



PROPERTIES OF STRUCTURAL BOLT & NUT AS PER A325

NOMINAL DIAMETER	PITCH in TPI			stress area in mm ²			BOLT, SCREW & STUD ASTM A325-1						HEAVY HEX NUT ASTM A563 DH*		
							Proof Stress N/mm	Proof Load UNC KN	Tensile Stress N/mm	Tour-que* N m	Hard-ness HRC	ELONGA-TION# %	Proof Stress N/mm	Proof Load UNC	Hard-ness HRC
SIZE	UNC	UNF	8UN	UNC	UNF	8UN									
1/4	20	28		20.5	23.5		586	12.0	827	10.3	25-34	14.0	1206	24.8	24-38
5/16	18	24		33.8	37.5		586	19.8	827	21.1	25-34	14.0	1206	40.8	24-38
3/8	16	24		50.0	56.7		586	29.3	827	37.5	25-34	14.0	1206	60.3	24-38
7/16	14	20		68.6	76.6		586	40.2	827	60	25-34	14.0	1206	82.7	24-38
1/2	13	20		91.5	103	91.5	586	53.6	827	91.5	25-34	14.0	1206	110.4	24-38
9/16	12	18		117	131	117	586	68.8	827	131.9	25-34	14.0	1206	141.6	24-38
5/8	11	18		146	165	146	586	85.4	827	182.1	25-34	14.0	1206	175.8	24-38
3/4	10	16		216	241	216	586	126.4	827	323.4	25-34	14.0	1206	260.2	24-38
7/8	9	14		298	329	298	586	174.6	827	520.9	25-34	14.0	1206	359.3	24-38
1	8	12	8	391	428	391	586	229.0	827	780.9	25-34	14.0	1206	471.3	24-38
1 1/16			8			448	510	-	724	-	19-30	14.0	1206	-	24-38
1 1/8	7	12	8	492	552	510	510	251.1	724	963.4	19-30	14.0	1206	593.9	24-38
1 3/16			8			575	510	-	724	-	19-30	14.0	1206	-	24-38
1 1/4	7	12	8	625	692	645	510	318.9	724	1,359	19-30	14.0	1206	754.0	24-38
1 5/16			8			718	510	-	724	-	19-30	14.0	1206	-	24-38
1 3/8	6	12	8	745	848	796	510	380.0	724	1,782	19-30	14.0	1206	898.6	24-38
1 7/16			8			877	510	-	724	-	19-30	14.0	1206	-	24-38
1 1/2	6	12	8	907	1,020	962	510	462.4	724	2,365	19-30	14.0	1206	1,093	24-38
1 9/16			8			1,052									
1 5/8			8			1,145									
1 11/16			8			1,242									
1 3/4	5		8	1,225		1,343									
1 7/8			8			1,557									
2	4 1/2		8	1,612		1,788									
2 1/4	4 1/2		8	2,095		2,295									
2 1/2	4		8	2,580		2,866									
2 3/4			8			3,819									
3			8			4,198									
3 1/4			8			4,959									

DIMENSION	HEAVY HEX	HEAVY HEX
MARKING	'RS' 'A325' '8S'	'RS' 'DH'
CARBON	0.03-0.52	0.18-0.58
MANAGENESE	-0.6	0.57-
SULPHUR	-0.05	-0.058
SILICON	0.15-0.30	
CHROMIUM		
MOLYBDENUM		
NICKLE		
VANADIUM		
PHOPHORUS		-0.48
MATERIAL	Plain Carbon / Alloy Steel	

Notes:

- 1. 8UN means less than 1" UNC thread and above 1" 8 TPI thread
- 2. Left hand side of '-' is minium value right hand side of '-' is maximum value
Eg. 0.5-0.7 min is 0.5 and max is 0.7
Eg. -0.8 max is 0.8 no minimam value
Eg. 2.0- min is 2.0 no maximam value

* Alternative ASTM A194 2H can be used
Elongation in length of 4 times Diameter

* Torque value based on 75% of proof load and finish as recieved steel

| Metric Units is followed, if not available it has been converted to metric unit for uniformity