

**BUREAU OF INDIAN STANDARDS**

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**January 2023**

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*Preliminary Draft*

**Javelins Specification**

*(Second Revision of IS 4613)*

**जेवलिन् विशिष्ट**

*(IS 4613 का दूसरा पुनरीक्षण )*

ICS 97.220.30

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**Sports Goods Sectional Committee,  
PGD 41**

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12 February 2023**

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**FOREWORD**

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Sports Goods Sectional Committee had been approved by the Production and General Engineering Division Council.

This standard was first published in 1968 and revised in 1993 This revision is brought out mainly to align the standard with the latest rules of the International Amateur Athletic Federation, as desired by the Consultative Committee of Parliament for the Department of Youth Affairs and Sports. The alterations made in this revision include modifications in the requirements for materials, mass and construction of the javelins.

**The major changes in this revision are as follows:**

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are however not identical to those used in Indian Standards. Attention is particularly drawn to the following

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as a decimal marker while in Indian Standards, the current-practice is to use a point (.) as the decimal marker.

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 : 2022 'Rules for rounding off numerical values (*second revision*)'.

## **JAVELINS — SPECIFICATION**

*(Second Revision of IS 4613)*

### **1 SCOPE**

This standard prescribes the requirements for javelins for men and women.

### **2 TYPES**

Based on the requirements of different age group, shot puts are classified into following types:

- a) GU18 — It is recommended to use for girls under 18 years of age;
- b) GU20/SW — It is recommended to use for girls under 20 years of age or senior women;
- c) BU18 — It is recommended to use for boy under 18 years of age;
- d) BU20 — It is recommended to use for boy under 20 years of age; and
- e) SM — It is recommended to use for senior men.

### **3 REQUIREMENTS**

#### **3.1 Materials**

**3.1.1** Shaft shall be constructed of metal.

#### **3.1.2** *Head*

Mild steel or aluminum alloy:

#### **3.1.3** *Cord Grip*

*See 3.4.3.*

#### **3.2 Shape and Dimension**

Typical shape of the javelins is shown in Fig. 1. The dimensions of the javelins for men and women shall conform to those given in Table 1 and Fig. 1.

#### **3.3 Mass**

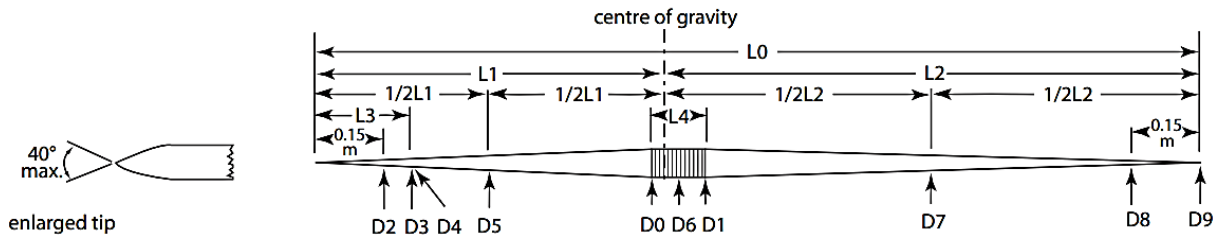
The mass of the javelins shall be as given in Table 1.

#### **3.4 Manufacture Workmanship and Finish**

**3.4.1** The javelins shall consist of three parts, namely, a shaft, a head and a cord grip.

**3.4.2** The shaft shall be constructed of metal, and shall have fixed to it all metal head terminating in a sharp point.

The surface of the shaft shall have no dimples or pimples, grooves or ridges, holes or roughness and the finish shall be smooth and uniform throughout.



Lengths		Diameters		Maximum	Minimum
L0	Overall	D0	In front of grip	—	—
L1	Tip to C of G	D1	At rear of grip	D0	D0-0.25mm
1/2L1	Half L1	D2	150 mm from tip	0.8 D0	—
—L2	Tail to C of G	D3	At rear of head	—	—
1/2L2	Half L2	D4	Immediately behind head	—	D.-2.5mm
L3	Head	D5	Half way tip to C of G	0.9 D0	—
L4	Grip	D6	Over grip	D0+8mm	—
		D7	Half way tail to C of G	—	0.9 D0
		D8	150mm from tail	—	0.4 D0
C of G	Centre of Gravity	D9	At tail	—	3.5mm

Note All measurements of diameters must be at least 0.1mm

all dimensions in millimetres.

FIG. 1 INTERNATIONAL JAVELIN

Table 1 Requirements for Javelins

(Clause 3.2, 3.3, and Fig. 1)

SI. No.	Requirement	For Men	For Women
(1)	(2)	(3)	(4)
i)	Mass (inclusive of cord grip). G :		
	a) For acceptance of record, Min	800	600
	b) For supply of equipment for competition	805 to 825	605 to 620
ii)	Overall length, mm	<i>Min</i> 2600 <i>Max</i> 2700	<i>Min</i> 2200 <i>Max</i> 2300
iii)	Distance from tip of metal, head to centre of gravity, mm	<i>Min</i> 900 <i>Max</i> 1060	<i>Min</i> 800 <i>Max</i> 950
iv)	Length of metal head, mm	<i>Min</i> 250 <i>Max</i> 330	<i>Min</i> 250 <i>Max</i> 330
v)	Width of cord grip, mm	<i>Min</i> 150 <i>Max</i> 160	<i>Min</i> 140 <i>Max</i> 150
vi)	Diameter of shaft at thickest point (d), mm	<i>Min</i> 25 <i>Max</i> 30	<i>Min</i> 20 <i>Max</i> 25

**3.4.3** The grip, which shall cover the centre of gravity, shall not exceed the diameter of the shaft by more than 8 mm. It may have a regular non-slip pattern surface but without thongs, notches or indentations of any kind. The grip shall be of uniform thickness.

**3.4.4** The cross-section shall be regularly circular throughout (*see* Note 1). The maximum diameter of the shaft shall be immediately in front of the grip. The central portion of the shaft, including the part under the grip, may be cylindrical or slightly tapered towards the rear but in no case may the reduction in diameter, from immediately in front of the grip to immediately behind, exceed 0.25 mm. From the grip, the javelin shall taper regularly to the tip at the front and the tail at the rear. The longitudinal profile from the grip to the front tip and to the tail shall be straight or slightly convex (*see* Note 2) and there shall be no abrupt alteration in the overall diameter, except immediately behind the head and at the front and rear of the grip, throughout the length of the javelin. At the rear of the head, the reduction in diameter may not exceed 2.5 mm and this departure from the longitudinal profile requirement may not exceed more than 300 mm behind the head.

## NOTES

1 Whilst the cross-section should be circular, a maximum difference between the largest and smallest diameters of 2 percent is permitted. The mean value of these two diameters must correspond to the specification given for a circular javelin.

2 The shape of the longitudinal profile may be quickly and easily checked using a metal straight edge least 500 mm long and two feeler gauges 0.20 mm and 1.25 mm thick. For slightly convex sections of the profile, the straight edge will rock while being in firm contact with a short section of the javelin. For straight sections of the profile, with the straight edge held firmly against it, it must be impossible to insert the 0.20 mm gauge between the javelin and the straight edge anywhere over the length of contact. This shall not apply immediately behind the joint between the head and the shaft. At this point it must be impossible to insert the 1.25 mm gauge.

**3.4.5** The javelin shall have no mobile parts or other apparatus which during the throw could change its centre of gravity or throwing characteristics.

**3.4.6** The tapering of the javelin to the tip of the metal head shall be such that the angle of the point shall be not more than 40°. The diameter, at a point 150 mm from the tip, shall not exceed 80 percent of the maximum diameter of the shaft. At the midpoint between the centre of gravity and the tip of the metal head, the diameter shall not exceed 90 percent of the maximum diameter of the shaft.

**3.4.7** The tapering of the shaft to the tail at the rear shall be such that the diameter, at the midpoint between the centre of gravity and the tail, shall be not less than 90 percent of the maximum diameter of the shaft. At a point 150 mm from the tail, the diameter shall be not less than 40 percent (for men and 30 percent for women) of the maximum diameter of the shaft. The diameter of the shaft at the end of the tail shall not be less than 3.5 mm.

### **3.5 Balance Test**

When suspended from the centre of gravity, the javelin shall balance in a perfectly horizontal plane.

## **4 PACKING AND MARKING**

### **4.1 Packing**

The javelins shall be packed as agreed to between the purchaser and the supplier.

### **4.2 Marking**

**4.2.1** Each javelin shall be marked with the following:

- a) Name of material indicating for men or women;
- b) Indication of the source of manufacture;
- c) Net mass of the material;
- d) Batch or lot number;
- e) Month and year of the manufacture.

**4.2.2** Javelins may also be marked with the Standard Mark.

## **5 TEST METHODS**

Test shall be carried out using suitable measuring devices and according to the methods prescribed in the specifications.

## **6 SAMPLING**

The scale of sampling and criteria for conformity of the javelins to the requirements of this specifications shall be agreed to between the purchaser and the supplier. A recommended sampling plan is given in Annex A.

## ANNEX A

(Clause 6)

### SAMPLING OF JAVELINS

#### A-1 LOT

In any consignment all the javelins of the same size, manufactured from the identical materials under similar conditions shall be grouped together to constitute a lot.

**A-2** The number of javelins to be selected from a lot shall depend upon the size of the lot and shall be in accordance with col 1 and 2 Table 2.

**A-2.1** The javelin shall be selected from the lot at random and in order to ensure randomness of selection, procedures given in IS 4905 : 1968 shall be followed.

#### A-3 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

All the javelins selected according to col 1 and 2 of Table 2 shall be examined for various requirements of the specifications and subjected to balance test. A javelins in the sample failing to meet any of the requirements, including the requirement of the balance test shall be considered as defective. The lot shall be considered as conforming to the requirements of this specification if the defectives in the sample do not exceed the number given in col 3 of table 2.

Table 2 Scale of Sampling and Permissible Number of Defectives

(Clause A-2 and A-3)

Lot Size	Sample Size	Permissible No. of Defectives
(1)	(2)	(3)
Up to 5	All	0
6 to 25	5	0
26 to 50	8	0
51 to 100	13	0
101 to 150	20	1
151 to 300	32	2
301 and above	50	3