

# International Standard



# 8279

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## Aerospace — Plain hexagon nuts with strength classification 1 100 MPa and maximum operating temperature 235 °C

*Aéronautique et espace — Écrous hexagonaux ordinaires de classe de résistance 1 100 MPa pour température maximale d'utilisation 235 °C*

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Descriptors : aircraft industry, aircraft equipment, fasteners, nuts (fasteners), hexagonal nuts, specifications, dimensions.

Price based on 3 pages

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8279 was prepared by Technical Committee ISO/TC 20,  
*Aircraft and space vehicles.*

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# Aerospace — Plain hexagon nuts with strength classification 1 100 MPa and maximum operating temperature 235 °C

## 0 Introduction

This International Standard is confined to those dimensional characteristics accepted to date. Subclauses 4.5, 4.6 and 4.7 will be completed when the relevant International Standards become available.

Clauses relating to "Designation" and "Marking" will be added later.

## 1 Scope

This International Standard specifies the requirements for hexagonal plain nuts, with or without lockwire hole.

## 2 Field of application

These nuts are intended for use in aircraft assemblies, in which the fasteners are mainly subjected to tensile loads.

They are intended to be used with threaded parts of 1 100 MPa<sup>1)</sup> tensile strength classification, and lockwire in conformity with ISO/R 245 (form B nuts only).

The cadmium plating restricts the use for these nuts to a temperature not exceeding 235 °C.

## 3 References

ISO 128, *Technical drawings — General principles of presentation*.

ISO/R 245, *Aircraft lockwire*.

ISO 286/1, *ISO system of limits and fits — Part 1: Bases for tolerances, deviations and fits*.<sup>2)</sup>

ISO 468, *Surface roughness — Parameters, their values and general rules for specifying requirements*.

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerances of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings*.

ISO 1302, *Technical drawings — Method of indicating surface texture on drawings*.

ISO 5855/1, *Aerospace construction — MJ threads — Part 1: Basic profile*.

ISO 5855/2, *Aerospace construction — MJ threads — Part 2: Dimensions for bolts and nuts*.

## 4 Required characteristics

### 4.1 Configuration

Configuration shall be in accordance with the figure, which is presented in conformity with ISO 128.

### 4.2 Dimensions

All linear dimensions are expressed in millimetres; they shall conform to those in the table and apply after cadmium plating.

Standard tolerance symbols and values for linear dimensions are in conformity with ISO 286/1. Symbols for tolerances for form and position conform with ISO 1101.

### 4.3 Screw threads

MJ threads: ISO 5855.

### 4.4 Surface roughness

$R_a$  max., in micrometres,  $\sqrt[6.3]{\checkmark}$  ( $\checkmark$ ), in accordance with ISO 468 and ISO 1302. These values are applicable before cadmium plating.

This requirement does not apply to threads where the surface texture will be as achieved by normal methods of manufacture.

### 4.5 Material and relevant characteristics

Steel — see clause 0.

### 4.6 Surface treatment

Cadmium plated — see clause 0.

### 4.7 Procurement specification

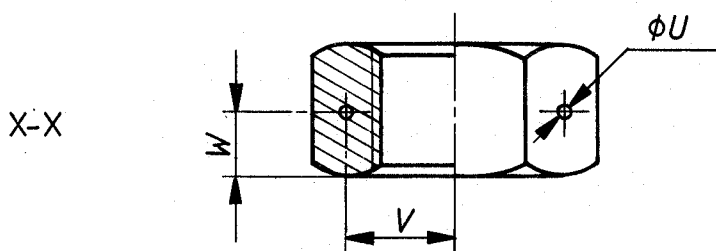
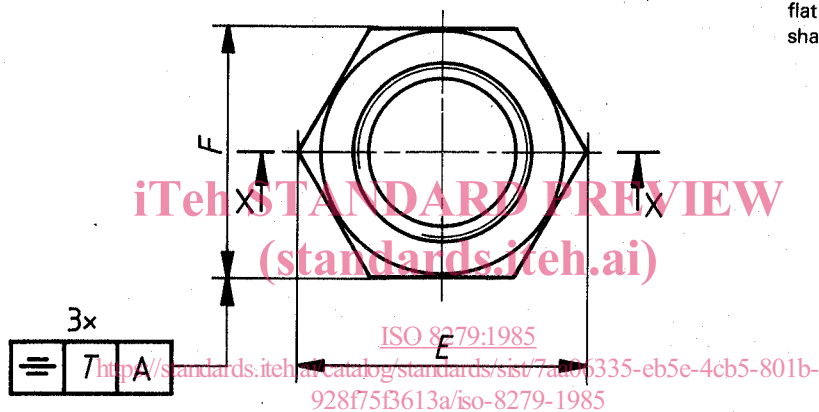
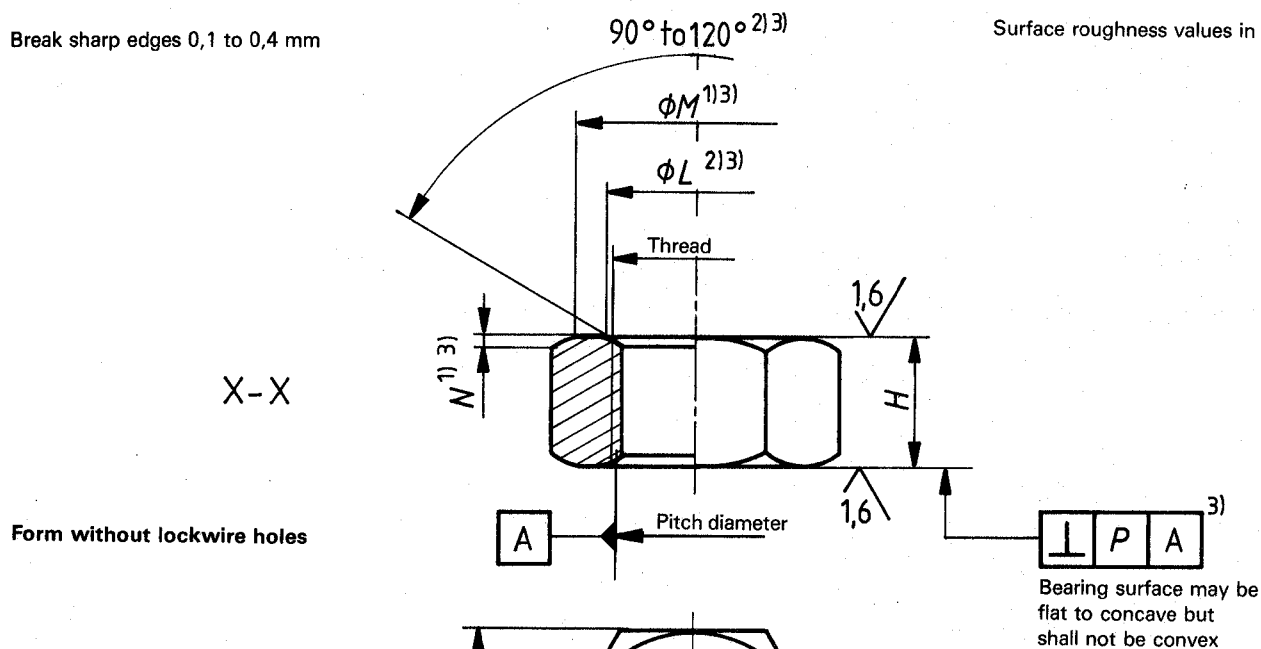
See clause 0.

1) This strength class applies at ambient temperature.

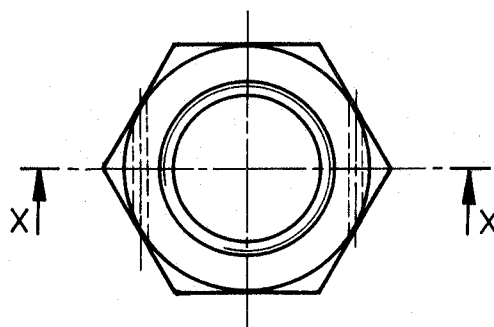
2) At present at the stage of draft. (Revision of ISO/R 286-1962.)

Break sharp edges 0,1 to 0,4 mm

Surface roughness values in micrometres



Form with lockwire holes  
(Dimensions otherwise as form without lockwire holes)



- 1) Form of contour, within limiting dimensions, at manufacturer's option.  
Flats may be tangential to but shall not intrude on  $\phi M$  min.
- 2) All forms of entry (chamfer or radius) optional within these limiting dimensions.
- 3) Applicable to both faces.

Figure — Configuration

Table — Dimensions, tolerances and masses

Dimensions and tolerances in millimetres

Size code	Thread	E min.	F		H	L		M min.	N		P	T	U	V ±0,2	W <sup>(1)</sup> min.	Mass kg/1 000		Diameter of lockwire <sup>(2)</sup> (ref.)
			4	5		max.	min.		max.	min.								
020	MJ2 × 0,4 – 4H6H	4,2	4		1,6	2,2	2,2	3,4	0,4	0,08	0,25		H13			0,15		
025	MJ2,5 × 0,45 – 4H6H	5,3	5		2,0	3,3	2,7	4,4	0,4	0,2			— 3)			0,3		— 3)
030	MJ3 × 0,5 – 4H6H	6,5	6	h12	2,4	3,8	3,2	5,4								0,5		
040	MJ4 × 0,7 – 4H6H	7,6	7		3,2	4,8	4,2	6,4								0,85		
050	MJ5 × 0,8 – 4H6H	8,7	8		4,0	5,8	5,2	7,4	0,5	0,10	0,3		0,7	3,4	1,6	1,3		0,5
060	MJ6 × 1 – 4H5H	10,9	10		4,8	7,1	6,3	9,3	0,5	0,2				4,2	2,0	2,4		
070	MJ7 × 1 – 4H5H	12,0	11		5,6	8,1	7,3	10,2			0,36		1,0	4,7	2,4	3,2		0,8
080	MJ8 × 1 – 4H5H	14,3	13		6,4	9,1	8,3	12,2						5,5	2,8	5,2		
100	MJ10 × 1,25 – 4H5H	18,9	17		8,0	11,1	10,3	16,0		0,13				7,2	3,6	11,5		
120	MJ12 × 1,25 – 4H5H	21,1	19		9,6	13,1	12,3	18,0						8,2	4,4	16,1		
140	MJ14 × 1,5 – 4H5H	24,5	22	h13	11,2	15,2	14,4	21,0	0,6	0,3				9,6	5,2	25		
160	MJ16 × 1,5 – 4H5H	26,8	24		12,8	17,2	16,4	23,0			0,43			10,7	6,0	33		1,25
180	MJ18 × 1,5 – 4H5H	30,2	27		14,4	19,2	18,4	26,0						12,0	6,8	46		
200	MJ20 × 1,5 – 4H5H	33,6	30		16,0	21,2	20,4	29,0						13,4	7,6	62		
220	MJ22 × 1,5 – 4H5H	35,8	32		17,6	23,2	22,4	30,9						14,4	8,4	75		
240	MJ24 × 2 – 4H5H	40,4	36		19,2	25,3	24,5	34,9			0,52			16,1	9,1	108		

1) From either face.  
 2) See ISO/R 245.  
 3) Lockwire hole not provided for these diameters.