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Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

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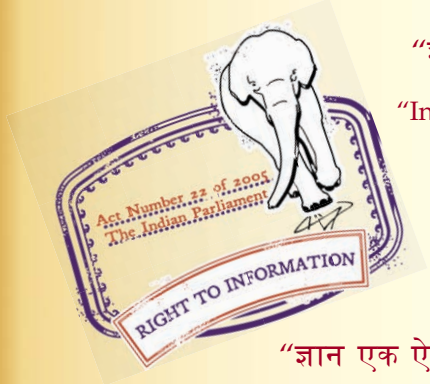
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 2907 (1998): Non-Ferrous Rivets [PGD 31: Bolts, Nuts and Fasteners Accessories]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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भारतीय मानक

अलौह धातु के रिवेट — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

NON-FERROUS RIVETS — SPECIFICATION

(First Revision)

ICS 21.060.40

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

October 1998

Price Group 3

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Bolts, Nuts and Fasteners Accessories Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard was first published in 1964. In the present revision, following modifications have been made:

a) Flattening test has been replaced by head soundness test, since the latter is more realistic.

b) The method of representation of tolerances for form and position has been update.

c) Reference to IS 10102 has been made for various requirements relating to technical supply conditions of rivets.

In the preparation of this revision assistance has been derived from DIN 660:1993 'Round head rivets with nominal diameters from 1 mm to 8 mm' issued by Deutsches Institut für Normung (DIN).

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

NON-FERROUS RIVETS — SPECIFICATION

(First Revision)

1 SCOPE

This standard covers the requirements of copper, tinned copper, brass and aluminium rivets in the diameter range of 1 mm to 10 mm, intended for general engineering purposes.

2 REFERENCES

The following Indian Standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
320 : 1980	High tensile brass rods and sections (other than forging stock) (*second revision*)
740 : 1977	Wrought aluminium and aluminium alloy rivet stock for general engineering purposes (*second revision*)
10102 : 1982	Technical supply conditions for rivets

3 MATERIAL

3.1 Copper Rivets

The copper rivets shall be made from copper rods having a minimum copper content of 99.85 percent (silver being counted as copper) and having a minimum tensile strength of 215 MPa.

3.2 Tinned Copper Rivets

In case of tinned copper rivets, tin used for tinning the copper rivets, shall be of not less than 99 percent purity.

3.3 Brass Rivets

Brass rivets shall be made from brass rod having mechanical properties conforming to Grade HT 1 of IS 320.

3.4 Aluminium Rivets

Aluminium rivets shall be made from aluminium rivet stock conforming to IS 740.

4 DIMENSIONS

4.1 The dimensions of rivets shall be as given in Tables 1 to 3.

4.2 Where the rivets with snap head and countersunk head are made with flat edge, they shall conform to the values given in IS 10102.

4.3 The preferred diameter — length combinations are given in Table 4.

5 DESIGNATION

5.1 Rivets conforming to this standard shall be designated by type of head, nominal diameter, length, material and No. of this Indian Standard.

Example :

A snap head rivet of 6 mm nominal diameter, having a length of 30 mm and made of copper, shall be designated as:

Snap Head Rivet 6 × 30 IS 2907 Copper

5.2 Rivets of other types shall be designated in a similar manner. In case of countersunk head rivets, countersunk angle (90° or 120°) shall be included in the designation.

6 METHOD OF MANUFACTURE

The rivets shall be made by cold forging and shall subsequently be appropriately heat treated, if necessary.

7 ACCEPTANCE TESTS

7.1 General

The sampling and acceptance criteria of the rivets shall be in accordance with IS 10102.

7.2 Tests for Material

The material used in the manufacture of the rivets shall be tested as per stipulations of the relevant material specifications.

7.3 Head Soundness Test

When tested by the method prescribed in IS 10102 the rivets at room temperature shall withstand the test without exhibiting any sign of cracking at the fillet between the head and the shank.

8 GENERAL REQUIREMENTS

8.1 In respect of requirements not covered in this standard, the rivets shall conform to IS 10102.

8.2 Limits of surface cracks on rivets shall be in accordance with IS 10102.

9 MARKING

9.1 All rivets over 5 mm diameter shall be marked with the manufacturer's trade—mark on the head in raised figure. In addition, material shall be marked with raised letter on the head.

9.2 BIS Certification Marking

The product conforming to this standard may also be marked with the Standard Mark. Wherever it is not possible to put the Standard Mark on the product, it may be marked on the packaging.

9.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

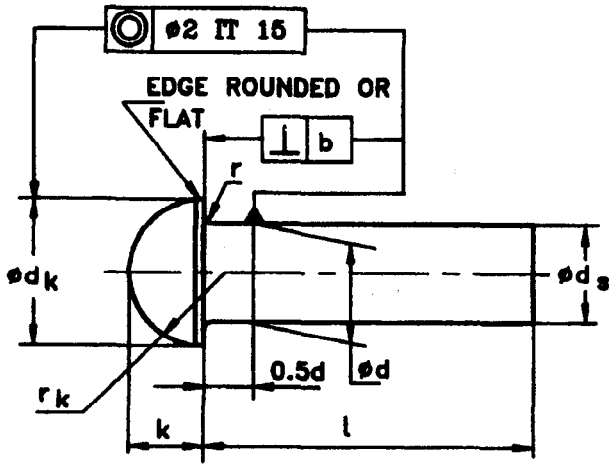
10 PACKING AND MODE OF DELIVERY

10.1 Depending on sizes, rivets shall be packed in numbers of 100, 500 and 1 000 in high density polyethylene covers. These covers shall be packed in cardboard boxes. The cardboard boxes shall then be finally packed in wooden boxes.

10.2 Rivets shall be delivered in accordance with the provision made in IS 10102.

Table 1 Dimensions for Snap Head Rivets

(*Clause* 4.1)



All dimensions in millimetres.

Nom Sizes		1	1.6	2	2.5	3	4.0	5	6	8	10
d	*Max*	1.05	1.65	2.10	2.60	3.10	4.10	5.15	6.15	8.15	10.30
	Min	0.95	1.55	1.90	2.40	2.90	3.90	4.85	5.85	7.85	9.70
d_s	*Min*	0.93	1.52	1.87	2.37	2.87	3.87	4.82	5.82	7.76	9.40
d_k	*Max*	1.80	3.05	3.75	4.62	5.50	7.30	9.05	10.80	14.36	17.86
	Min	1.55	2.55	3.25	4.12	5.00	6.70	8.45	10.20	13.64	17.14
k	*Max*	0.72	1.08	1.32	1.62	1.92	2.55	3.15	3.75	4.98	6.18
	Min	0.48	0.84	1.08	1.38	1.68	2.25	2.85	3.45	4.62	5.82
r	*Max*	0.2						0.3		0.4	0.5
r_k		1	1.6	1.9	2.4	2.8	3.8	4.6	5.7	7.5	8.0
b		0.2						0.3			

NOTES

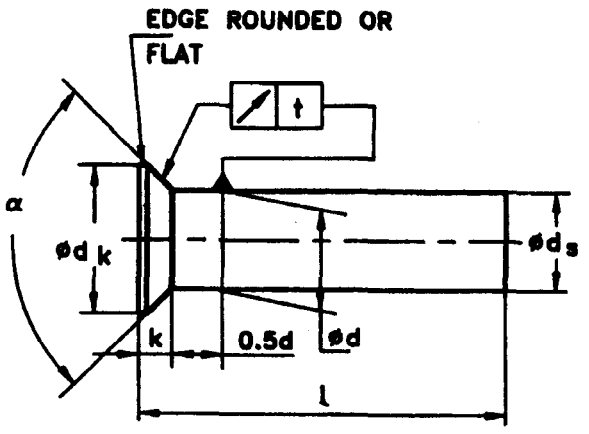
1 Between the measuring plane at a distance of 0.5 d from the underside of the head and the start of the rounding under the rivet head, the nominal size d, may increase up to the rivet hole diameter or decrease towards the shank end to value of d_s.

2 Rivets shall be furnished with a definite radius under the head which shall not exceed the value of r as given.

3 The shape of head shall be forged into part of sphere. Necessary flat land for trimming (*see* **4.1**) head periphery is permissible.

Table 2 Dimensions for Flat Countersunk Head (90° and 120°) Rivets

(*Clause* 4.1)



All dimensions in millimetres.

Nom Sizes		1.6	2	2.5	3	4	5	6	8	10
d	*Max*	1.65	2.10	2.60	3.10	4.10	5.15	6.15	8.15	10.30
	Max	1.55	1.90	2.40	2.90	3.90	4.85	5.85	7.85	9.70
d_s	*Min*	1.52	1.87	2.37	2.87	3.87	4.82	5.82	7.76	9.40
d_k	*Max*	3.45	4.25	5.25	6.25	8.30	10.30	12.30	16.36	20.36
	Min	2.95	3.75	4.75	5.75	7.70	9.70	11.70	15.64	19.64
k	120°	0.46	0.58	0.72	0.87	1.16	1.45	1.74	2.32	2.90
	90°	0.80	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
a + 5° 0	120°/90°									

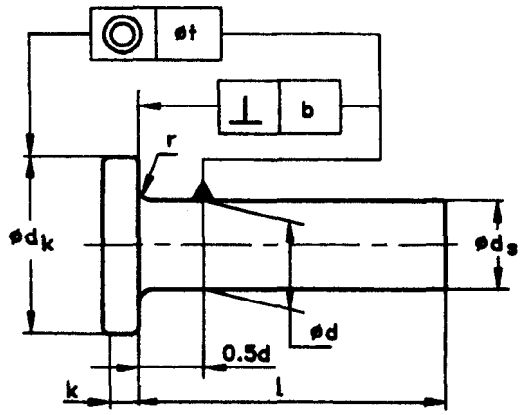
NOTES

1 Between the measuring plane at a distance of 0.5d from the under side of the head and the start of the rounding under the rivet head, the nominal size d, may increase upto the rivet hole diameter or decrease towards the shank end to value of d_s.

2 Rivets having 90° countersunk head are used for general engineering purposes whereas 120° countersunk head are used for this sheet applications where 90° countersunk head is not used.

Table 3 Dimensions for Flat Head Rivets

(*Clause* 4.1)



All dimensions in millimetres.

Nom Sizes		1.6	2	2.5	3	4	5	6	8	10
d	*Max*	1.65	2.10	2.60	3.10	4.10	5.15	6.15	8.15	10.30
	Min	1.55	1.90	2.40	2.90	3.90	4.85	5.85	7.85	9.70
d_s	*Min*	1.52	1.87	2.37	2.87	3.87	4.82	5.82	7.76	9.40
d_k	*Max*	3.45	4.25	5.25	6.25	8.30	10.30	12.30	16.36	20.36
	Min	2.95	3.75	4.75	5.75	7.70	9.70	11.70	15.64	19.64
k	*Max*	0.52	0.62	0.74	0.87	1.15	1.40	1.65	2.18	2.68
	Min	0.28	0.38	0.50	0.63	0.85	1.10	1.35	1.82	2.32
r	*Max*	0.2					0.3		0.4	0.5
b		0.2					0.3			

NOTES

1 Between the measuring plane at a distance of 0.5d from the underside of the head and the start of the rounding under the rivet head, the nominal size d, may increase upto the rivet hole diameter or decrease towards the shank end to value of d_s.

2 Rivets shall be furnished with a definite radius under the head which shall not exceed the value r given.

Table 4 Diameter — Length Combinations

(*Clause* 4.3)

LENGTH l +0.5 0 FOR l ≤ 10 +1.0 0 FOR 10 < l ≤ 20 +1.5 0 FOR l > 20	NOMINAL DIAMETER d									
	1	1.6	2	2.5	3	4	5	6	8	10
2										
3										
4										
5										
6										
7										
8										
9										
10										
12										
14										
16										
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65										
70										
75										
80										
85										

NOTE — The preferred lengths are between the bold stepped lines.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards : Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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