BUREAU OF INDIAN STANDARDS

Preliminary DRAFT STANDARD FOR COMMENTS ONLY
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Draft Indian Standard

PIPE NUTS — SPECIFICATION

[*Third Revision of IS 3468*]

ICS 21.060.20

General Engineering and Fasteners Standards Sectional Committee, PGD 37	**Last Date of Comments: 05.02.2022**

FOREWORD

This draft Indian Standard (Third Revision) will be adopted by the Bureau of Indian Standards, after the draft finalized by the General Engineering and Fasteners Standards Sectional Committee after the approval by the Production and General Engineering Division Council.

This standard was originally published in 1966 and subsequently revised in 1975. The second revision was carried out in 1991 taking assistance from DIN 431 : 1982 'Pipe nuts with thread in accordance with DIN ISO 228 Part 1 'Pipe threads where pressure tight joints are not made on the threads: Part 1 Designation, dimensions and tolerances' issued by Deutsches Institut für Normung. During second revision, the following changes were made:

a) Reference to IS 554 : 1985 'Dimensions for pipe threads where pressure tight joints are required on the threads (*third revision*)' has been deleted since pipe nuts with such threads are not used.
b) Width across flat dimension has been changed for sizes G 1/8, G 1/4, G 1/2 and G 5/8 from 19, 22, 32 and 32 mm to 18, 21, 34 and 34 mm respectively to be in line with IS 9519 : 1980 'Dimensions for width across flats for hexagonal head bolts and nuts'. These sizes with old across flat dimensions shall be gradually phased out of production and use.
c) Contents of the standard have been revised and aligned with the latest versions of basic standards related to fasteners.

This revision is taken up to align with the changes in the international practices in the industry where the following changes have been made:

a. The mechanical properties have been updated based on the latest international practices and more surface finish requirements are added

b. The designation of pipe nuts are is given with better explanation
c. The width of the nuts (m(h15)) is changed as per international practices

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, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'.

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PIPE NUTS — SPECIFICATION

[*Third Revision of IS 3468*]

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1 SCOPE

This standard covers the requirements for pipe nuts in the size range G 1/8 to G 6 (hexagon and octagon) with thread as in IS 2643/ISO 228-1 and of product grades B and C.

2 REFERENCES

2.1 The standards listed below contain provisions which, through reference in this text, constitute provisions 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 listed below:

IS No.	*Title*
IS 1367 : Part 1 : 2014/ ISO 8992 : 2005	Technical supply conditions for threaded steel fasteners Part 1 general requirements for bolts screws studs and nuts (Fourth Revision)
IS 1367 (Part 2): 2002/ISO 4759-1:2000	Technical supply conditions for threaded steel fasteners Part 2 tolerances for fasteners — Bolts screws studs and nuts — Product grades A, B and C (Third Revision)
1367 (Part 7) : 1980	Technical supply conditions for threaded steel fasteners Part 7 mechanical properties and test methods for nuts without specified proof loads (Second Revision)
IS 1367 (Part 10) : 2002/ISO 6157-2:1995	Technical supply conditions for threaded steel fasteners Part 10 surface discontinuities — Nuts (Third Revision)
IS 1367 (Part 11) : 2020/ISO 4042 : 2018	Technical Supply Conditions for Threaded Steel Fasteners Part 11 Electroplated Coating Systems (Fourth Revision)
IS 1367 (Part 13) : 2020/ISO 10684 : 2004	Technical Supply Conditions for Threaded Steel Fasteners Part 13 Hot Dip Galvanized Coatings on Threaded Fasteners (Third Revision)
IS 1367 (Part 14 : Sec 2) : 2018/ISO 3506-2 : 2009	Technical Supply Conditions for Threaded Steel Fasteners Part 14 Mechanical Properties of Corrosion-resistant Stainless steel Fasteners Section 2 Nuts (Fourth Revision)
IS 1367 (Part 17) : 2005/ISO 3269:2000	Technical supply conditions for threaded steel fasteners Part 17 inspections sampling and acceptance procedure (Fourth Revision)
IS 1367 (Part 18) : 1996	Industrial fasteners — Threaded steel fasteners — Technical supply conditions Part 18 packaging Third Revision

IS/ISO 10683 : 2018	Fasteners — Non-Electrolytically Applied Zinc Flake Coating Systems
2614 : 1969	Methods for sampling of fasteners (first revision)
IS 2643 : 2005/ISO 228-1:2000	Pipe threads where pressure - Tight joints are not made on the threads — Dimensions tolerances and designation (Third Revision)
IS 9519 : 2005	Fasteners — Hexagon products - Width across flats First Revision

3 SPECIFICATION AND REFERENCE STANDARDS

3.1 Material and Mechanical properties

The material and mechanical properties of the pipe nuts shall be as specified in **Table 1**.

Table 1 Technical delivery conditions

<table>
<tr><td>Material</td><td></td><td>Steel</td><td>Stainless steel</td><td>Nonferrous metal Brass</td></tr>
<tr><td>General requirements</td><td>As specified in</td><td colspan="3">IS 1367 : Part 1 : 2014/ ISO 8992 : 2005</td></tr>
<tr><td>Thread</td><td>As specified in</td><td colspan="3">IS 2643 : 2005/ISO 228-1:2000</td></tr>
<tr><td rowspan="2">Mechanical properties</td><td>Property class[1])</td><td>14H</td><td>A 2-50</td><td rowspan="2">Minimum tensile strength 300 MPa</td></tr>
<tr><td>As specified in</td><td>IS 1367 (Part 7) : 1980</td><td>IS 1367 (Part 14 : Sec 2) : 2018/ISO 3506-2 : 2009</td></tr>
<tr><td rowspan="2">Limit deviations and geometrical tolerances</td><td>Product grade</td><td colspan="3">B for type B and C for type A</td></tr>
<tr><td>As specified in</td><td colspan="3">IS 1367 (Part 2): 2002/ISO 4759-1:2000</td></tr>
<tr><td colspan="2" rowspan="2">Surface finish</td><td colspan="3">As processed. Plain Plain</td></tr>
<tr><td colspan="3">IS 1367 (Part 11) : 2020/ISO 4042 : 2018 applies with regard to electroplating.
IS/ISO 10683 : 2018 applies with regard to zinc flake coatings.
IS 1367 (Part 13) : 2020/ISO 10684 : 2004 applies with regard to hot-dip galvanizing.
IS 1367 (Part 10) : 2002/ISO 6157-2:1995 applies with regard to surface discontinuities.</td></tr>
<tr><td colspan="2">Acceptance inspection</td><td colspan="3">IS 1367 (Part 17) : 2005/ISO 3269:2000 applies with regard to acceptance inspection.</td></tr>
<tr><td colspan="5">[1]) Where nuts are to be made of other materials (except for malleable iron) or comply with other property classes, these shall be selected based on the relevant standards.</td></tr>
</table>

3.2 The dimensions and the shapes of the nuts shall be as given in **Fig.1** and **Table 2**.

4 DESIGNATION

4.1 The pipe nuts shall be designated by nomenclature, thread size and number of this standard.

4.1.1 A pipe nut of thread size G6, Type A, of property class 14H shall be designated as:

Pipe Nut A - G6 - 14H IS 3468

4.1.2 The designation of sizes G 1/8, G 1/4, G 1/2 and G 5/8 pipe nuts shall also include the width across flats.

EXAMPLE:

Designation of a size G 1/2 pipe nut, type A, of property class 14H and with a width across flats of 34 mm (SW34):

Pipe Nut – A – G 1/2 – SW34 – 14H IS 3468

4.2 When the pipe nuts are manufactured from stainless steel or brass, the word 'stainless steel' or 'Brass' shall be added at the end of the designation.

4.2.1 A pipe nut of thread size G 3/8 and made from brass shall be designated as:

Pipe Nut G 3/8 — IS 3468 — Brass

5 SAMPLING

The sampling and criteria of acceptance shall be in accordance with IS 2614 : 1969.

6 GENERAL REQUIREMENTS

6.1 With respect to surface discontinuities, the pipe nuts shall conform to IS 1367 (Part 10) : 2002/ISO 6157-2:1995.

6.2 In respect of requirements not covered in this standard, the nuts shall conform to IS 1367 (Part 1) : 2014/ISO 8992 : 2005.

7 MARKING AND MODE OF DELIVERY

7.1 Marking of the pipe nuts and the mode of delivery shall be in accordance with IS 1367 (Part 18) : 1996.

7.2 *BIS Certification Marking*

7.2.1 The product may also be marked with the Standard Mark.

7.2.1.1 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the BIS Act, 2016 and the Rules and Regulations framed thereunder, and the products may be marked with the standard mark.

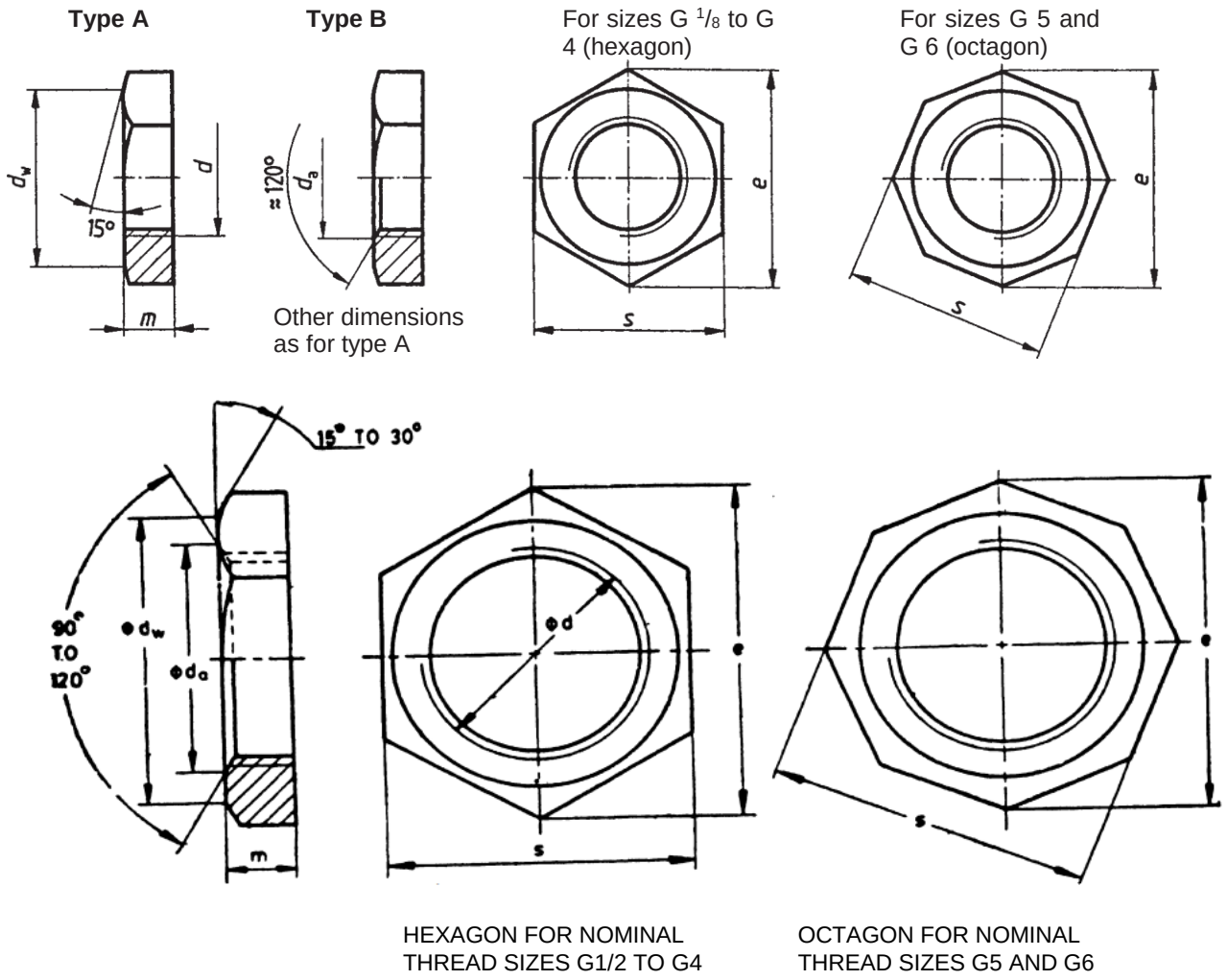

Fig 1: Nut dimensions (types A and B) (notation)

Table 2 Dimensions for Pipe Nuts
(*Clause* 3.2)
All dimensions in millimetres.

Thread Size d	d_a	d_w Min	e Min	m(h15)		S	
				Min	Max[1)]	Max	Min
G 1/8	10.5	16.5	19.85	6	6.48	18[2)]	17.57
G 1/4	14.2	19.1	22.78	6	6.48	21[2)]	20.16
G 3/8	18	24.8	29.56	7	7.58	27	26.16
G 1/2	22.6	31.3	37.29	8	8.58	34[2)]	33
(G 5/8)	24.7	31.3	37.29	8	8.58	34[2)]	33
G 3/4	28.6	32.3	39.55	9	9.58	36	34
G 7/8	32.6	38	45.20	9	9.58	41	40
G 1	35.9	42.8	50.85	10	10.58	46	45
(G 1 1/8)	40.9	46.5	55.37	10	10.58	50	49
G 1 1/4	45.3	51.1	60.79	11	11.7	55	53.8
G 1 1/2	51.6	55.9	66.44	12	12.7	60	58.8
(G 1 3/4)	58	64.7	76.93	13	13.7	70	68.1
G 2	64.4	69.4	82.60	13	13.7	75	73.1
(G 2 1/4)	71	78.7	93.56	16	16.7	85	82.8
G 2 1/2	81.2	88.2	104.86	16	16.7	95	92.8
G 3	94.9	97.7	116.16	19	19.84	105	102.8
G 4	122	125.9	149.72	22	22.84	135	132.5
G 5	149.5	154.4	183.06	22	22.84	165	162.5
G 6	177	176.1	209.5	25	25.84	190	185.4

NOTE — Sizes shown within brackets are of second preference
1) The maximum size applies for type B nuts. In the case of type A nuts, *m* is to be larger by a machining allowance.
2) The width across flats shall be included in the designation (cf. clause 4.1.1).