

Recommended Bolt Torque for Grade 8.8 connection Bolts						
Bolt Size (mm)	Width Across Flats (mm)	Net Area (mm <sup>2</sup> )	Yield Stress (MPa)	Tension force (N)	Recommend Torque(N*m)	Pretension Force (N)
10	16	58	640 (8.8)	37120	37	18560
12	18	84	640 (8.8)	53952	65	26976
16	24	157	640 (8.8)	100480	161	50240
20	30	245	640 (8.8)	156672	313	78336
24	36	353	640 (8.8)	225600	541	112800
27	41	459	640 (8.8)	294016	794	147008
30	46	561	640 (8.8)	358784	1076	179392
33	50	694	640 (8.8)	444160	1466	222080
36	55	817	640 (8.8)	522688	1882	261344
42	65	1121	640 (8.8)	717440	3013	358720
48	75	1473	640 (8.8)	942720	4525	471360
56	85	2030	640 (8.8)	1299200	7276	649600
Recommended Bolt Torque for Anchor Bolts						
Bolt Size (mm)	Width Across Flats (mm)	Net Area(mm <sup>2</sup> )	Yield Stress (MPa)	Tension force (N)	Recommend Torque(N*m)	Pretension Force (N)
20	30	245	355 (45#)	86904	174	43452
24	36	353	355 (45#)	125138	300	62569
27	41	459	355 (45#)	163087	440	81544
30	46	561	355 (45#)	199013	597	99507
33	50	694	380 (GR55)	263720	870	131860
36	55	817	355 (45#)	289929	1044	144964
42	65	1121	355 (45#)	397955	1671	198978
48	75	1473	355 (45#)	522915	2510	261458
56	85	2030	355 (45#)	720650	4036	360325

Note:

1. In our experience, we would prefer to apply 50% of maximum tension of bolt as pretension force

2. Pretension Torque :  $T_c = k \cdot D \cdot P_c$

$k=0.2$  ( According to our Machine Design Handbook )

D--Bolt Diameter

$P_c$ --Pretension force