



PROPERTIES OF HEX BOLT & NUT (UNC / UNF) GRADE 5

NOMINAL DIAMETER	PITCH in TPI			stress area in mm ²			BOLT, SCREW & STUD SAE J429 GRADE 5							NUT SAE J995 GRADE 5				
	UNC	UNF	8UN	UNC	UNF	8UN	Proof Stress N/mm	Proof Load UNC KN	Proof Load UNF KN	Tensile Stress N/mm	Torque* N m	Hardness HRC	ELONGATION# %	Proof Stress UNC N/mm	Proof Load UNC KN	Proof Stress UNF N/mm	Proof Load UNF KN	Hardness HRC
1/4	20	28		20.5	23.5		586	12.0	13.8	827	10.26	25-34	14.0	827	17.0	752	15.4	-32
5/16	18	24		33.8	37.5		586	19.8	22.0	827	21.12	25-34	14.0	827	28.0	752	25.4	-32
3/8	16	24		50.0	56.7		586	29.3	33.2	827	37.46	25-34	14.0	827	41.3	752	37.6	-32
7/16	14	20		68.6	76.6		586	40.2	44.9	827	59.96	25-34	14.0	827	56.7	752	51.6	-32
1/2	13	20		91.5	103	91.5	586	53.6	60.5	827	91.47	25-34	14.0	827	75.7	752	68.8	-32
9/16	12	18		117	131	117	586	68.8	76.7	827	131.9	25-34	14.0	827	97.1	752	88.3	-32
5/8	11	18		146	165	146	586	85.4	96.8	827	182.1	25-34	14.0	827	120.6	752	109.6	-32
3/4	10	16		216	241	216	586	126.4	141.0	827	323.4	25-34	14.0	827	178.5	752	162.3	-32
7/8	9	14		298	329	298	586	174.6	192.6	827	520.9	25-34	14.0	827	246.4	752	224.0	-32
1	8	12	8	391	428	391	586	229.0	250.7	827	780.9	25-34	14.0	827	323.2	752	293.9	-32
1 1/16			8			448	510	-	-	724	-	19-30	14.0	724	-	648	-	-32
1 1/8	7	12	8	492	552	510	510	251.1	281.6	724	963.4	19-30	14.0	724	356.5	648	319.1	-32
1 3/16			8			575	510	-	-	724	-	19-30	14.0	724	-	648	-	-32
1 1/4	7	12	8	625	692	645	510	318.9	353.0	724	1,359	19-30	14.0	724	452.7	648	405.2	-32
1 5/16			8			718	510	-	-	724	-	19-30	14.0	724	-	648	-	-32
1 3/8	6	12	8	745	848	796	510	380.0	432.6	724	1,782	19-30	14.0	724	539.4	648	482.8	-32
1 7/16			8			877	510	-	-	724	-	19-30	14.0	724	-	648	-	-32
1 1/2	6	12	8	907	1,020	962	510	462.4	520.2	724	2,365	19-30	14.0	724	656.4	648	587.5	-32
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												
3 1/2			8			5,783												
4			8			7,621												

	NORMAL HEX	NORMAL HEX
DIMENSION	Three Radial Lines	Three Radial Lines
MARKING	0.03-0.52	-0.55
CARBON	-0.6	-0.30
MANGANESE	-0.05	-0.15
SULPHUR	0.15-0.30	0.15-0.30
SILICON		
CHROMIUM		
MOLYBDENUM		
NICKLE		
VANADIUM		
PHOPHORUS		-0.05
MATERIAL	Plain Carbon / Alloy Steel	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 minimum 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 minimum value
Eg. 2.0- min is 2.0 no maximum value

* 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