भारतीय मानक

Indian Standard

IS 13153 : 2024
ISO 8279 : 2008

एयरोस्पेस — नट, हेक्सागोनल, सादा, सामान्य ऊंचाई, फ्लैटों में सामान्य, एमजे थ्रेड्स के साथ, वर्गीकरण: 600 एमपीए (पररवेश के तापमान पर)/120 ºC, 600 एमपीए (पररवेश के तापमान पर)/235 ºC, 900 एमपीए (पररवेश पर) तापमान)/425 ºC, 1 100 एमपीए (पररवेश के तापमान पर)/235 ºC, 1 100 एमपीए (पररवेश के तापमान पर)/ 315 ºC, 1 100 एमपीए (पररवेश के तापमान पर)/650 डिग्री सेल्ससयस, 1 210 एमपीए (पररवेश के तापमान पर)/730 ºC, 1 250 एमपीए (पररवेश के तापमान पर)/235 ºC और 1 550 एमपीए (पररवेश के तापमान पर)/600 ºC — आयाम

(पहला पुनरीक्षण)

Aerospace — Nuts, hexagonal, plain, normal height, normal across flats, with MJ threads, classifications: 600 MPa (at ambient temperature)/120 ºC, 600 MPa (at ambient temperature)/235 ºC, 900 MPa (at ambient temperature)/425 ºC, 1 100 MPa (at ambient temperature)/235 ºC, 1 100 MPa (at ambient temperature)/315 ºC, 1 100 MPa (at ambient temperature)/650 ºC, 1 210 MPa (at ambient temperature)/730 ºC, 1 250 MPa (at ambient temperature)/235 ºC and 1 550 MPa (at ambient temperature)/600 ºC — Dimensions

(First Revision)

ICS 49.030.30

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Air and Space Vehicles Sectional Committee, TED 14

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical to ISO 8279 : 2008 'Aerospace — Nuts, hexagonal, plain, normal height, normal across flats, with MJ threads, classifications: 600 MPa (at ambient temperature)/120 degrees C, 600 MPa (at ambient temperature)/235 degrees C, 900 MPa (at ambient temperature)/425 degrees C, 1 100 MPa (at ambient temperature)/235 degrees C, 1 100 MPa (at ambient temperature)/315 degrees C, 1 100 MPa (at ambient temperature)/650 degrees C, 1 210 MPa (at ambient temperature)/730 degrees C, 1 250 MPa (at ambient temperature)/235 degrees C and 1 550 MPa (at ambient temperature)/600 degrees C — Dimensions' issued by International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendation of the Air and Space Vehicles Sectional Committee and approval of the Transport Engineering Division Council.

This standard was first published in 1991. During formulation of IS 13153 : 1991, assistance was derived from ISO 8279 : 1985. First revision of this standard is undertaken to align it with the latest version of ISO 8279 : 2008.

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'; and
b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective place, are listed below along with it their degree of equivalence for the editions indicated. For undated references, the latest editions of the referenced document applies, including any corrigenda and amendment:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 245 Aerospace — Lockwire — Diameters	IS 6725 : 2008/ISO 245 : 1998 Aerospace — Lockwire — Diameters (*first revision*)	Identical
ISO 5855-2 : 1999 Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts	IS 10980 (Part 2) : 2014/ISO 5855-2 : 1999 Aerospace — MJ threads: Part 2 Limit dimensions for bolts and nuts (*first revision*)	Identical
ISO 8788 : 2000 Aerospace — Nuts, metric — Tolerances of form and position	IS 15192 : 2024/ISO 8788 : 2020 Aerospace — Nuts — Tolerances of form and position (*under prepration*)	Identical

(*Continued on third cover*)

Introduction

The dimensions specified in this International Standard have been determined to satisfy the requirements of the procurement specification ISO 9139.

Indian Standard

AEROSPACE — NUTS, HEXAGONAL, PLAIN, NORMAL HEIGHT, NORMAL ACROSS FLATS, WITH MJ THREADS, CLASSIFICATIONS: 600 MPA (AT AMBIENT TEMPERATURE)/120 ºC, 600 MPA (AT AMBIENT TEMPERATURE)/235 ºC, 900 MPA (AT AMBIENT TEMPERATURE)/425 ºC, 1 100 MPA (AT AMBIENT TEMPERATURE)/235 ºC, 1 100 MPA (AT AMBIENT TEMPERATURE)/315 ºC, 1 100 MPA (AT AMBIENT TEMPERATURE)/650 ºC, 1 210 MPA (AT AMBIENT TEMPERATURE)/730 ºC, 1 250 MPA (AT AMBIENT TEMPERATURE)/235 ºC AND 1 550 MPA (AT AMBIENT TEMPERATURE)/600 ºC — DIMENSIONS

(First Revision)

1 Scope

This International Standard specifies the dimensions of plain, hexagonal nuts, of normal height, normal across flats, with MJ threads, of classifications: 600 MPa[1)]/120 °C[2)], 600 MPa[1)]/235 °C[2)], 900 MPa[1)]/425 °C[2)], 1 100 MPa[1)]/235 °C[2)], 1 100 MPa[1)]/315 °C[2)], 1 100 MPa[1)]/650 °C[2)], 1 210 MPa[1)]/730 °C[2)], 1 250 MPa[1)]/235 °C[2)] and 1 550 MPa[1)]/600 °C[2)].

Nuts provided with holes are intended to be used with lockwire in conformity with ISO 245.

This International Standard is only applicable for the compilation of aerospace product standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 245, *Aerospace — Lockwire — Diameters*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts*

ISO 8788, *Aerospace — Nuts, metric — Tolerances of form and position*

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1) Corresponds to the minimum tensile stress that the nut is able to withstand at ambient temperature, without breaking or cracking, when tested with a bolt of a higher strength class.

2) Maximum temperature that the nut is able to withstand, without permanent alteration to its original characteristics, after ambient temperature has been restored. The maximum temperature is conditioned by the material or by the surface treatment.

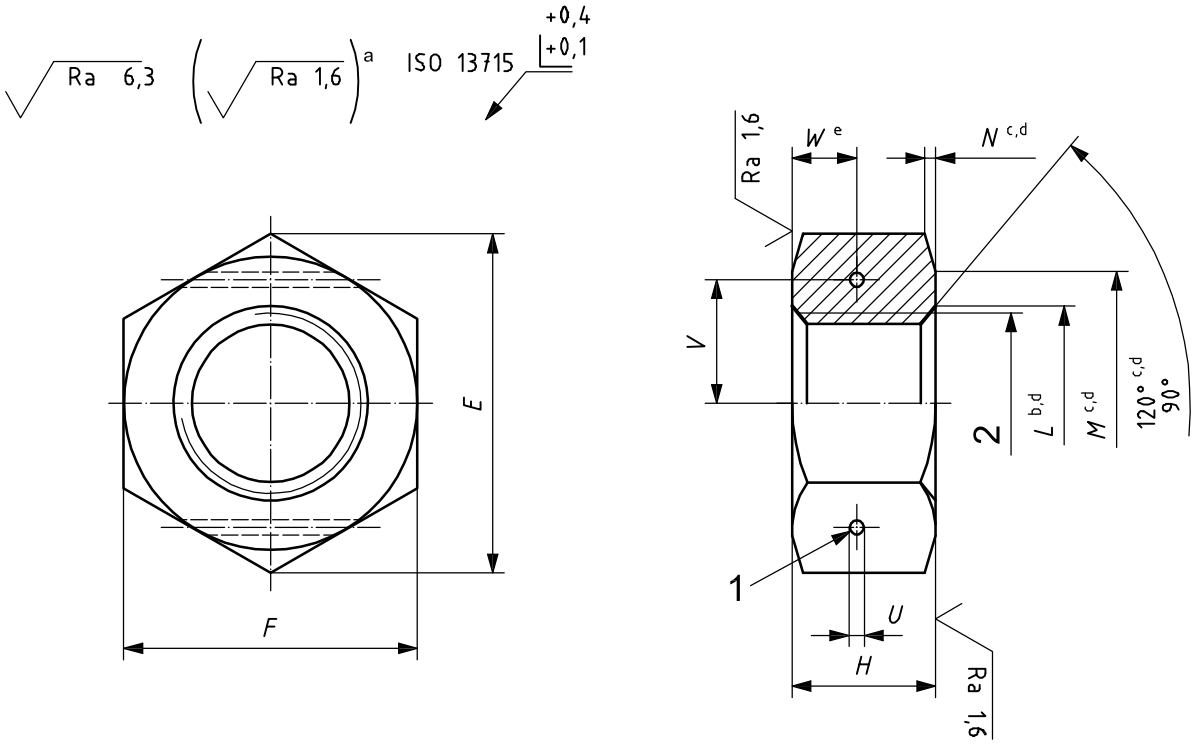
3 Configuration and dimensions

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres.

They apply after any surface coating(s), but before the application of any lubricant.

Dimensions in millimetres



Tolerances of form and position shall conform to those specified in ISO 8788. Details of form not stated are left to the manufacturer's discretion.

Key

1 two holes diameter U, optional

2 thread

a These values, in micrometres, apply before any surface coating(s) is(are) applied. The values do not apply to threads whose surface texture will be as achieved by the usual manufacturing methods.

b All forms of entry (chamfer or radius) permissible within these limiting dimensions.

c Form of contour, within limiting dimensions, is left to the manufacturer's discretion. Diameter M may be tangential to, but shall not intrude on, the flats.

d To both faces.

e From one face.

Figure 1

Table 1

Dia-meter code	Thread [a]	*L*		*M*	*U*	*E*	*F*		*H*	*N*		*V*	*W*	Lockwire diameter[b]
		nom.	tol.	min.	H13	min.	nom.	tol.	h14	nom.	tol.	± 0,2	min.	
020	MJ2 × 0,4-4H6H	2,2	$^{+0,6}_{0}$	3,4	—	4,2	4	h12	1,6	0,4	$^{0}_{-2}$	—	—	—
025	MJ2,5 × 0,45-4H6H	2,7		4,4		5,3	5		2					
030	MJ3 × 0,5-4H6H	3,2		5,4		6,5	6		2,4					
040	MJ4 × 0,7-4H6H	4,2		6,4		7,6	7		3,2	0,5	$^{0}_{-3}$			
050	MJ5 × 0,8-4H6H	5,2		7,4		8,7	8		4					
060	MJ6 × 1-4H5H	6,3	$^{+0,8}_{0}$	9,3	1	10,9	10	h13	4,8			3,9	2	0,8
070	MJ7 × 1-4H5H	7,3		10,2		12	11		5,6			4,4	2,4	
080	MJ8 × 1-4H5H	8,3		12,2		14,3	13		6,4			5	2,8	
100	MJ10 × 1,25-4H5H	10,3		16	1,5	18,9	17		8	0,6		6,9	3,6	1,25
120	MJ12 × 1,25-4H5H	12,3		18		21,1	19		9,6			8	4,4	
140	MJ14 × 1,5-4H5H	14,4		21		24,5	22		11,2			9,6	5,1	
160	MJ16 × 1,5-4H5H	16,4		23		26,8	24		12,8			10,7	5,9	
180	MJ18 × 1,5-4H5H	18,4		26		30,2	27		14,4			12	6,7	
200	MJ20 × 1,5-4H5H	20,4		29		33,6	30		16			13,4	7,5	
220	MJ22 × 1,5-4H5H	22,4		30,9		35,8	32		17,6			14,4	8,3	
240	MJ24 × 2-4H5H	24,5		34,9		40,4	36		19,2			16,1	9,1	

[a] In accordance with ISO 5855-2.

[b] For information, in conformity with ISO 245.

Bibliography

[1] ISO 9139, *Aerospace — Nuts, plain or slotted (castellated) — Procurement specification*

[2] ISO 13715, *Technical drawings — Edges of undefined shape — Vocabulary and indications*

(*Continued from second cover*)

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. The Bureau of Indian Standards shall not be held responsible for identifying any or all such patent rights.

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.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 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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Review of Indian Standards

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 website-www.bis.gov.in or www.standardsbis.in.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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