



BSI Standards Publication

**Aerospace series — Nuts,  
hexagon, self-locking by  
plastic ring, normal height,  
normal across flats, in corrosion  
resisting steel, passivated —  
Classification: 900 MPa (at  
ambient temperature) / 120 °C**

**National foreword**

This British Standard is the UK implementation of EN 4297:2017.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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EUROPEAN STANDARD

EN 4297

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2017

ICS 49.030.30

English Version

**Aerospace series - Nuts, hexagon, self-locking by plastic ring, normal height, normal across flats, in corrosion resisting steel, passivated - Classification: 900 MPa (at ambient temperature) / 120 °C**

Série aérospatiale - Écrous hexagonaux, à freinage interne par bague plastique, hauteur normale, surplats normaux, en acier résistant à la corrosion, passivés - Classification: 900 MPa (à température ambiante) / 120 °C

Luft- und Raumfahrt - Sechskantmuttern, selbstsichernd mit Plastikring, mit normaler Schlüsselweite, aus korrosionsbeständigem Stahl, passiviert - Klasse: 900 MPa (bei Raumtemperatur) / 120 °C

This European Standard was approved by CEN on 11 March 2016.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 4297:2017) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this European Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

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## 1 Scope

This European Standard specifies the characteristics of hexagonal nuts, self-locking by plastic ring, normal height, normal across flats, in corrosion resisting steel, passivated.

Classification: 900 MPa <sup>1)</sup> / 120 °C <sup>2)</sup>.

## 2 Normative references

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

EN 2424, *Aerospace series — Marking of aerospace products*

EN 2516, *Aerospace series — Passivation of corrosion resisting steels and decontamination of nickel base alloys*

EN 9100, *Quality Management Systems - Requirements for Aviation, Space and Defense Organizations*

EN 9133, *Aerospace series - Quality management systems - Qualification procedure for aerospace standard parts*

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

ISO 5858, *Aerospace — Nuts, self-locking, with maximum operating temperature less than or equal to 425 degrees C — Procurement specification*

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

## 3 Required characteristics

### 3.1 Configuration - Dimensions - Masses

See Figure 1 and Table 1.

Dimensions and tolerances are expressed in millimetres and apply after surface treatment.

Details of form not stated are at the manufacturer's option.

### 3.2 Tolerances of form and position

ISO 8788.

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1) Corresponds to the minimum tensile stress which 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 plastic ring.

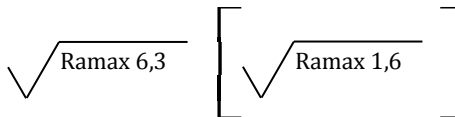
### 3.3 Materials

Threaded element: FE-PA1801.

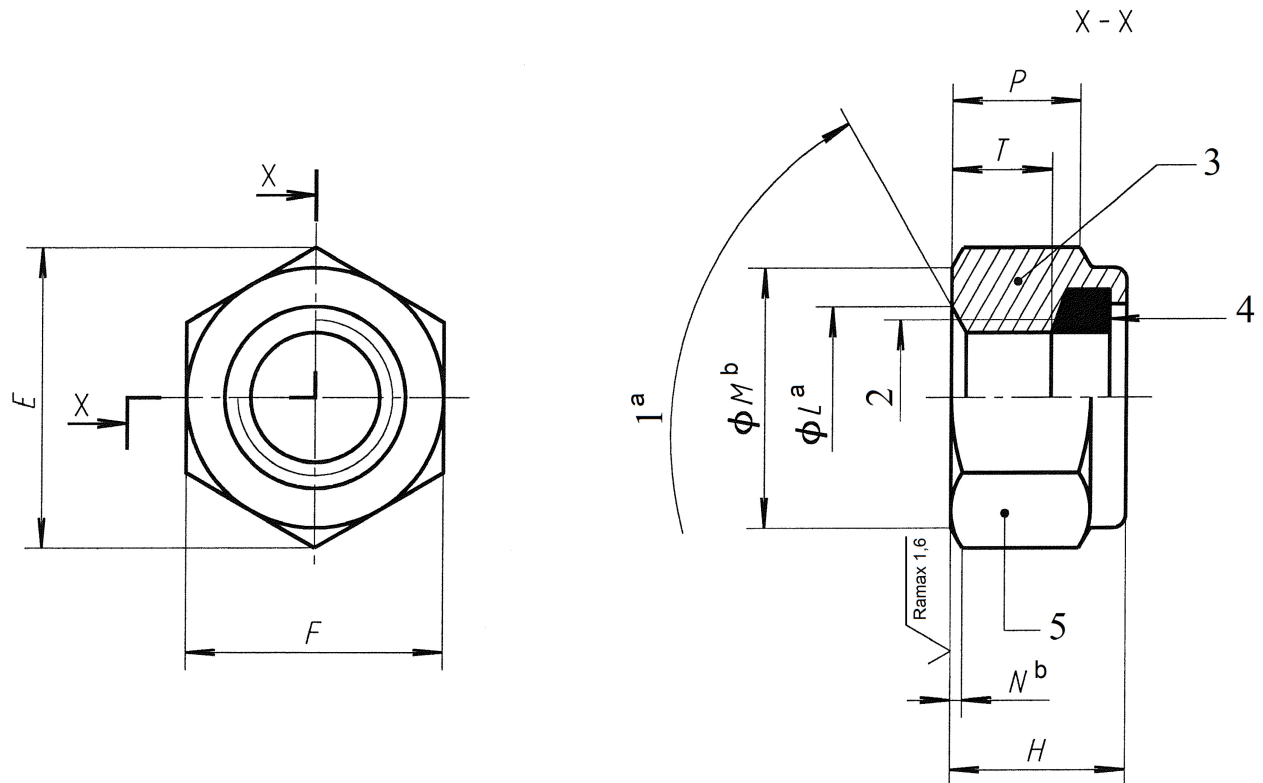
Plastic ring: polyamide 6.6.

### 3.4 Surface treatment

EN 2516, process class appropriate to the material

 These values in micrometres apply before surface treatment. They do not apply to threads the surface texture of which will be as achieved by usual manufacturing methods.

Remove sharp edges 0,1 to 0,4



#### Key

- 1 90° to 120°<sup>a</sup>
- 2 Thread
- 3 Threaded element
- 4 Plastic ring
- 5 Marking

<sup>a</sup> All forms of entry (chamfer or radius) option within these limiting dimensions.

<sup>b</sup> Form of contour within these limiting dimensions is at the manufacturer's option. Diameter *M* may be tangential to, but shall not intrude on the flats.

Figure 1

**Table 1**

Diameter code	Thread <sup>a</sup>	E		F		H		ØL		ØM	N		P	T	Mass <sup>b</sup>
		min.	Nom.	Tol.	max.	Nom.	Tol.	min.	max.		min.	max.			
020	MJ2x0,4-4H6H	4,2	4	h12	3,2	2,2	+0,6 0	3,4	0,4	0,2	1	1,3	0,16		
025	MJ2,5x0,45-4H6H	5,3	5		4	2,7		4,4							
030	MJ3x0,5-4H6H	6,5	6		4,5	3,2		5,4							
040	MJ4x0,7-4H6H	7,6	7		5,6	4,2		6,4	0,5						
050	MJ5x0,8-4H6H	8,7	8		6,2	5,2		7,4							
060	MJ6x1-4H5H	10,9	10	h13	7,5	6,3	+0,8 0	9,3	0,5	0,3	4	3,9	2,66		
070	MJ7x1-4H5H	12	11		8,8	7,3		10,2							
080	MJ8x1-4H5H	14,3	13		10	8,3		12,2							
100	MJ10x1,25-4H5H	18,9	17		11,5	10,3		16	0,6						
120	MJ12x1,25-4H5H	21,1	19		13,8	12,3		18							
140	MJ14x1,5-4H5H	24,5	22		16,1	14,4		21							
160	MJ16x1,5-4H5H	26,8	24		18,4	16,4		23							
180	MJ18x1,5-4H5H	30,2	27		20,7	18,4		26							
200	MJ20x1,5-4H5H	33,6	30		23	20,4		29							
220	MJ22x1,5-4H5H	35,8	32		25,3	22,4		30,9							
240	MJ24x2-4H5H	40,4	36	27,6	24,5	34,9									

<sup>a</sup> In accordance with ISO 5855-2.

<sup>b</sup> Approximate values (kg/1 000 pieces), given for information purposes only.

## 4 Designation

EXAMPLE

**Description block**

**NUT**

**Identity**

**EN4297-050**

**block**

Number of this standard \_\_\_\_\_

Diameter code (see Table 1) \_\_\_\_\_

NOTE If necessary, the code I9005 shall be placed between the description block and the identity block.



## **5 Marking**

EN 2424, style N. See Figure 1.

## **6 Technical specification**

ISO 5858, except for:

- Approval of manufacturers: see EN 9100;
- Qualification of products: see EN 9133.





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### BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK