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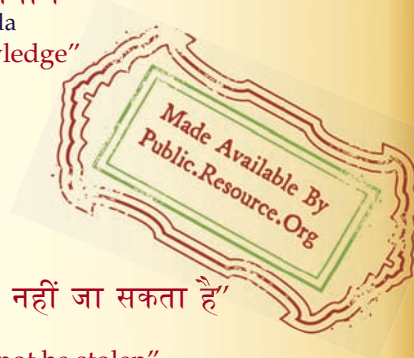
IS 4183 (1967): Specification for Metal hand rammers [MED 18: Construction Plant and Machinery]



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**SPECIFICATION FOR
METAL HAND RAMMERS**

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR METAL HAND RAMMERS

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SPECIFICATION FOR METAL HAND RAMMERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 24 July 1967, after the draft finalized by the Construction Plant and Machinery Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Metal hand rammer is a basic tool which finds extensive use on all civil engineering works for ramming earth and sand, compaction of lime concrete and lean cement concrete and for other allied purposes. This standard has been prepared with a view to providing guidance in obtaining hand rammers of suitable size and shape and capable of giving satisfactory service.

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 or analysis, 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.

1. SCOPE

1.1 This standard covers the requirements regarding shape, size, materials and testing of metal hand rammers.

2. TYPE

2.1 The type of the hand rammer shall be indicated by the plan shape of the striking face of the rammer. Rammer with square striking face shall be designated as square rammer and the rammer with circular striking face shall be designated as round rammer.

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

3. SIZE

3.1 The size of the rammer shall be indicated by its finished weight (excluding the weight of the handle) in kg.

3.1.1 Nominal sizes shall be as below:

<i>Shape</i>	<i>Size kg</i>	<i>Tolerance kg</i>
Square or circular	5	± 0.25
Square or circular	7.5	± 0.25
Square or circular	10	± 0.25

3.1.2 Sizes other than those specified in **3.1.1** may be supplied if agreed to between the purchaser and the supplier.

4. MATERIALS

4.1 The rammer head shall be manufactured from cast iron conforming to grade 15 of IS: 210-1962* or any other equally suitable material.

4.2 Handle — The handle shall be of well seasoned and straight grained bamboo or any suitable timber free from decay, shakes, knots, warps or other defects and having a moisture content, determined in accordance with Appendix B of IS: 620-1962†, not less than 10 percent nor more than 15 percent.

5. SHAPE AND DIMENSIONS

5.1 The shape and dimensions of the hand rammer shall generally comply with Fig. 1. Any other suitable shape may be provided by mutual agreement between the purchaser and the supplier, provided the governing dimensions as specified in **5.1.1** to **5.1.2** and Fig. 1 are complied within a tolerance of ± 5 percent.

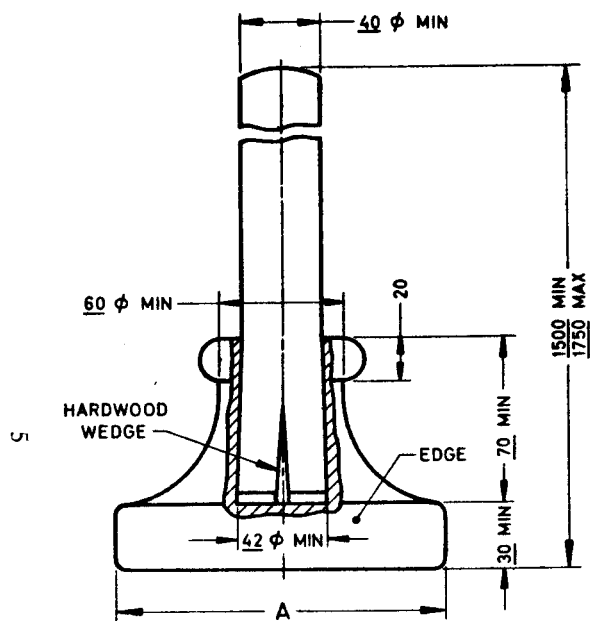
5.1.1 Base — Unless otherwise agreed to between the purchaser and the supplier, the base dimensions for square and round rammers of different sizes shall be as given in Table 1.

5.1.2 The handle shall be 40 mm in diameter with a tolerance of ± 2 mm.

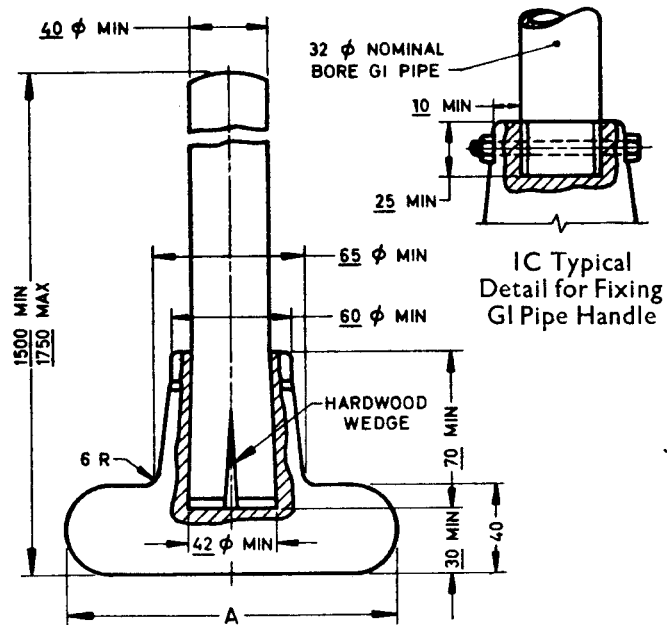
5.2 Height — The height of the assembled rammer, from the striking face to the top of the handle, shall be not less than 1.5 m nor more than 1.75 m (see Fig. 1).

*Specification for grey iron castings (*revised*).

†Specification for general requirements for wooden tool handles (*revised*).



IA Square or Round
Hand Rammer



IB Round Hand
Rammer

IC Typical
Detail for Fixing
GI Pipe Handle

NOTE 1 — All dimensions in millimetres.

NOTE 2 — Underlined dimensions are essential dimensions.

NOTE 3 — Dimension 'A' as per requirements of 5.1.1.

FIG. 1 TYPICAL SKETCH OF METAL HAND RAMMER

TABLE 1 DIMENSIONS OF RAMMER

(Clause 5.1.1)

Sl No.	Size kg	BASE DIMENSION, mm	
		Square Rammer	Round Rammer
1	5	100 × 100; 125 × 125; 150 × 150	100 φ; 125 φ; 150 φ
2	7.5	100 × 100; 125 × 125; 150 × 150	100 φ; 125 φ; 150 φ
3	10	100 × 100; 125 × 125; 150 × 150	100 φ; 125 φ; 150 φ

6. MANUFACTURE

6.1 The rammer shall be cast in one piece free from cavities, flaws or blow-holes. The striking face shall be flat and all flashings removed. The socket for the handle shall be concentric with the periphery and of suitable taper (see Fig. 1) to match with the diameter of handle. The handle shall be smooth and positively secured in the rammer head by a hard-wood wedge so that there is no relative movement between the handle and the rammer head under working conditions.

6.1.1 By mutual agreement between the purchaser and the supplier, rammer head with arrangement to fix galvanized mild steel pipe handle may be provided. Such an arrangement may consist of a socket of uniform bore to positively secure 25 to 32 mm nominal bore pipe with the help of screw threads or a horizontal pin passing through the pipe or both and the rammer head (see Fig. 1C).

6.2 Finish — All surfaces shall be self colour finish.

7. MARKING

7.1 The weight of the rammer shall be legibly and indelibly marked on the flat surface around and adjacent to the handle socket. The rammer may also be marked with the manufacturer's name, initials or trade-mark.

7.1.1 The rammer may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. INSPECTION AND TESTING

8.1 Samples not exceeding 2 percent of any supply and not less than 3 rammers may be selected by the purchaser or his authorized representative and tested in his presence in the manner described in **8.1.1** and **8.1.2**.

8.1.1 The rammer fitted with the handle shall be dropped twenty times over a cast iron or mild steel block from a height (vertical distance from the top of the test block to the striking face of the rammer) of 300 mm. The rammer and the handle shall not show any damage or deformation at the end of this test and the handle shall not work loose in the socket.

8.1.2 In addition to the test prescribed in **8.1.1**, the flat face of the rammer head shall be tested for soundness by light blows over its surface with the flat face of a 0.75 kg hammer. The rammer shall withstand this test without signs of flaws or other defects.

8.1.3 Retest — Should any sample fail to pass the test given in **8.1.1** and **8.1.2**, the bulk represented by it shall be liable for rejection but at the option of the supplier two further samples may be subjected to the tests. If either of these retest samples fails, the bulk represented shall be rejected.

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