UDC 621.882.343 : 621.3-213.34 : 622

March 1990

Triangular nuts for use with electrical equipment in mining

DIN 22425

Schlagwettergeschützte und explosionsgeschützte elektrische Betriebsmittel für den Bergbau; Dreikantmuttern

Supersedes April 1969 edition.

In keeping with current practice in standards published by the International Organization for Standardization (ISO), a comma has been used throughout as the decimal marker.

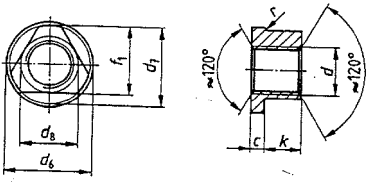
Dimensions in mm

1 Scope and field of application

This standard specifies dimensions and technical delivery conditions for triangular nuts designed for use in special locks as stipulated in the statutory regulations pertaining to electrical equipment for potentially explosive atmospheres in mining *) and to be used in bolt/nut assemblies as specified in DIN 22416.

2 Dimensions and designation

The nuts shall be countersunk on both sides down to the major thread diameter



Designation of an M10 triangular nut assigned to property class 5:

Triangular nut DIN 22425 – M10 – 5

*) *Bergverordnung über die Zulassung von schlagwettergeschützten und explosionsgeschützten elektrischen Betriebsmitteln* (German Regulation on the approval procedure for electrical equipment for use in potentially explosive atmospheres in mining).

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Table 1.

Thread size (d) [1]		M 4	M 5	M 6	M 8	M 10	M 12	M 16	M 20
P [2]		0,7	0,8	1	1,25	1,5	1,75	2	2,5
c	min.	1,9	1,9	1,9	2,2	2,7	3,4	3,9	4,9
	max.	2,1	2,1	2,1	2,4	2,9	3,6	4,1	5,1
d_6	min.	8,3	9,8	11,8	14,8	17,8	27,8	34,7	41,7
	max.	8,7	10,2	12,2	15,2	18,2	28,2	35,3	42,3
d_7	min.	7,4	9,4	11,4	13,9	16,9	23,9	29,9	35,9
	max.	7,6	9,6	11,6	14,1	17,1	24,1	30,1	36,1
d_8 [3]	min.	5,4	6,3	7,8	9,3	11,8	15,8	19,8	23,8
	max.	5,6	6,7	8,2	9,7	12,2	16,2	20,2	24,2
f_1	min.	6,3	7,8	9,55	11,55	14,3	19,8	24,8	29,8
	max.	6,5	8	9,75	11,75	14,5	20	25	30
k	min.	2,9	3,9	4,4	5,9	7,3	11,3	13,8	16,8
	max.	3,1	4,1	4,6	6,1	7,7	11,7	14,2	17,2
r	min.	0,1	0,1	0,2	0,4	0,4	0,9	0,9	0,9
	max.	0,3	0,3	0,4	0,6	0,6	1,1	1,1	1,1
Approx. mass (7,85 kg/dm³), per 1000 units, in kg		1,31	2,04	3,26	5,55	10,2	33,6	58,6	100

[1] Triangular nuts of size M 6 or above shall be given perference.
[2] P = pitch of thread.
[3] Auxiliary dimension for manufacturing triangular wrenches as specified in DIN 22417.

3 Technical delivery conditions

Table 2.

Material		Steel	Stainless steel	Non-ferrous metal
General requirements		DIN 267 Part 1		
Thread	Tolerance	6H		
	As specified in	DIN 13 Parts 13 and 15.		
Mechanical properties	Property class (material)	4 or higher	A2–50 [4]	CU4 [4] [5]
	As specified in	ISO 898 Part 2	DIN 267 Part 11	DIN 267 Part 18
Limit deviations and geometrical tolerances	Product grade	A		
	As specified in	ISO 4759 Part 1, or DIN 7168 (accuracy grade m) [6].		
Surface finish		Corrosion protection subject to agreement (e.g. electroplating as in DIN 267 Part 9).		

[4] Subject to agreement, use of other materials of at least the same strength is permitted.
[5] Light metals and light metal alloys are not permitted.
[6] Accuracy grade m shall apply for dimensions for which no tolerances have been specified in ISO 4759 Part 1.

4 Marking

Nuts of property classes higher than 5 shall be marked as specified in ISO 898 Part 2, stainless steel nuts and non-ferrous metal nuts, as specified in DIN 267 Parts 11 and 18 respectively.

Standards and other documents referred to

DIN 13 Part 13	ISO metric screw threads; series of preferred sizes for screws, bolts and nuts from 1 mm to 52 mm diameter and limits of sizes
DIN 13 Part 15	ISO metric screw threads; fundamental deviations and tolerances for screw threads of 1 mm diameter and larger
DIN 267 Part 1	Fasteners; technical delivery conditions; general requirements
DIN 267 Part 9	Fasteners; technical delivery conditions; electroplated components
DIN 267 Part 11	Fasteners; technical delivery conditions; stainless and acid resistant steel components (with addenda to ISO 3506)
DIN 267 Part 18	Fasteners; technical delivery conditions; non-ferrous metal components
DIN 7168	General tolerances for linear and angular dimensions and geometrical tolerances (not to be used for new designs)
DIN 22416	Electrical equipment for use in potentially explosive atmospheres in mining; assemblies with triangular nuts; safety requirements
DIN 22417	Electrical equipment for use in potentially explosive atmospheres in mining; triangular wrenches
ISO 898-2 : 1980	Mechanical properties of fasteners; nuts with specified proof load values
ISO 4759-1 : 1978	Tolerances for fasteners; bolts, screws and nuts with thread diameters from 1,6 to 150 mm and product grades A, B and C

Bergverordnung über die Zulassung von schlagwettergeschützten und explosionsgeschützten elektrischen Betriebsmitteln[7]).

Other relevant standard

DIN 22424 Electrical equipment for use in potentially explosive atmospheres in mining; triangular head bolts

Previous editions

DIN 22425: 04.55x, 04.89.

Amendments

In comparison with the April 1989 edition, data on the surface finish are no longer included in the standard designation.

International Patent Classification

E 21 F 17/00
F 16 B 37/00
F 16 B 41/00
H 02 B 1/12
H 01 H 9/04

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7) Obtainable from: *Verlag Glückauf GmbH*, Postfach 10 39 45, D-4300 Essen-Kray (sales No. 702).