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IS 12853 (1989): Specification pulaski tool for forest fire
[CED 22: Fire Fighting]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

**FIRE FIGHTING — PULASKI TOOL FOR
FOREST FIRES — SPECIFICATION**

भारतीय मानक

अग्नि शमन — दावाग्नि बुझाने के लिये औजार पुलास्की — विशिष्ट

UDC 634·0·36 : 634·0·43 : 614·84

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FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 13 October 1989, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

Modern forest fire techniques in suppression of fires are being introduced in this country. Some of the important equipments which are required are relating to hand tools, water handling equipment, etc. On the request of Ministry of Environment and Forest, Indian Standards covering specification for some of the important tools are being formulated so that on the basis of the same, these could be indigenously manufactured in this country and also users could procure these tools of proper specification. This standard covers the specification for Pulaski tool which is primarily used for clearing bush, small logs and digging a soil for construction of forest fire control lines.

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 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FIRE FIGHTING — PULASKI TOOL FOR FOREST FIRES — SPECIFICATION

1 SCOPE

1.1 This standard covers requirements for Pulaski tool for forest fires used primarily for clearing bush, small logs and digging in the soil for construction of forest fire control lines.

2 REFERENCES

2.1 The Indian Standard IS 2892 : 1980 'Specification for wooden handles for picks and beater (first revision)' is a necessary adjunct to this standard.

3 MATERIALS

3.1 The Pulaski head shall be forged from fully-killed, plain carbon steel containing 0.72 to 0.93 percent carbon, 0.30 to 0.90 percent manganese, not more than 0.05 percent sulphur. The axe end of the Pulaski head shall have a bit hardness of 54 to 58 on the Rockwell C scale. Bit hardness shall extend to a distance of 30 ± 5 mm back from the cutting edge. The Hoe end shall have a hardness of 50 to 55 on the Rockwell C scale for 50 ± 5 mm back from the sharpened edge within 25 mm of the eye of the Pulaski. The steel shall have a hardness of not more than 30 on the Rockwell C scale.

4 DIMENSIONS AND TOLERANCES

4.1 The dimensions and tolerances shall be as given in Fig. 1.

5 MASS

5.1 The mass of the Pulaski head shall be $1.70 \pm \frac{0.06}{0.000}$ kg

6 PERFORMANCE

6.1 Alignment Test

Handled Pulaski shall not be mis-aligned or warped more than 25 mm from a line formed by extension of the cutting edge of the bit over the knobend of the handle when tested for alignment. Before clamping the blade, the centre of the knob end of the Pulaski handle shall be established as accurately as possible by visual sight on its circular or elliptical surface. After clamping the blade vertical one end of a piece of a thread of approximately 4 kgf tensile strength shall be taped directly over the cutting

edge and other end shall be fastened to the rule of an ordinary carpenter's square or equivalent. With the thread held tight, slide the square back and forth until the thread falls directly over the full length of the cutting edge. At this point the distance measured perpendicular to the handle between the edge of the square to which the thread is tangent and the centre of the handle knob shall be measured to the nearest 3 mm. The maximum allowable distance shall be 12 mm to the left or right of the handle centre.

6.2 Cutting Test

The Pulaski axe bit, after sharpening, shall cut easily through dry, hardwood knots. After striking a minimum of ten heavy blows with each sample Pulaski on hardwood, there shall be no evidence of chipping, dulling, or turning over of cutting edges.

6.3 Handle

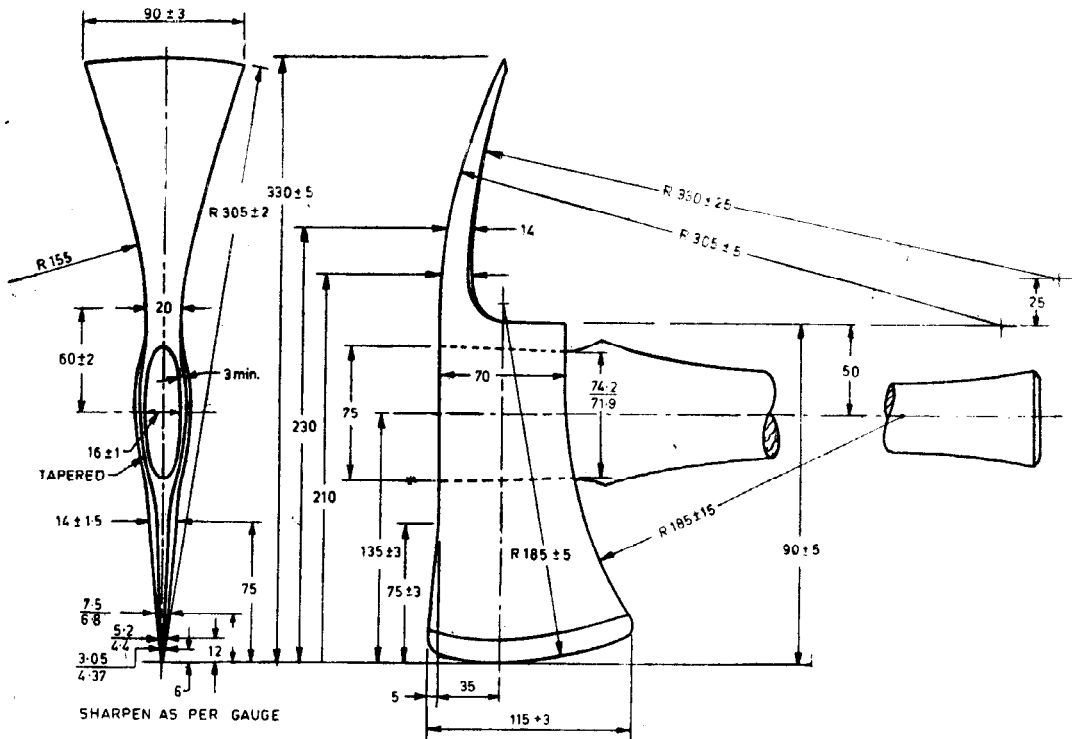
The handle shall conform to the requirements given in IS 2892 : 1980 and also the requirements given in 6.3.1.

6.3.1 The Pulaski shall be placed flat of a bench or other flat support so that the axe bit overhangs the edge of the support 50 mm, the remainder of the Pulaski being held manually or mechanically. Two hard blows shall be struck with a 1.75 kg wooden mallet on the overhanging bit. This test shall be made on each side of the bit and on each side of the cutting edge of the hose end of the Pulaski tool and any evidence of the fracture or deformations of metal resulting from this test shall constitute failure of the sample.

7 WORKMANSHIP AND FINISH

7.1 The Pulaski head shall be free of cracks, laps, burrs, cupping and other defects. Exposed surface (Head) except cutting edge shall be ground to a finish having an average roughness of not more than 3 micro metre. Cutting edge shall be ground to a finish having an average roughness not more than 75 micro metre.

The head except bevel parts shall be painted or enamelled. The bevelled surfaces shall be coated with light oil or wax.



All dimensions in millimetres.

FIG. 1 PULASKI TOOL FOR FOREST FIRE

8 MARKING

8.1 The Pulaski tool shall be marked with the nominal mass and manufacturer's initials and the recognized trade-mark.

9 SAMPLING AND CRITERIA FOR CONFORMITY

9.1 Sampling

9.1.1 Lot

The tool of the same type produced by the same manufacturer shall be grouped together to constitute a lot.

9.1.2 Each lot shall be considered individually for the purpose of evaluation of quality in accordance with the specification.

9.1.2.1 The number of sample for testing to be taken at random from a lot and the criteria for conformity shall be as given in 9.1.2.2 and 9.1.2.3.

9.1.2.2 From each lot, a number of samples as indicated in column 2 of Table 1 shall be selected at random. They shall be examined visually as far as possible in respect of requirement specified in 3, 7 and 8. All the samples

tested shall pass these requirements for the lot to be declared to conform to these requirements.

Table 1 For Lots Produced Under Quality Control System

No. of Items in the Lot	Sample Size
(1)	(2)
Up to 25	3
26 to 50	5
51 to 100	6

9.1.2.3 In respect of mass (see 5) and performance test (see 6.1, 6.2, and 6.3), one sample will be tested for each of the property and shall pass the test for the lot to be declared to conform to the requirements.

9.1.2.4 In the absence of a certificate from manufacturer about the conformity of the specification for the material (see 4.1 and 6.3), one item each shall be taken from each consignment separately and examined individually in respect of the relevant requirement of the specification.

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Doc : No. CED 22 (4584)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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