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IS 4915 (1968): Welders' Chipping Hammer [PGD 6: Earth, Metal And Wood Working Hand Tools]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 4915 - 1968
(Reaffirmed 1978)
(Reaffirmed 2004)

Indian Standard
**SPECIFICATION FOR
WELDERS' CHIPPING HAMMER**

Second Reprint NOVEMBER 1983
(Incorporating Amendment No. 1)

UDC 621.972.38:621.791.03



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INDIAN STANDARDS INSTITUTION
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NEW DELHI 110002

IS : 4915 - 1968
(Reaffirmed 1978)

Indian Standard

SPECIFICATION FOR WELDERS' CHIPPING HAMMER

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Indian Standard

SPECIFICATION FOR WELDERS' CHIPPING HAMMER

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 16 December 1968, after the draft finalized by the Hand Tools Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 This standard lays down the requirements for welders' hand hammers used for chipping of welds and welding slag commonly used in the country. Only basic overall dimensions have been specified without imposing any limitations on the details of design.

0.3 While preparing this standard, assistance has been derived from GGG-H-35a "Hammer, hand; welders' chipping" issued by USA Federal Supply Service.

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.

1. SCOPE

1.1 This standard covers the requirements for welders' chipping hammer used by welders for chipping welds and welding slag.

2. MATERIAL

2.1 The hammers shall be manufactured from any suitable tool steel, such as T55 of Schedule VI of IS : 1570-1961† with a maximum sulphur and phosphorus content of 0.05 percent each.

3. HARDNESS

3.1 The working edges of hammers shall be hardened and tempered. The hardness of the working edge shall be within the range of 450 to 550 HV (see IS : 1501 - 1959‡). In no case shall the maximum hardness extend to any point beyond 13 mm from the working edges.

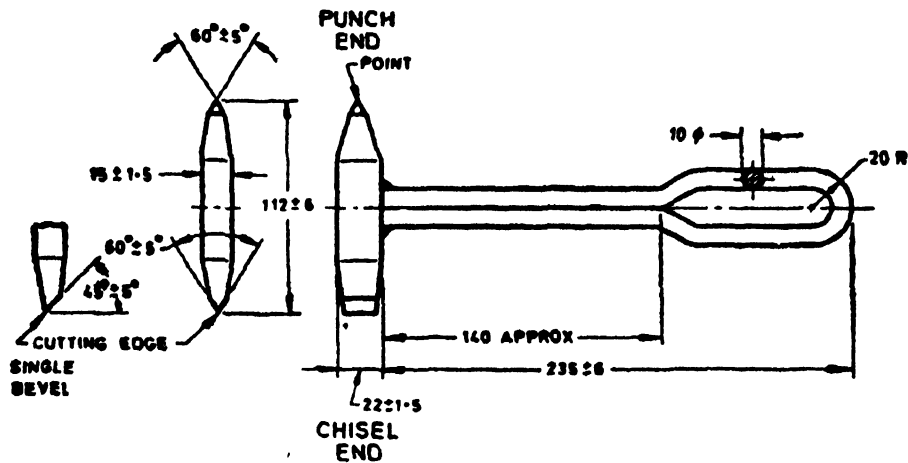
*Rules for rounding off numerical values (*revised*).

†Schedules for wrought steels for general engineering purposes.

‡Method for Vickers hardness test for steel.

4. DIMENSIONS

4.1 The main dimensions of the welders' chipping hammer shall be as given in Fig. 1.



All dimensions in millimetres.

FIG. 1 DIMENSIONS FOR WELDERS' CHIPPING HAMMER

5. WEIGHT

5.1 The weight of the hammer shall be 500 g subject to a tolerance of $+7\frac{1}{2}$ percent and $-2\frac{1}{2}$ percent.

6. MANUFACTURE

6.1 The welders' chipping hammer shall consist of a head and a handle. The head shall be clearly forged and shall be well shaped. Chisel ends shall be either single or double beveled.

6.2 The handles shall be welded to, or be an integral forged part of the head.

7. WORKMANSHIP AND FINISH

7.1 The hammers shall be free from burrs, cracks, roughness and other defects. All fins and flashes produced in forging shall be dressed to a reasonable level surface. The work ends, including taper, shall be smoothly ground.

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8. PRESERVATIVE TREATMENT

8.1 The hammer shall be lacquered, enamelled, painted or shall be given any other anti-corrosive surface treatment except the ground portion, which shall be left to have a natural finish.

9. MARKING

9.1 Each hammer shall be clearly and legibly stamped with its nominal weight and the supplier's name, initials and/or trade-mark.

9.1.1 The hammer 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. The ISI 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 which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. 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.

10. PACKING

10.1 The hammers shall be securely packed in suitable packing cases of size convenient for handling in transit or they shall be bundled and secured suitably as may be specified by the purchaser.

11. SAMPLING

11.1 Unless otherwise agreed to between the purchaser and the supplier, the sampling plan as given in Appendix A shall be followed.

12. TESTS

12.1 Performance Test — The hammer shall be held firmly in the hand and a blow shall be struck as near to vertical as possible on an annealed carbon steel plate (0.80 to 0.90 percent carbon) having a minimum width of 75 mm, a minimum thickness of 20 mm, and of sufficient length to clamp securely in a rigid manner upon a solid foundation. The plate shall have a hardness value within the range of 350 to 380 HV (see IS: 1501-1959*). The blow shall be struck with sufficient force to produce a minimum indentation of 0.8 mm. After making five such indentations with each chipping end of the hammer, the cutting edge of the chisel end and the point of the punch end shall show no sign of crack, fracture, flattening or undue wear.

12.1.1 Weld Wear Inspection — Welds shall be inspected following the performance test (see 12.1). Welds shall be free from cracks, fractures, or any other defect which may cause turning or loosening of the head or handle.

*Method of Vickers hardness test for steel.

APPENDIX A

(Clause 11.1)

SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

A-1. SCALE OF SAMPLING

A-1.1 Lot — In any consignment all the hammers manufactured under essentially similar conditions of manufacture shall constitute a lot.

A-1.2 For ascertaining the conformity of the lot to the requirements of this specification, tests shall be carried out for each lot separately. The number of hammers to be selected at random for this purpose shall be in accordance with col 1 and 2 of Table 1.

TABLE 1 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

(Clauses A-1.2, A-1.3, A-2.1.1 and A-2.2)

Lot Size N	FOR HARDNESS, DIMENSIONS, WEIGHT, MANUFACTURE, WORKMANSHIP AND FINISH		SUB-SAMPLE SIZE FOR TESTS
	Sample Size n	Permissible No. of Defectives	
(1)	(2)	(3)	(4)
Up to 25	3	0	2
26 „ 50	5	0	2
51 „ 100	8	0	3
101 „ 150	13	1	4
151 „ 300	20	1	5
301 and above	32	2	8

A-1.3 The hammers shall be selected at random and to ensure the randomness of selection, random number tables shall be used. If the tables are not available the following procedure is recommended for use:

Starting from any hammer in a lot, count them in one order as 1, 2, 3,....., up to r and so on where r is the integral part of N/n (N being the lot size and n the sample size indicated in col 2 of Table 1). Every r th hammer thus counted shall be selected to constitute the sample.

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A-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-2.1 The hammers selected according to A-1.3 shall be examined for hardness (*see* 3), dimensions (*see* 4), weight (*see* 5), manufacture (*see* 6), workmanship and finish (*see* 7). Any hammer failing to meet the requirements of any one or more of the characteristics shall be considered defective.

A-2.1.1 If the number of defective hammers in the sample is less than or equal to the corresponding permissible number of defectives given in col 3 of Table 1, the lot shall be declared conforming to the characteristics mentioned in A-2.1.

A-2.2 From the lots found satisfactory in accordance with A-2.1.1, a sub-sample of the size indicated in col 4 of Table 1 shall be selected and subjected to tests (*see* 12).

A-2.2.1 If all the hammers subjected to test according to A-2.2, satisfy the necessary requirements, the lot shall be declared conforming to the requirements of this standard.

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