CHAVESBAO
Lontana Group

C/ Bizkargi, 6 – POL. SARRIKOLA
48195 LARRABETZU (BIZKAIA)
Telf. 944 123 199 Fax. 944 117 132

Technical Sheet

Title	Mechanical properties of fasteners. Part 2: Nuts with specified proof load values. Coarse thread
Norm	UNE-EN ISO 898-2

1.- Scope and field of application

This International Standard specifies the mechanical properties of nuts with specified Proof load values tested temperature 10-35ºC. The mechanical properties are differents to higher or lower temperature.

- With nominal thread diameters up to and including 39 mm.
- Of triangular ISO Thread and with diameters and pitches according to ISO 68 and ISO 262 (Coarse thread)
- Con combinaciones diámetro/paso de rosca en conformidad con la Norma ISO 261 (Rosca de paso grueso);
- With thread tolerances 6H, according to ISO 965.
- With specific mechanical requirements;
- With width across flats as specified in ISO 272 or equivalent;
- With nominal heights greater than or equal to 0,5 D;
- Made of carbon steel or low alloy steel

It does not apply to nuts requiring special properties such as

- Locking abilities (see ISO 2320);
- Weldability;
- Corrosion resistance (see ISO 3506);
- Ability to withstand temperatures above + 300 ºC or - 50 ºC.

2- Chemical composition

Property class		Chemical composition limits (Check analysis) % (m/m)			
		C Máx.	Mn Mín.	P Máx.	S Max.
4[1]; 5[1]; 6[1];/8/	--	0,58	--	0,060	0,150
8; 9	04[1]	0,58	0,25	0,060	0,150
10[2]	05[2]	0,58	0,30	0,048	0,058
12[2]	--	0,58	0,45	0,048	0,058

[1] Nuts of these property classes muy be manufactured from free-cutting steel unless otherwise agreed between the purchaser and the manufacturer. In such cases the following maximum :

sulphur 0,34%; phosphorus 0,11%; lead 0,35%.

[2] Alloying elements may be added if necessary to develop the mechanical properties of the nuts.

3- Mechanical properties (coarse thread)

Thread over	Thread to	Property class 5[3] Proof stress S N/mm²	5[3] Vickers Hardness HV Mín.	5[3] Vickers Hardness HV Max.	5[3] Nut	5[3] Nut Style	6 ó /8/ Proof stress S N/mm²	6 ó /8/ Vickers Hardness HV Mín.	6 ó /8/ Vickers Hardness HV Max.	6 ó /8/ Nut	6 ó /8/ Nut Style	8 Proof stress S N/mm²	8 Vickers Hardness HV Mín.	8 Vickers Hardness HV Max.	8 Nut	8 Nut Style	10 Proof stress S N/mm²	10 Vickers Hardness HV Mín.	10 Vickers Hardness HV Max.	10 Nut	10 Nut Style
--	M4	520	130	302	NTR[1]	1	600	150	302	NTR[1]	1	800	180	302	NTR[1]	1	1040	272	353	TR[2]	1
M4	M7	580					670					855					1040				
M7	M10	590					680					870	200				1040				
M10	M16	610					700					880					1050				
M16	M39	630	146				720	170				920	233	353	TR[2]		890	180	302	NTR	2	1060

1) NTR= No Quenched -Tempered
2) TR= Quenched and tempered

Nota:
Minimum hardness is mandatory only for heat-treated nuts and nuts too large to be Prof.-load tested. For all other nuts, minimum hardness is provided for guidance only.

CHAVESBAO
Lontana Group

C/ Bizkargi, 6– POL. SARRIKOLA
48195 LARRABETZU (BIZKAIA)
Telf. 944 123 199 Fax. 944 117 132

4.- Proof load values – Coarse thread –

Thread	Ptich of the tread	Nominal Stress area	Property class					
			4	5	6	8		10
	Mm	A_s	Proof load (A_5 x S_p)					
		Mm^2	Style 1	Style 1	Style 1	Style 1	Style 2	Style 1
M3	0,5	5,03	--	2 600	3 000	4 000	--	5 200
M3.5	0,6	6,78	--	3 550	4 050	5 400	--	7 050
M4	0,7	8,78	--	4 550	5 250	7 000	--	9 150
M5	0,8	14,2	--	8 250	9 500	12 140	--	14 800
M6	1	20,1	--	11 700	13 500	17 200	--	20 900
M7	1	28,9	--	16 800	19 400	24 700	--	30 100
M8	1,25	36,6	--	21 600	24 900	31 800	--	38 100
M10	1,5	58	--	34 200	39 400	50 500	--	60 300
M12	1,75	84,3	--	51 400	59 000	74 200	--	88 500
M14	2	115	--	70 200	80 500	101200	--	120 800
M16	2	157	--	95 800	109 900	138 200	--	164 900
M18	2,5	192	97 900	121 000	138 200	176 600	170 900	203 500
M20	2,5	245	125 000	154 400	176 400	225 400	218 100	259 700
M22	2,5	303	154 500	190 900	218 200	278 800	269 700	321 200
M24	3	353	180 000	222 400	254 200	324 800	314 200	374 200
M27	3	459	234 100	289 200	330 500	422 300	408 500	486 500
M30	3,5	561	286 100	353 400	403 900	516 100	499 300	594 700
M33	3,5	694	353 900	437 200	499 700	638 500	617 700	735 600
M36	4	817	416 700	514 700	588 200	751 600	727 100	866 000
M39	4	976	497 800	614 900	702 700	897 900	868 600	1 035 000