

इस्पात काउंटरशंक शीर्ष तार  
कीले — विशिष्टि  
(दूसरा पुनरीक्षण)

Steel Countersunk Head Wire  
Nails — Specification  
( Second Revision )

ICS 21.060.50

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## FOREWORD

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

This standard was first published in 1961 and subsequently revised in 1972 with further amendments in 1975, 1979 and 1981. In this revision, all the previous amendments have been incorporated and some editorial changes have been made.

The other types of nails are being covered by separate standards, as follows:

- IS 6730 : 1972 Felt nails
- IS 6732 : 1972 Double point nails
- IS 6733 : 1972 Wall and roofing nails
- IS 6734 : 1972 Cut lath and lath nails
- IS 6738 : 1972 Panel pins and lost head nails

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

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*)'. 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***STEEL COUNTERSUNK HEAD WIRE NAILS — SPECIFICATION***( Second Revision )***1 SCOPE**

This standard gives the requirements of steel countersunk head wire nails.

**2 REFERENCES**

The standard given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated was valid. The standard is subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standard:

<i>IS No.</i>	<i>Title</i>
IS 280 : 2006	Mild steel wire for general engineering purposes ( <i>fourth revision</i> )

**3 MATERIAL**

Nails shall be manufactured from mild steel wire conforming to IS 280 having a minimum ultimate tensile strength of 550 MPa and satisfying bend test as in 7.

**4 DIMENSIONS AND TOLERANCES**

**4.1** The dimensions and tolerances of the countersunk head type wire nails shall be according to Table 1 to Table 4.

**4.2** The bend of shank as shown in Fig. 1 shall not exceed 1.0 percent of total length.

**4.3** Eccentricity and ovality of the centre of the nail head from axis of shank shall be as below:

- For nails with shank diameter  $\geq 2.00$  mm; 12 percent of shank diameter, *Max.*
- For nails with shank diameter  $< 2.00$  mm; 14 percent of shank diameter, *Max.*

**5 GENERAL REQUIREMENTS**

The nails shall be machine made and may have die marks and feeding knife marks on the shank. They shall be uniformly circular in section, straight, free

from wasters and the ends shall be pointed to conform to the dimensions given in Table 1 to Table 4. The heads shall be properly formed, chequered end concentric with the shank.

**6 FINISH**

Unless otherwise specified by the purchaser, countersunk head wire nails shall be supplied bright finished.

**7 BEND TEST**

Steel countersunk head wire nails, selected according to **10.2**, when cold shall not break or develop cracks, when doubled over either by pressure or by blow from a hammer until the internal radius is equal to the diameter of the test piece and the sides are parallel.

**8 DESIGNATION**

The countersunk head nails shall be designated by the size, length and the number of this standard.

*Example:*

A countersunk head nail of size 4.00 mm and length 100 mm shall be designated as:

Nail 4 × 100 IS 723

**9 PACKING**

Nails of different sizes and types shall be packed in separate containers.

**9.1** Nails including 25 mm in length and below shall be packed in cardboard boxes and the net weight of each box shall be 0.5 kg. The nails may also be supplied in gunny bags and the net weight of each bag shall be 50 kg.

**9.2** Nails above 25 mm and below 80 mm in length shall be packed in cardboard boxes and the net weight of each box shall be 2.5 kg. The nails may also be supplied in gunny bags, and the net weight of each bag shall be 50 kg.

**9.3** Nails 80 mm and above in length shall be packed in wrappings of double gunny bags, the weight of each package being 15 kg. The nails may also be supplied in cases of bituminized canvas or hessian bags; the net weight of each package shall be 50 kg.

## **10 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY**

### **10.1 Lot**

In any consignment all the packages of nails of the same type and size manufactured under essentially similar conditions shall be grouped together to constitute a lot.

### **10.2 Selection of Samples**

The number of nails to be selected at random from the lot shall depend on the size of the lot and shall be in accordance with col (1) and (2) of Table 5. The nails shall be selected from at least 25 percent of the packages.

### **10.3 Number of Tests and Criteria for Conformity for Visual End Dimensional Characteristics**

All the nails selected as in **10.2** shall be examined for manufacturing defects, dimensions and finish. The lot shall be considered as conforming to these requirements if the number of nails found defective does not exceed the corresponding acceptance number given in col (3) to of Table 5.

### **10.4 Number of Tests and Criteria for Conformity For Bend Test**

The number of nails to be selected for carrying out bend test shall be according to col (4) of Table 5. These nails shall be selected from those already inspected according to **10.3** and found satisfactory. The lot shall be considered as conforming to the requirements of bend test if the number of nails failing to pass this test does not exceed the corresponding acceptance number in col (5) of Table 5.

**10.5** The lot shall be considered as conforming to the requirements of the specification if it satisfies **10.3** and **10.4**.

## **11 MARKING**

**11.1** All packages of nails shall be marked with the following information:

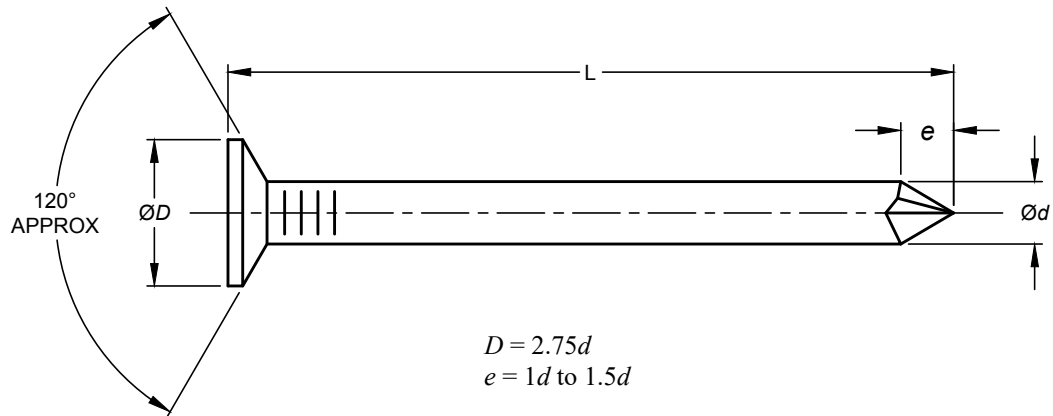
- a) Manufacturer's name or trade-mark;
- b) Type of nail;
- c) Size (shank diameter) and length of nail; and
- d) Net weight of the package.

### **11.2 BIS Certification Marking**

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations frames thereunder, and the product(s) may be marked with the Standard Mark.

**Table 1 Dimensions and Tolerances of Steel Countersunk Head Wire Nails (Size 1.25 mm to 1.40 mm)**

(Clauses 4.1 and 5)  
All dimensions in millimetres.



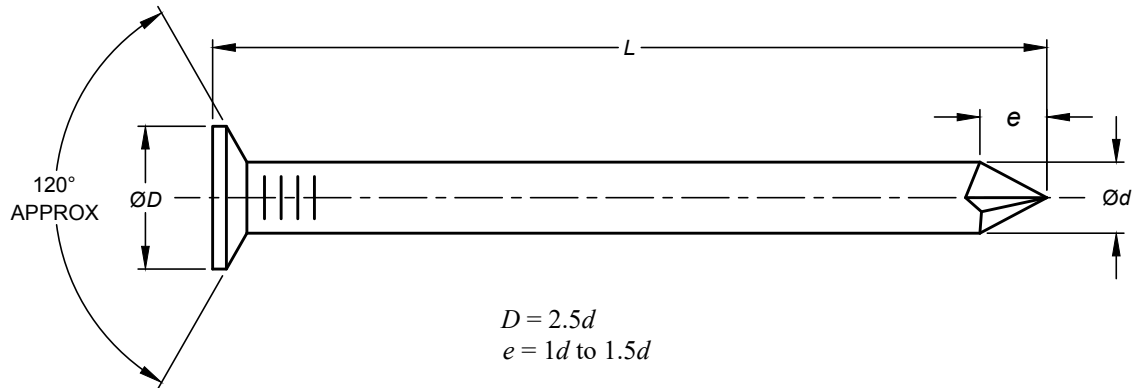
SI No.	Size $d$ (Shank Diameter)		Head Diameter $D$		Length $L$		Approximate Number of Nails/kg
	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	1.25	$\pm 0.04$	3.4	$\pm 0.17$	20	$\pm 1.0$	5 060
ii)	1.40	$\pm 0.04$	3.8	$\pm 0.17$	20	$\pm 1.0$	3 040

NOTE — The number of nails per kilogram is likely to vary to a considerable extent. The figure given in the table is intended only for guidance to the purchaser.

**Table 2 Dimensions and Tolerances of Steel Countersunk Head Wire Nails (Size 1.60 mm to 1.80 mm)**

(Clauses 4.1 and 5)

All dimensions in millimetres.



SI No.	Size $d$ (Shank Diameter)		Head Diameter $D$		Length $L$		Approximate Number of Nails/kg
	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	1.60	$\pm 0.04$	4.0	$\pm 0.2$	15	$\pm 1.0$	3 940
					20	$\pm 1.0$	2 710
					25	$\pm 1.2$	2 110
ii)	1.80	$\pm 0.04$	4.5	$\pm 0.23$	25	$\pm 1.2$	1 720
					30	$\pm 1.2$	1 410

NOTE — The number off nails per kilogram is likely to vary to a considerable extent. The figure given in the table is intended only for guidance to the purchaser.

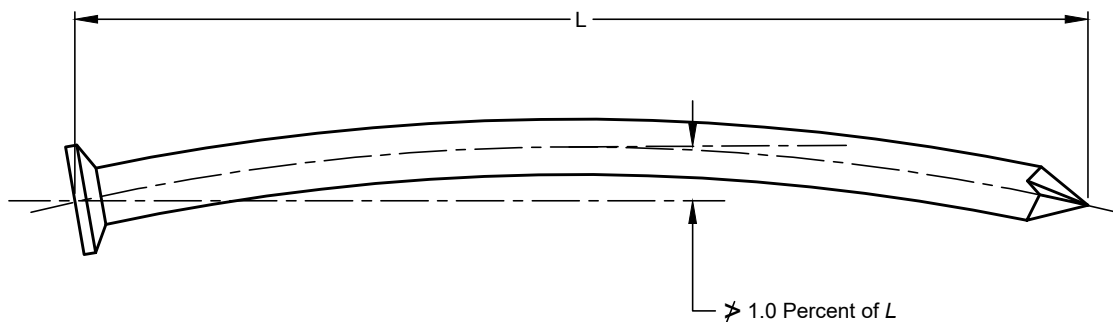
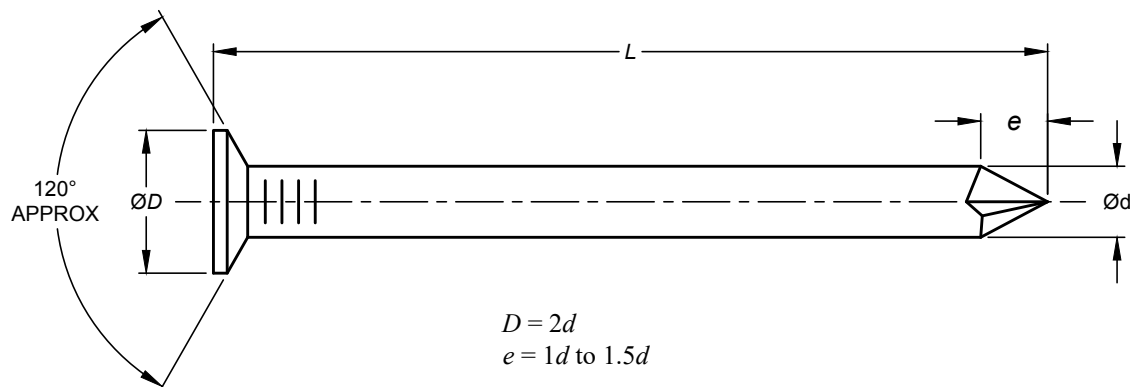


FIG. 1 BEND OF SHANK

**Table 3 Dimensions and Tolerances for Steel Countersunk Head Wire Nails (Size 2.00 mm to 2.80 mm)**

(Clauses 4.1 and 5)

All dimensions in millimetres.



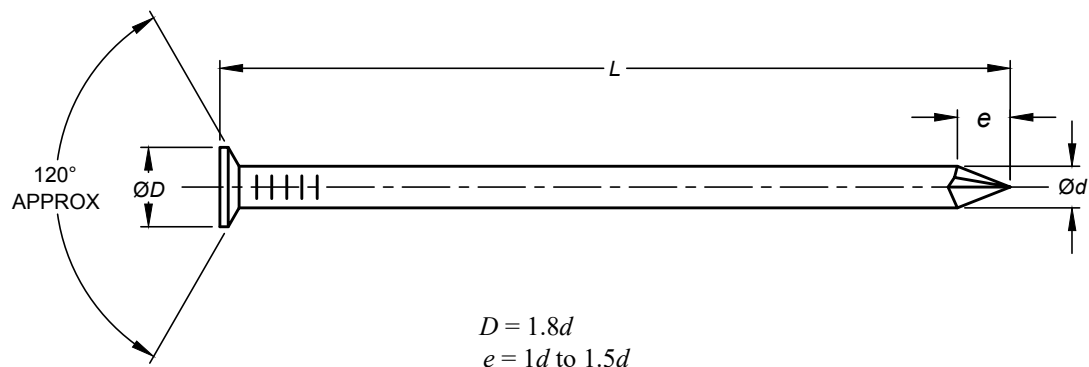
SI No.	Size $d$ (Shank Diameter)		Head Diameter $D$		Length $L$		Approximate Number of Nails/kg
	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	2.00	$\pm 0.04$	4.00	$\pm 0.2$	25	$\pm 1.2$	1 470
					30	$\pm 1.2$	1 170
					40	$\pm 1.5$	840
					50	$\pm 2.1$	650
ii)	2.24	$\pm 0.04$	4.5	$\pm 0.23$	40	$\pm 1.5$	700
iii)	2.50	$\pm 0.05$	5.0	$\pm 0.25$	50	$\pm 2.1$	550
iv)	2.80	$\pm 0.06$	5.6	$\pm 0.28$	60	$\pm 2.1$	350

NOTE — The number of nails per kilogram is likely to vary to a considerable extent. The figure given in the table is intended only for guidance to the purchaser.

**Table 4 Dimensions and Tolerances for Steel Countersunk Head Wire Nails (Size 3.15 mm to 10 mm)**

(Clauses 4.1 and 5)

All dimensions in millimetres.



Sl No.	Size $d$ (Shank Diameter)		Head Diameter $D$		Length $L$		Approximate Number of Nails/kg
	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	3.15	$\pm 0.06$	5.7	$\pm 0.29$	60	$\pm 2.1$	230
ii)	3.55	$\pm 0.06$	6.4	$\pm 0.32$	80	$\pm 2.6$	140
iii)	4.00	$\pm 0.06$	7.2	$\pm 0.36$	100	$\pm 3.4$	90
iv)	4.50	$\pm 0.06$	8.1	$\pm 0.41$	90	$\pm 3.1$	90
					100	$\pm 3.4$	80
					125	$\pm 3.8$	65
v)	5.00	$\pm 0.06$	9.0	$\pm 0.45$	100	$\pm 3.4$	60
					125	$\pm 3.8$	50
					150	$\pm 3.8$	40
vi)	6.30	$\pm 0.06$	11.3	$\pm 0.57$	150	$\pm 3.8$	30
vii)	8.00	$\pm 0.06$	14.4	$\pm 0.72$	200	$\pm 4.4$	12
					225	$\pm 4.4$	10
vii)	10.00	$\pm 0.06$	18.0	$\pm 0.90$	250	$\pm 4.4$	7

NOTE — The number of nails per kilogram likely to vary to a considerable extent. The figure given in the table is intended only for guidance to the purchaser.



**Table 5 Scale of Sampling and Criteria for Conformity***(Clauses 10.2, 10.3 and 10.4)*

Sl No.	Approximate Number of Nails in the Lot	For Visual and Dimensional Characteristic		For Bend Test	
		Number of Nails to be Selected	Permissible Number of Defective Nails	Sub-Sample Size	Permissible Number of Defective Nails
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 1 000	32	5	8	0
ii)	1 001 to 3 000	50	7	13	0
iii)	3 001 to 10 000	80	10	20	0
iv)	10 001 to 35 000	125	14	32	1
v)	35 001 and above	200	21	50	2

NOTE — The sampling plan accepts the lots containing 7 percent or less defectives in respect of visual and dimensional characteristics more than 95 percent of the times. In the case of bend test the lot containing 1.5 percent or less defectives will be accepted more than 95 percent of times.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

General Engineering and Fasteners Standards Sectional Committee, PGD 37

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### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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