

GOLDEED DEVELOPMENT LTD

RM.1805,TUNGCHUN COMM.CENTRE,438 SHANGHAI ST.HONGKONG

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CHEMICAL COMPOSITION OF BOLTS

Grades of Bolt	Chemical Composition %						Temper Temperature °C min
	Material and Heat Treatment	C		P _{max}	B _{max}	S _{max}	
		min	max				
4.8	Carbon Steel	—	0.55	0.05	0.003	0.06	—
5.8		—	0.55	0.05	0.003	0.06	—
6.8		—	0.55	0.05	0.003	0.06	—
8.8	Low carbon alloy steel(boron, manganese,chromium),quenched abd tempered; or medium carbon steel, quenched and tempered	0.25	0.55	0.04	0.003	0.05	425

Note: The percentage of boron can take up to 0.005% of which the non-effective boron can be controlled by adding titanium or aluminum.

CHEMICAL COMPOSITION OF NUTS

Grades of Nuts	Chemical Composition %			
	C _{max}	Mn _{max}	P _{max}	S _{max}
4	0.50	—	0.060	0.15
5	0.50	—	0.060	0.15
6	0.50	—	0.060	0.15
8	0.58	0.25	0.048	0.15

Note: Free-cutting steel can be used to fabricate nuts of grade 4,5,6. The maximum percentage of phosphor, sulfur and lead are 0.11%,0.30%,0.35% respectively.

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MECHANICAL PROPERTIES OF BOLTS

Mechanical Properties			Mechanical Properties					
			4.8	5.6	5.8	6.8	8.8	
							≤M16	> M16
Tensile Strength σ_{bmin} N/mm ²			420	500	520	600	800	830
HR	max	HRB	95	95	95	99.5	—	—
		HRC	—	—	—	—	32	34
	min	HRB	71	79	82	89	—	—
		HRC	—	—	—	—	22	23
Visual Hardness HV _{0.3}			—	—	—	—	324	349
Yield Point N/mm ²			340	300	420	480	—	—
Yield Strength $\sigma_{0.2}$ N/mm ²			—	—	—	—	640	660
Shear Strength τ N/mm ²			260	310	322	370	500	
Elongation δ %			14	20	10	8	12	12
RA %			—	—	—	—	52	
Minimum height of decarbonized threads			—	—	—	—	(1/2)H	
Maximum depth of fully decarbonized layer			—	—	—	—	0.015	
Solidity of Head			No cracks in the head and joint circle between the head and the shank					
Wedge-loading Strength			Equals to the minimum tensile strength					
Note: The formula to calculate the yield strength: $\tau = 0.62 \sigma_b$; H= thread height (mm)								

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MECHANICAL PROPERTIES OF NUTS

Mechanical Properties		Grades of Nuts							
		4		5		6		8	
		≤M16	>M16	≤M16	>M16	≤M16	>M16	≤M16	>M16
Guaranteed Stress N/mm ²		—	510	610	630	700	720	880	920
HV	min	—	117	130	146	150	170	200	233
	max	—	302	302	302	302	302	302	353

12-10-2015