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CEYLON STANDARD 157 : 1972

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SPECIFICATION FOR DRAWING BOARDS

(METRIC UNITS)

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BUREAU OF CEYLON STANDARDS

SPECIFICATION FOR DRAWING BOARDS (METRIC UNITS)

C.S. 157 : 1971

Gr.3

BUREAU OF CEYLON STANDARDS
53, DHARMAPALA MAWATHA,
COLOMBO 3.

CEYLON STANDARD SPECIFICATION FOR DRAWING BOARDS

(Metric Units)

FOREWORD

This Ceylon Standard was prepared by the Drafting Committee on Drawing Boards and Tee Squares under the authority of the Metric Divisional Committee of the Bureau of Ceylon Standards, and was approved for adoption and publication by the Council of the Bureau on 4th August 1972.

Ceylon has decided to change over to the metric system of weights and measures. It is expected that the International 'A' series of paper will come into use in the Engineering and Architectural fields with this changeover. This standard lays down the sizes and other specifications of Drawing Boards for use with the 'A' series of drawing sheets.

It has been found that in local conditions, drawing boards made out of well-seasoned timber do not need any adjustments of the working surface even after long usage. Therefore the specifications of the Drawing Boards given in this Standard do not provide for adjustments of the working surface. This has been done in order to arrive at a cheaper board which still meets with the functional requirements of a drawing board.

In preparing this standard, assistance derived from the following Indian, British and German Standards is acknowledged.

IS : 1444 — 1963 : Specification for Engineers' Pattern Drawing Boards (revised)

BS : 1265 — 1958 : Engineers' Pattern Drawing Boards,

BS : 1267 — 1958 : Students' Clamped Drawing Boards,

DIN : 3100 — 1962 : Drawing Boards.

All dimensions given in this standard are in metric (SI) units. Equivalent inch values are given in brackets. The equivalent values have been calculated in accordance with C.S. 116—Ceylon Standard for Principles of Conversion.

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 or measurement shall be rounded off in

accordance with C.S. 102—Ceylon Standard for the Presentation of Numerical Values. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the sizes, materials and constructional details of drawing boards, intended to be used by engineers and students.

2. DIMENSIONS OF THE BOARD

2.1 The overall dimensions of the drawing boards shall be as given in Table 1.

TABLE 1

DIMENSIONS OF DRAWING BOARDS

Width (W) × Length (L) mm × mm (in × in)	Tolerance on length or width mm	Thickness (H) mm (in)	Tolerance on Thickness mm	Tolerance on Straightness of working edge mm (in)	Recommended for use with sheet size (designation) mm × mm
1000 × 1500 (39.4 × 59.1) 920 × 1270 (36.2 × 50.0)	± 5	22 (0.9)	± 3	0.3 (0.01)	841 × 1189 (A0)
650 × 920 (25.6 × 36.2)	± 5	22 (0.9)	± 3	0.2 (0.008)	594 × 841 (A1)
470 × 650 (18.5 × 25.6)	± 3	22 (0.9)	± 3	0.1 (0.004)	420 × 594 (A2)
350 × 500 (13.8 × 19.7)	± 3	22 (0.9)	± 3	0.1 (0.004)	297 × 420 (A3)

3. GENERAL REQUIREMENTS

3.1 The timber used shall be well seasoned and mature, free from knots, splits, checks, sap and other defects which may affect the serviceability of the drawing boards. The timber used shall have a moisture content of 12 to 15% determined in the manner described in Appendix A.

4. WORKING SURFACE

4.1 The board shall have a smooth and permanently true working of slotted surface free from twist or bow. The species of timber used for the working surface shall be Lunumidella (*Melia dubia* Cav).

4.2 Two battens, shall be fitted to the back of the board by means of slotted countersunk head wood screws, or slotted round head wood screws. If slotted round head screws are used, round washers shall also be used.

The battens shall be of the following species of timber :—

Teak (*Tectona grandis* Linn. f.)
Satin (*Chloroxylon swietenia* DC)
Halmilla (*Berrya cordifolia* (Willd.) Burret)
Palu (*Manilkara hexandra* Dubard)

The length of each batten (A) shall be such that it leaves a margin of 10 to 12 mm (0.4 to 0.5 in) on both edges of the board and shall be fitted at a distance of 95 to 105 mm (3.7 to 4.1 in) from the ends of the boards. The width of each batten (B) shall be as follows :—

For boards of width 1000 or 920 mm: 100 ± 5 mm (3.7 to 4.1 in)
For boards of width less than 920 mm: 75 ± 3 mm (2.8 to 3.1 in)
and the thickness shall be 25 to 27 mm (1.0 to 1.1 in)

[See Figs. 1 (*a*) and 1 (*b*)]

5. WORKING EDGE

5.1 A true working edge of either Type 1 or Type 2 shall be provided.

Type 1: A suitable strip shall be inserted and securely glued to a broadside edge of the board. It shall be of Ebony (*Disopyros ebenum* Koenig), Satin (*Chloroxylon swietenia* DC), Palu (*Manilkara hexandra* Dubard), Mee (*Madhuca longifolia* Macbr), Na (*Mesua ferrea* L.) or of a non-corrosive metal.

The dimensions and position of the edge strip shall be as given in Fig. 2a.

Type 2: A wooden beading shall be fixed to a broadside edge of the board by means of a tongue and groove joint. It shall be constructed from the following species of timber:

Ebony (*Disopyros ebenum* Koenig), Satin (*Chloroxylon swietenia* DC) or Palu (*Manilkara hexandra* Dubard), Mee (*Madhuca longifolia* Macbr.) or Na (*Mesua ferrea* L).

It shall be sloped downwards to a gradient of 1:7 and shall have the dimensions given in Fig. 2b.

6. BEADING

6.1 A wooden beading shall be tongued and grooved to the edge of the board opposite to the working edge. It shall be of Ebony (*Disopyros ebenum* Koenig), Satin (*Chloroxylon swietenia* DC), Palu (*Manilkara hexandra* Dubard), Mee (*Madhuca longifolia* Macbr) or Na (*Mesua ferrea* L) and shall have the following dimensions:

Length of beading — width of the board,
Width of beading (D) — 15 to 20 mm (0.6 to 0.8 in)
Thickness of beading — thickness of board.

[See Figs. 1(a) and 1(b)].

7. SCREWS AND WASHERS

7.1 The wood screws used for fixing the battens shall be of brass and shall conform to C.S. 6 : 1967—Ceylon Standard Specification for Wood Screws.

7.2 The washers if used shall be of brass or galvanized iron and shall be 1.7 to 2.0 mm (0.07 to 0.08 in) in thickness.

8. OTHER REQUIREMENTS

8.1 Working Surface—The working surface of the board shall be manufactured from planks of approximately equal width not larger than 150 mm (5.9 in). The grain of the wood shall be along the length of the board. These planks shall be properly and permanently joined together by means of tongue and groove joints and securely glued. The edges shall be trimmed square.

8.2 Beadings—The edges of the beading shall be trimmed square and the ends rounded to a radius of approximately 10 mm (0.4 in).

8.3 Working Edge—The upper surface of the working edge of Type 2 shall be in the same plane as that of the working surface; the ends shall be rounded to a radius of approximately 10 mm (0.4 in).

8.4 Battens—The battens shall have chamfered or rounded edges. The screws shall be fixed in a zig-zag way. If round head wood screws are used, the heads of screws and washers shall be housed in recesses below the surface of the battens. (See Figs. 1a and 1b). The end screw holes shall be 25 mm (1.0 in) clear from each end of battens

and the others at equal intervals, clear of the grooves. Every intermediate plank shall be provided with one screw while the end plank shall be provided with two screws. While fixing the screws, joints and grooves shall be avoided.

8.5 Grooves—In order to provide for the movement of timber longitudinal grooves of 5 mm (0.2 in) depth and 3 mm (0.1 in) width shall be cut at intervals of not more than 75 mm (3.0 in) at the back of the board (see Fig. 1).

8.6 The difference in the lengths of any two opposite edges of the board shall be not more than 6 mm and the divergence from perpendicularity of adjacent edges shall not exceed $\pm 0^\circ$ 15′.

9. FINISH

9.1 The drawing boards shall be smoothly finished throughout and wax sealed against the entry of moisture.

10. PACKAGING

10.1 Unless otherwise specified, each drawing board shall be properly protected to prevent damage, in transit and in store, to the board and working edge.

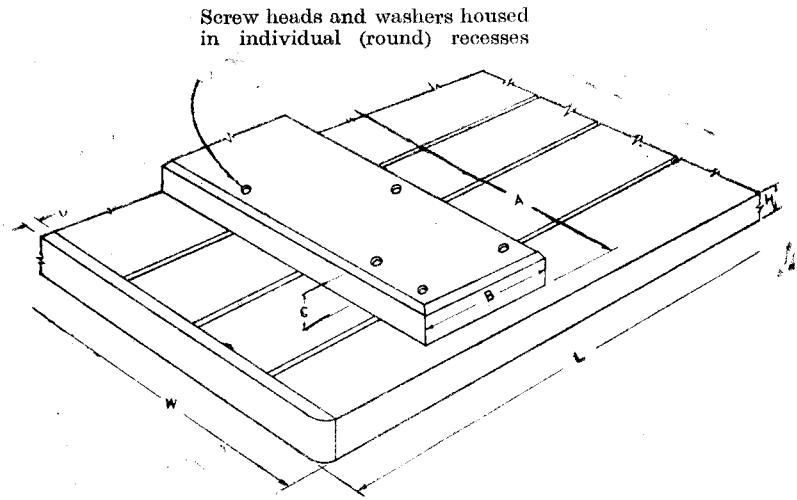


Fig. 1 (a)

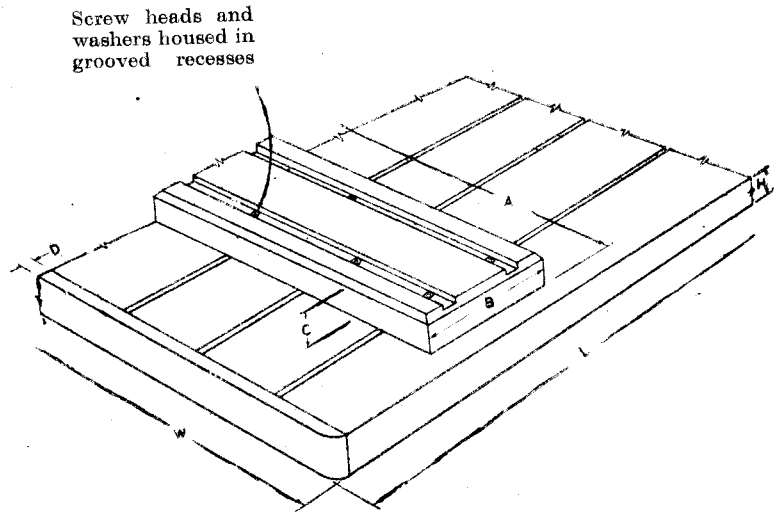
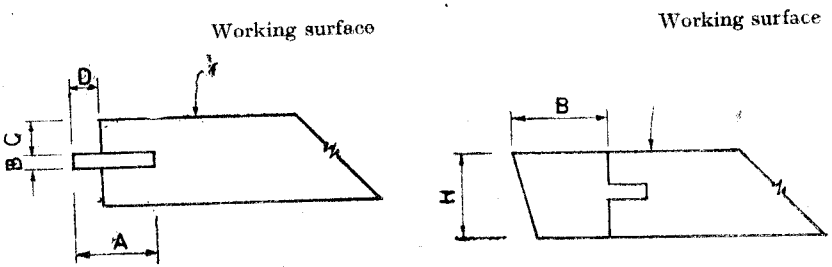


Fig. 1 (b)



A: 12.5 to 14.5mm (0.49 to 0.57 in)
B: 5.0 to 6.0mm (0.20 to 0.24 in)
C: 3.0 to 4.0mm (0.12 to 0.16 in)
D: 4.0 to 5.0mm (0.16 to 0.20 in)

Fig. 2 (a)—Working Edge, Type 1

B: 15 to 20 mm (0.6 to 0.8 in)
H: thickness of board

Fig. 2 (b)—Working Edge, Type 2.

APPENDIX A

METHOD FOR THE DETERMINATION OF MOISTURE CONTENT

(i) Selection of samples

For the purpose of carrying out the test for moisture content the purchaser, or his representative, may select, during the course of manufacture, suitable samples of the timber used in the construction.

If the test for moisture content is to be carried out immediately after the cutting of the samples, these samples may take the form of the test pieces specified in (ii) Method of test, but if the first weighing cannot be carried out immediately after the cutting of the sample, the samples shall consist of pieces not less than 480mm (18.9 in) in length cut from the stock. The final test pieces shall be cut from the middle of the above pieces when the test is made.

(ii) Method of test

The test pieces of the timber shall be taken at a point not less than 230 mm (9.1 in) from the end of the sample and shall be cut to include the full cross section of the samples and shall be 20 mm (0.8 in) long in the direction of the grain. They shall be weighed (M_1) immediately after cutting and then dried in an oven at a temperature of 100° to 105°C until the mass is constant (M_0) and again weighed immediately after removal from the drying oven; the percentage of moisture content (X) shall then be determined from the formula:

$$X = \frac{M_1 - M_0}{M_0} \times 100$$

where M_1 = initial mass, M_0 = dry mass, X = moisture content.

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