

Indian Standard

SPECIFICATION FOR ALUMINIUM FASTENERS FOR BUILDING PURPOSES

1. Scope—J-type hook bolts and nuts, mushroom head seam bolts and nuts, and washers of aluminium for roofing sheets.

2. Material

2.1 Hook Bolts

2.1.1 Rolled thread bolts—From aluminium alloy NG 5-M, NG 6-½H, HG 19-WP or HG 30-WP of IS:739-1966 'Specification for wrought aluminium and aluminium alloys, wire (for general engineering purposes) (revised)', or NE 5-M, NE 6-M, NE 8-M, HE 19-WP or HE 30-WP of IS:733-1967 'Specification for wrought aluminium and aluminium alloys, bars, rods and sections (for general engineering purposes) (first revision)'.

2.1.2 Cut thread bolts—From aluminium alloy:

NG 5-M, NG 6-½H, HG 19-WP or HG 30-WP of IS:739-1966 or NE 5-M, NE 6-M, NE 8-M, HE 19-WP or HE 30-WP of IS:733-1967.

2.2 Mushroom Head Seam Bolt—From aluminium alloy:

NG 5-M, NG 6-½H, HG 19-WP or HG 30-WP of IS:739-1966 or NE 5-M, NE 6-M, NE 8-M, HE 19-WP or HE 30-WP of IS:733-1967.

2.3 Nuts for Hook Bolts and Seam Bolts—From one of the following aluminium alloys:

NE 4-M, NE 5-M, NE 6-M, HE 19-WP or HE 30-WP of IS:733-1967 or NS 4-½H, NS 5-½H, NS 6-½H, HS 20-WP or HS 30-WP of IS:737-1965 'Specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes) (revised)'.

2.4 Washers—From one of the following alloys:

NS 3-½H, NS 4-½H, HS 20-WP or HS 30-WP of IS:737-1965.

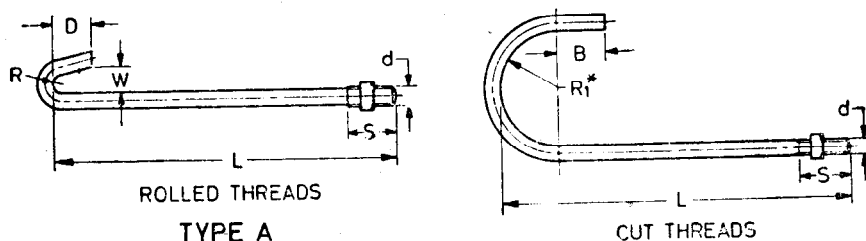
3. Grade—Black grade B of IS:1367-1967 'Technical supply conditions for threaded fasteners (first revision)'.

4. Dimensions

4.1 J-Type Hook Bolts—As specified in Table 1.

TABLE 1 DIMENSIONS OF J-TYPE HOOK BOLTS

All dimensions in millimetres.



The screw thread may be formed by either thread cutting or thread rolling. In the latter case, the diameter of the unthreaded shank may be equal to the pitch diameter.

Size <i>d</i>	<i>B</i> <i>Nom</i>	Inside Radius of Hook <i>R</i> <i>Min</i>	Inside Depth of Hook <i>D</i> <i>Min</i>	Inside Width of Mouth of Jaw <i>W</i> <i>Min</i>	Thread Length <i>S</i> <i>Min</i>	Preferred Lengths <i>L</i>	Size of Nut
M6	20	4	15	12	25	70, 80, 90, 100, 110, 120, 130, 140, 150	M6
M8	25	5	20	14	25	70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200	M8
M10	25	6	20	16	25	70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200	M10

**R*₁ to be specified by the purchaser depending on the pipe size to be used.

*Since revised.

Adopted 30 December 1970

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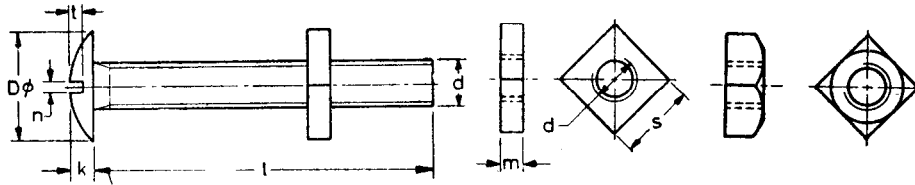
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Bolts, Nuts and Fasteners Accessories Sectional Committee, EDC 27 [Ref.: Doc.: EDC 27 (1982.)]

4.2 Mushroom Head Seam Bolts— As specified in Table 2.

TABLE 2 DIMENSIONS FOR MUSHROOM HEAD SEAM BOLTS AND NUTS

All dimensions in millimetres.



Size <i>d</i>	<i>D</i>	<i>k</i>	<i>n</i>		<i>t</i>	Preferred Lengths <i>l</i>	^h <i>s</i> (h 14)		<i>m</i>	Size of Nut
			Min	Max			Min	Max		
M5	9	3	1.3	1.4	1.5	12, 14, 16, 20, 25, 30, 35, 40, 45, 50	7.64	8.00	2.5	M5
M6	13	4	1.6	1.8	1.8	12, 14, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	9.64	10.00	3.15	M6
M8	16	5	1.6	1.8	2.0	12, 14, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	12.57	13.00	4	M8
M10	20	6	2.5	2.8	2.5	12, 14, 16, 20, 25, 30, 35, 40, 45, 50	16.57	17.00	5	M10

*According to IS : 1369-1961 'Dimensions of screw thread run outs and undercuts'.

4.3 Washers— As specified in Table 3.

4.4 Square Nuts for Use with J-Type Hook Bolts— Conforming to IS : 2585-1968 'Specification for black square bolts and nuts (diameter range 6 to 39 mm) and black square screws (diameter range 6 to 24 mm) (first revision)'.

5. Designation

5.1 J-type hook bolts, Type A, size M8, length 100 and material NG 5-M of IS:739-1966 shall be designated as:

J-Type Hook Bolt AM8 × 100 IS:6113 NG 5-M

5.2 Seam bolt size M8, length 80 mm and material HG 19 of IS : 739-1966 shall be designated as:

Seam Bolts M8 × 80 IS:6113 HG 19

5.3 Nut size M8 and material HE 19-WP of IS:733-1967 shall be designated as:

Nut M8 IS:6113 HE 19-WP

5.4 Washers of size 8, Type A, and material HS 20 of IS:737-1965 shall be designated as:

Washer A8 IS:6113 HS 20

6. General Requirements

6.1 Manufacture, tolerance, tests, marking and packing as specified in IS : 1367-1967.

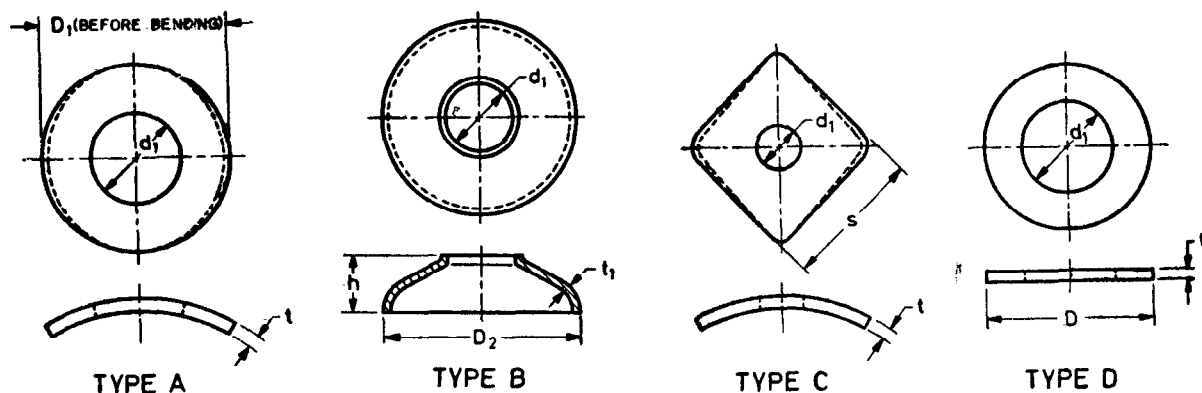
6.2 Sampling as specified in IS:2614-1969 'Methods for sampling of fasteners (first revision)'.

6.3 Tests as specified in IS: 1367-1967.

6.4 Requirements for washers as specified in 5369-1969 'General requirements for plain washers and lock washers.'

TABLE 3 DIMENSIONS FOR WASHERS

All dimensions in millimetres.



Size	Hole Dia d_1	Thickness t	Thickness t_1	Outside Dia D	Outside Dia D_1	Outside Dia D_2	Depth h	Width Across Flats s
5	5.8	1.60	0.90	10	25	35	10	36
6	7	1.60	0.90	12	25	35	10	36
8	10	1.60	0.90	16	25	35	10	36
10	12	1.60	0.90	22	25	35	10	36

EXPLANATORY NOTE

The technical requirements and dimensions for fasteners manufactured from aluminium alloy have been covered in this standard. These fasteners are suitable for use where the structure to which they are attached is also of aluminium or aluminium alloy. These fasteners are particularly useful in the case of structures made up of dissimilar material, where suitable protection against electrolytic actions is necessary. The types of fasteners covered in this standard are similar to those given in IS:730-1966 'Specification for fasteners for corrugated sheet roofing (revised)'. The purpose of issuing this standard is to draw attention to the requirements mentioned above where the aluminium fasteners are used in contact with sheet or with other dissimilar metals.

This standard is based on BS 1494: Part 1:1964 'Fixing accessories for building purposes, Part 1 Fixing for sheet, roof and wall coverings'.