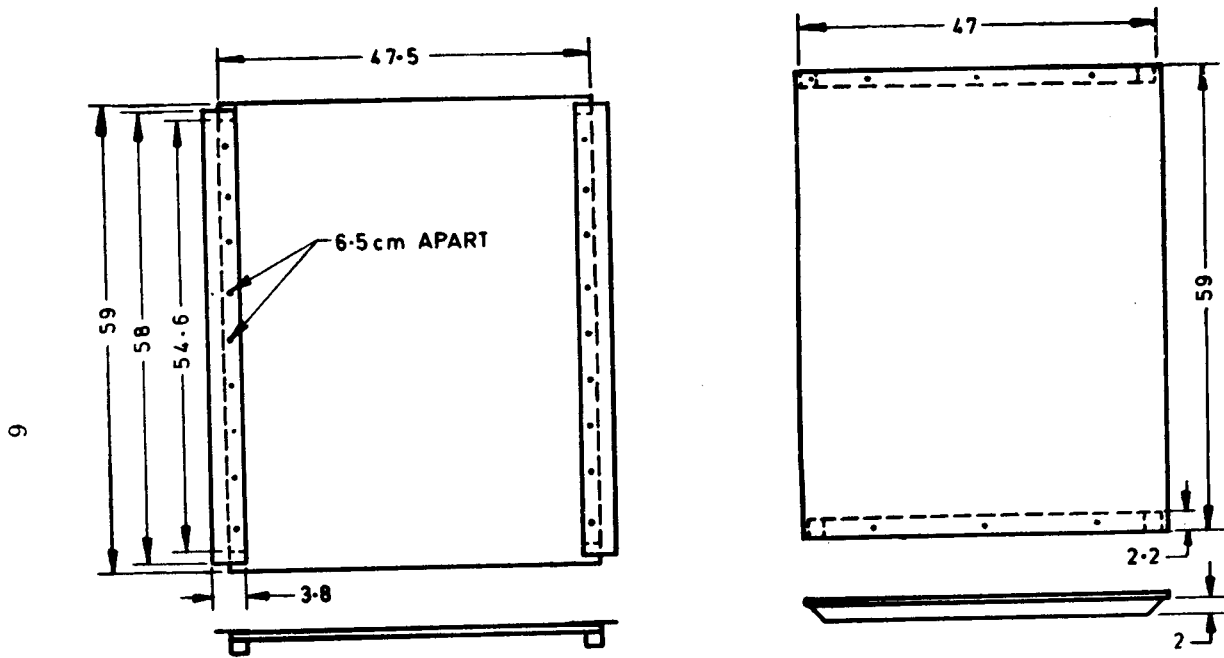
**6.1** A tea-chest shall be assembled by following the operations given under **6.1.1** to **6.1.7**. For ease in reference the assembly of  $48 \times 48 \times 60$  cm tea-chest is explained under **6.1.1** to **6.1.7**.

**6.1.1 Operation No. 1** — Collect all the required material as listed in Table 1 of IS: 10 (Part I)-1976\* and keep them conveniently near the place of assembly. Battens should be covered with tissue paper and panels with linings internally before assembling the chest. Tissue paper and linings are not necessary for chests assembled for test.

**6.1.2 Operation No. 2** — Assemble the four sides of the chest in clockwise direction with metal fittings externally and corner battens internally in flush with the vertical corners. The battens are so fixed that a distance of 2.2 cm is left from each end, to provide clearance for the mitred top and bottom battens. Each corner batten is fixed with nine nails on each face, such that the end nails are approximately 4 cm from the end of corners, and the rest of the nails are each 6.5 cm apart. Thus 72 nails are consumed in this process (see Fig. 2A).

**6.1.3 Operation No. 3** — Fix the appropriate battens in the bottom and top ends first by three nails on each batten internally. Thus 24 more nails are consumed in this operation (see Fig. 2B).

\*Specification for plywood tea-chests: Part I General (fourth revision).

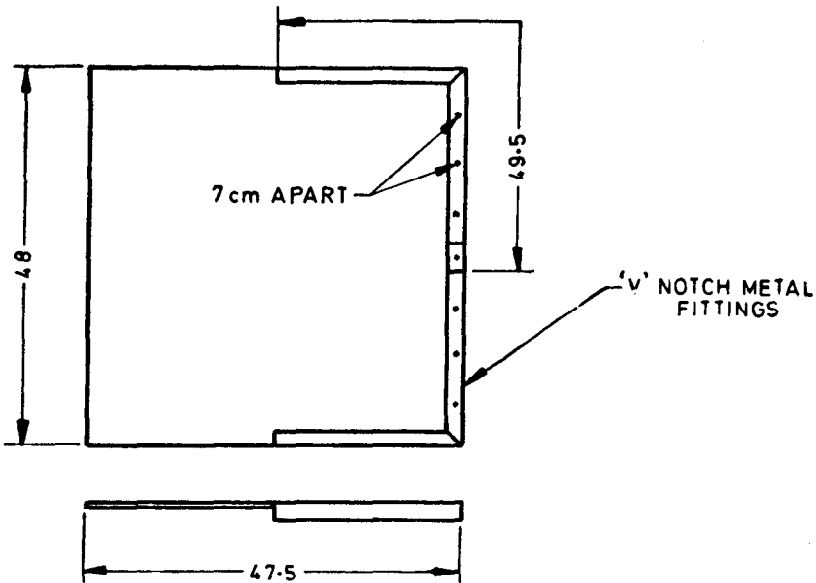


All dimensions in centimetres.

2A Operation 2 Fixing of Corner Battens and Side Panels

2B Operation 3 Fixing of Bottom and Top Battens

FIG. 2 ASSEMBLY OF A TEA-CHEST OF SIZE 48 × 48 × 60 cm — *Contd*



All dimensions in centimetres.

2C Operation 4 Fixing of Bottom Panel and 'V' Notched Metal Fittings

FIG. 2 ASSEMBLY OF A TEA-CHEST OF SIZE 48 × 48 × 60 cm

**6.1.4 Operation No. 4**—Place the bottom end panel on the bottom battens and fix with one nail in the centre of each batten. Then place the bottom metal corners such that 'V' notch in each coincides with a corner and fix the metal fittings in clockwise direction with 7 nails on each face along each edge such that the end nails are approximately 3 cm from the corner and the rest of the nails are each 7 cm apart. Thus 60 more nails are consumed in this operation (see Fig. 2C).

**6.1.5 Operation No. 5**—Reverse the chest and repeat this process for the top end of the chest but do not fix the top panel permanently with nails. This panel will now be in a position to slide in one direction so that the tea-chest can be easily filled when required at the time of packing tea.

Now fix one nail on each of the two sides of eight corners and thus 16 nails are consumed making total 88 nails along metal corners.

## IS:10 (Part V) - 1976

**6.1.6 Operation No. 6** — At the time of packing tea, the tea-chests shall be fully packed with tea. Complete the unfinished nailing work similar to the bottom so that tea-chest is now completely closed as shown in Fig. 1.

**6.1.7 Distribution of nails in a 48 × 48 × 60 cm tea-chest:**

- |  |   |         |
|--|---|---------|
| a) Mitred face battens (45°) with panel 4 × 6                                | = | 24 No.  |
| b) Straight battens with (90°) metal fittings 9 × 8                          | = | 72 No.  |
| c) 48 × 48 top and bottom panels with battens 4 × 2                          | = | 8 No.   |
| d) 'V' notch metal fittings to cover 48 × 48 top<br>and bottom panels 56 × 2 | = | 112 No. |
| e) Fixing the 'V' notch fittings with the side<br>panels 8 × 2               | = | 16 No.  |

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232 No.

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## 7. PACKING

**7.1** A belt conveyor shall be used for filling the chests with tea. Tea which is ready for packing shall be fed manually at one end of the conveyor and at the other end tea is allowed to fall into the chests which are kept on a platform. Platform shall be mechanically vibrated at about a speed of 500 rev/min during the operation of filling. Normally two chests are filled at a time. Chests shall be fully packed with tea without leaving any space at the top.

**7.2** Larger the chest, lighter shall be the tea to be packed in. Dust tea which has higher range of density shall therefore be packed in a smaller chest and leaf type and other lighter grades shall be packed in larger sizes. The exact amount of tea to be packed in different sizes of tea-chests shall therefore depend on various grades of tea manufactured and their density. The maximum weight of tea to be packed in different sizes of tea chests shall however be determined based on the ratio of weight in grams to volume in cubic centimetres not exceeding 0.36.

**7.3** Packed chests shall then be taken to a weighing balance through a roller conveyor.

## 8. MASS

**8.1** Maximum mass of empty chests shall be in accordance with the provisions of IS:10 (Part I)-1976\*.

**8.2** Both gross mass of the chest and the net mass of the tea packed in shall be marked on the chest. Top panel shall then be fixed similar to the bottom as specified in 5.5.

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\*Specification for plywood tea-chests: Part I General (fourth revision).

( Continued from page 2 )

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