SLOVENSKI STANDARD
SIST ISO 7413:1996

01-april-1996

Ġestrobe matice, tip 1, vroļ e pocinkane, za jeklene konstrukcije (navoji z nadmero) - Razreda izdelave A in B - Trdnostna razreda 5,6 in 8

Hexagon nuts for structural bolting, style 1, hot-dip galvanized (oversize tapped) -- Product grades A and B -- Property classes 5, 6 and 8

Écrous hexagonaux galvanisés à chaud pour constructions métalliques (filetages majorés), style 1 -- Grades A et B -- Classes de qualité 5, 6 et 8

Ta slovenski standard je istoveten z: **ISO 7413:1984**

ICS:

21.060.20 Matice Nuts

SIST ISO 7413:1996 **en**

International Standard 7413

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

Hexagon nuts for structural bolting, style 1, hot-dip galvanized (oversize tapped) — Product grades A and B — Property classes 5, 6 and 8

Écrous hexagonaux galvanisés à chaud pour constructions métalliques (filetages majorés), style 1 — Grades A et B — Classes de qualité 5, 6 et 8

First edition — 1984-11-15

UDC 621.882.31 **Ref. No. ISO 7413-1984 (E)**

Descriptors : fasteners, nuts (fasteners), hexagonal nuts, specifications, dimensions, designation, marking.

Price based on 4 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. Every 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 7413 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

Printed in Switzerland

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0 Introduction

This International Standard is part of the complete ISO product standard series on hexagon drive fasteners. The series comprises:

a) hexagon head bolts (ISO 4014, ISO 4015 and ISO 4016);

b) hexagon head screws (ISO 4017 and ISO 4018);

c) hexagon nuts (ISO 4032, ISO 4033, ISO 4034, ISO 4035 and ISO 4036);

d) hexagon flanged bolts; [1)]

e) hexagon flanged screws; [1)]

f) hexagon flanged nuts (ISO 4161);

g) structural bolting (ISO 4775 and ISO 7411 to ISO 7417).

1 Scope and field of application

This International Standard gives specifications for hexagon nuts, style 1, with metric dimensions in property classes 5, 6 and 8, hot-dip galvanized in accordance with ISO 1461 and tapped oversize to tolerance class 6AX. This International Standard covers thread sizes from M10 up to and including M36, product grade A for sizes up to and including M16, and product grade B for sizes over M16.

If in special cases specifications other than those listed in this International Standard are required, they should be selected from existing International Standards, for example, ISO 261, ISO 898, ISO 965 and ISO 4759/1.

NOTE — Other hot-dip galvanized nuts with 6H threads may be supplied by agreement between the manufacturer and the purchaser.

2 References

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 898, *Mechanical properties of fasteners.*

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 1461, *Metallic coatings — Hot-dip galvanized coatings on fabricated ferrous products — Requirements.*

ISO 3269, *Fasteners — Acceptance inspection.*

ISO 4759/1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts, with thread diameters > 1,6 and < 150 mm and product grades A, B and C.*

1) These will form the subject of a future International Standard.

3 Dimensions

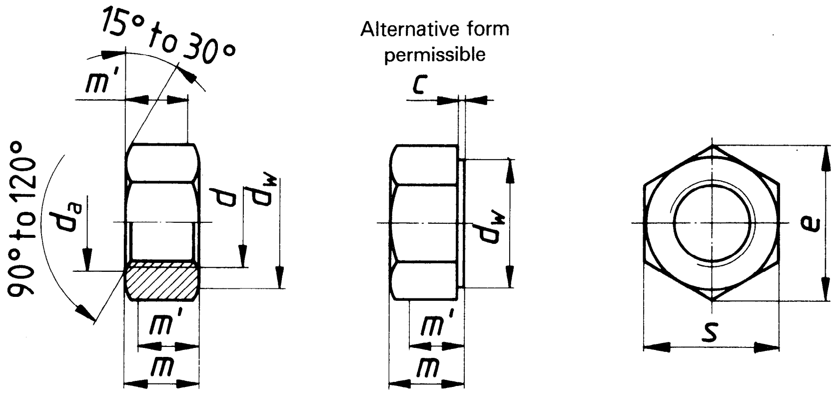

Table 1 — General dimensions

Dimensions in millimetres

Thread size, *d*		M10	M12	(M14)[2]	M16	M20	M24	M30	M36
P[1]		1,5	1,75	2	2	2,5	3	3,5	4
c	max.	0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8
d_a	min.	10	12	14	16	20	24	30	36
	max.	10,8	13	15,1	17,3	21,6	25,9	32,4	38,9
d_w	min.	14,6	16,6	19,6	22,5	27,7	33,2	42,7	51,1
e	min.	17,77	20,03	23,35	26,75	32,95	39,55	50,85	60,79
m	max.	8,4	10,8	12,8	14,8	18	21,5	25,6	31
	min.	8,04	10,37	12,1	14,1	16,9	20,2	24,3	29,4
m'	min.	6,43	8,3	9,68	11,28	13,52	16,16	19,44	23,52
s	max.	16	18	21	24	30	36	46	55
	min.	15,73	17,73	20,67	23,67	29,16	35	45	53,8

1) *P* = pitch of the thread

2) The thread size in brackets should be avoided if possible.

4 Specifications and reference standards

Table 2 — Specifications and reference standards

Material		Steel
Thread	Tolerance	6AX[1] (See annex also)
	International Standard	ISO 261
Mechanical properties[2]	Class	5-6-8
	International Standard	ISO 898/2
Tolerances	Product grade	A up to M16, B over M16
	International Standard	ISO 4759/1
Surface finish	Type	Hot-dip galvanized
	International Standard	ISO 1461
Acceptability		For acceptance procedure, see ISO 3269.

1) The nuts are oversize tapped. The thread tolerances for oversize tapped hot-dip galvanized nuts to ISO 1461 have been temporarily designated 6AX and the thread limits are included in the annex on a provisional basis, pending the adoption of this thread class, when it is anticipated it will be included in ISO 965.

2) For proof load values, see clause 5.

5 Proof load values — Tolerance class 6AX

Table 3 — Proof load values for tolerance class 6AX

Thread size d	Pitch of thread P mm	Nominal stress area of standard test mandrel A_s mm²	Property class		
			5	6	8
			Proof load, N		
M10	1,5	58,0	28 000	32 000	41 200
M12	1,75	84,3	43 000	48 900	59 800
M14	2	115	58 700	66 700	81 700
M16	2	157	80 000	91 100	111 500
M20	2,5	245	137 200	159 200	208 200
M24	3	353	197 600	229 500	300 000
M30	3,5	561	314 200	364 700	476 900
M36	4	817	457 500	531 000	694 500

NOTES

1 All other mechanical property requirements as ISO 898/2.

2 For methods of test, see ISO 898/2.

3 Based on the following proof load stresses:

Thread size d	Property class		
	5	6	8
	Proof load stress N/mm²		
M10	483	551	710
M12, M14, M16	510	580	710
M20, M24, M30, M36	560	650	850

6 Designation

Example for the designation of an oversize tapped hot-dip galvanized hexagon nut, style 1 of thread size d = M12 and property class 8:

Hexagon nut ISO 7413 - M12 - 8

7 Marking

7.1 Product

Nuts shall be marked in accordance with the requirements of ISO 898/2.

7.2 Packaging

The containers of all oversize tapped hot-dip galvanized hexagon nuts shall be marked:

Hot-dip galvanized nuts, style 1, oversize tapped to ISO 7413

Annex

Thread dimensions for hot-dip galvanized nuts tolerance class 6AX

This annex gives information on screw thread limits for hot-dip galvanized nuts with a tolerance class 6AX. The limits given in table 4 apply after the hot-dip galvanized coating has been applied.

Table 4 — Screw thread limits for tolerance class 6AX

Dimensions in millimetres

Thread size d	Major diameter		Pitch diameter		Minor diameter	
	max.	min.	max.	min.	max.	min.
M10	10,638	10,458	9,556	9,376	9,026	8,726
M12	12,676	12,476	11,413	11,213	10,791	10,455
M14	14,706	14,494	13,263	13,051	12,560	12,185
M16	16,756	16,544	15,313	15,101	14,610	14,235
M20	20,804	20,580	19,000	18,776	18,144	17,694
M24	24,931	24,666	22,766	22,501	21,702	21,202
M30	31,083	30,803	28,557	28,277	27,321	26,761
M36	37,189	36,889	34,302	34,002	32,870	32,270

NOTES

1 Nuts are tapped oversize to the above dimensions after galvanizing.

2 Based on a tolerance of:
350 µm for M10, M12 and M14;
400 µm for M16 and M20;
450 µm for M24;
550 µm for M30;
600 µm for M36.