***भारतीय मानक***

***Indian Standard***

 **IS 3468 : 2024**

**पाइप नट — विशिष्टि**

*(तीसरा पुनरीक्षण*)

**Pipe Nuts — Specification**

( *Third Revision )*

ICS 21.060.20

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भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

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**March 2024 Price Group X**

# General Engineering and Fasteners Standards Sectional Committee, PGD 37

## FOREWORD

This Indian Standard (Third 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 originally published in 1966 and subsequently revised in 1975 and 1991. This third revision has been taken up to keep pace with the latest technological developments and international practices. In this revision following major changes have been made:

 a) The various requirements of pipe nuts have been updated based on the latest international practices(*see* Table 1);
 b) The designation of pipe nuts have been specified with better explanation;
 c) Changes have been made in the table on dimensions of pipe nuts; and
 d) References have been updated.

In the preparation of this standard, considerable assistance has been derived from DIN 431 : 2013.

The composition of the committee, responsible for the formulation of this standard is given at 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, 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*

**PIPE NUTS — SPECIFICATION**

(*Third Revision*)

## **SCOPE**

This standard specifies the requirements for pipe nuts in the size range G 1/8 to G 6 (hexagon and octagon) with threads as specified in IS 2643 and of product grades B and C.

## **REFERENCES**

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*) |
| IS 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 with specified grades and property classes (*fifth 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 — Technicalsupply conditions: Part 18 Packaging (*third 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/ISO 272 : 1982 | Fasteners — Hexagon products — Width across flats (*first revision*) |
| IS/ISO 10683 : 2018 | Fasteners — Non-electrolytically applied zinc flake coating systems |

**3 TYPES**

Pipe nuts shall be of the following 2 types:

|  |  |
| --- | --- |
| a) Type 1 : | Unchamfered pipe nuts |
| b) Type 2 : | Chamfered pipe nuts |

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



 

 Type 1 (Unchamfered)Type 2 (Chamfered)

(Other dimensions are same as
Type 1)



 For sizes G1/8 to G4 (Hexagon) For sizes G5 to G6 (Octagon)

 FIG. 1 Nut Dimensions (Type 1 and Type 2)

**Table 1 Dimensions for Pipe Nuts**
 (*Clause* 4)
All dimensions are in millimetres

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl No.** | **ThreadSize** *d* | ***d*a***Max* | ***d*w** *Min* | ***e*** *Min* |  ***m*** |  |  ***S*** |
| *Max*1) *Min* | *Max* *Min* |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| i) | G 1/8 | 10.5 | 16.5 | 19.85  | 6.48 | 6 | 18 | 17.57 |
| ii) | G 1/4 | 14.2 | 19.1 | 22.78 | 6.48 | 6 | 21 | 20.16 |
| iii) | G 3/8 | 18 | 24.8 | 29.56 | 7.58 | 7 | 27 | 26.16 |
| iv) | G 1/2 | 22.6 | 31.3 | 37.29 | 8.58 | 8 | 34 | 33 |
| v) | (G 5/8) | 24.7 | 31.3 | 37.29 | 8.58 | 8 |  34 | 33 |
| vi) | G 3/4 | 28.6 | 32.3 | 39.55 | 9.58 | 9 | 36 | 34 |
| vii) | G 7/8 | 32.6 | 38 | 45.20 | 9.58 | 9 | 41 | 40 |
| viii) | G 1 | 35.9 | 42.8 | 50.85 | 10.58 | 10 | 46 | 45 |
| ix) | (G 1 1/8) | 40.9 | 46.5 | 55.37 | 10.58 | 10 | 50 | 49 |
| x) | G 1 1/4 | 45.3 | 51.1 | 60.79 | 11.70 | 11 | 55 | 53.8 |
| xi) | G 1 1/2 | 51.6 | 55.9 | 66.44 | 12.70 | 12 | 60 | 58.8 |
| xii) | (G 1 3/4) | 58 | 64.7 | 76.93 | 13.70 | 13 | 70 | 68.1 |
| xiii) | G 2 | 64.4 | 69.4 | 82.60 | 13.70 | 13 | 75 | 73.1 |
| xiv) | (G 2 1/4) | 71 | 78.7 | 93.56 | 16.70 | 16 | 85 | 82.8 |
| xv) | G 2 1/2 | 81.2 | 88.2 | 104.86 | 16.70 | 16 | 95 | 92.8 |
| xvi) | G 3 | 94.9 | 97.7 | 116.16 | 19.84 | 19 | 105 | 102.8 |
| xvii) | G 4 | 122 | 125.9 | 149.72 | 22.84 | 22 | 135 | 132.5 |
| xviii) | G 5 | 149.5 | 154.4 | 183.06 | 22.84 | 22 | 165 | 162.5 |
| xix) | G 6 | 177 | 176.1 | 209.5 | 25.84 | 25 | 190 | 185.4 |
| 1) The maximum size applies for type 2 nuts. In the case of type 1 nuts, *m* is to be larger by a machining allowance. NOTE — Sizes shown within brackets are of second preference. |

## **5 REQUIREMENTS**

The various requirements of the pipe nuts shall be as specified in Table 2.

**Table 2 Requirements** **of Pipe Nuts
(***Clause* 5**)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Material** | **Steel** | **Stainless Steel** | **Non-ferrous Metal** |
|  General requirements | As specified in | IS 1367 (Part 1) |
|  Thread | As specified in | IS 2643 |
|  Mechanical properties | Grade  | 14H | A2  | Brass having minimum tensile strength 300 MPa |
| As specified in | IS 1367 (Part 7) | IS 1367 (Part14/Sec 2)  |
| Limit deviations and geometrical tolerances  | Product grade | C for type 1 and B for type 2 |
| As specified in | IS 1367 (Part 2) |
|  Surface finish  | As specified in | As processed (no coating)Electroplated coatingsas specified in IS 1367 (Part 11) Non-electrolytically applied zinc flake coatings as specified in IS 10683Hot dip galvanized coatings as specified in IS 1367 (Part 13)Additional requirements or other surface finishes or coatings shall be agreed between the supplier and the customer  | Clean and bright and/or passivated | As processed (no coating) Electroplated coatingsas specified in IS 1367 (Part 11)  |
|  Surface condition |  Surface discontinuities as specified in IS 1367 (Part 10) |
|  Acceptance inspection | As specified in |  IS 1367 (Part 17)  |

**6 DESIGNATION**

**6.1** The pipe nuts shall be designated by type, thread size, property grade of material and IS No. of this standard.

*Example*:

A pipe nut of thread size G 6, type 1, and made up of steel of grade 14H shall be designated as:
 Pipe Nut — 1 — G 6 — 14H IS 3468

**6.2** When the pipe nuts are manufactured from brass, the word 'Brass' shall be added at the end of the designation.

*Example*:

 A pipe nut of thread size G 3/8, type 1 and made from brass shall be designated as:

 Pipe Nut — 1 — G 3/8 — Brass IS 3468

## **7 MARKING**

**7.1** Marking of the pipe nuts shall be in accordance with IS 1367 (Part 18).

**7.2****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 framed thereunder, and the products may be marked with the standard mark.

**ANNEX A**

( *Foreword* )

**COMMITTEE COMPOSITION**

General Engineering and Fasteners Standards Sectional Committee, PGD 37

|  |  |
| --- | --- |
| *Organization* | *Representatives(s)* |
| In Personal Capacity | SHRI N. SRINIVASA MURTHY (***Chairman***) |
| Asp Private Limited, Hawrah | SHRI VINOD SHARMA SHRI B. BHAUMIK (*Alternate*) |
| BEML Limited, Bengaluru | SHRI S. K.SAHA SHRI T. N. SRINIVAS (*Alternate* I) SHRI M. R. SENTHIL KUMAR (*Alternate* II) |
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| Bharat Heavy Electrical Limited, New Delhi | SHRI AVINASH S JOHN SHRI KALYAN A (*Alternate* I) SHRI LALIT KUMAR (*Alternate* II) |
| Bosch Limited, Bengaluru | SHRI KUMARASWAMY S. |
| CSIR - National Physical Laboratory, New Delhi | SHRI ANIL KUMAR SHRI GAUTAM MANDAL (*Alternate* I) NIDHI SINGH (*Alternate* II) |
| CSIR - National Aerospace Laboratories, Bengaluru | S RAVISHANKAR SHRI M S KAMLESHAIAH (*Alternate*) |
| Central Manufacturing Technology Institute, Bengaluru | ANIL KUMAR SHRI S K VERMA (*Alternate*) |
| Deepak Fasteners Limited, Ludhiana | SHRI SANJEEV KALRA SHRI DEEPAK KALRA (*Alternate* I) SHRI SUKHJEEVAN SINGH (*Alternate* II) |
| Directorate General of Quality Assurance, Ministry of Defence, Kanpur | SHRI J K YADAV SHRI S L MEENA (*Alternate*) |
| Directorate General of Quality Assurance, Ministry of Defence, New Delhi | SHRI BIJENDRA KUMAR  |
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| Hindustan Fasteners Private Limited, Nasik | SHRI INDRAPAL |
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| MK Fasteners, Bengaluru | SHRI KUNTHAL AMEN |
| National Test House, Kolkata | SHRI S.P. ROY SHRI. YOGESH SINGH (*Alternate*) |
| Nexo Industries Private Limited, Ludhiana | MR. AMRIK SINGH |
| Pooja Forge Limited, Faridabad | SHRI JAGDISH K AGGARWAL |
| Precise Fasteners Private Limited, Mumbai | SHRI PARAG PRAKASH |
| Right Tight Fasteners Private Limited, Nashik | SHRI BALVEER SHRI AMARJEET SINGH (*Alternate*) |
| Size Control Gauges & Tools Private Limited, Pune | SHRI ATUL ASHOK DURVE |
| Sundram Fasteners Limited, Chennai | SHRI ATUL KUMAR AGRAWAL SHRI KANNADASAN B (*Alternate*) |
| Tata Motors Limited, Pune | SHRI SAGAR TALOLE SHRI R. R. KULKARNI (*Alternate*) |
| Unison Clamping Devices Limited, Pune | SHRI PANDURANG KALLAPPA SAWANT SHRI VIKRAM P. SAWANT (*Alternate*) |
| In Personal Capacity | SHRI MURTHY |
| BIS Directorate General | SHRI RAJEEV RANJAN SINGH, SCIENTIST ‘F’ AND HEAD (PGD)[ REPRESENTING DIRECTOR GENERAL ( *Ex-officio*) ] |
| *Member Secretary*SHRI MONARCH JOSHISCIENTIST ‘B’ (PGD) BIS |