PROPERTIES OF STRUCTURAL BOLT & NUT AS PER A490

NOMINAL DIAMETER	PITCH in TPI			stress area in mm2			BOLT, SCREW & STUD ASTM A490-1						HEAVY HEX NUT ASTM A563 DH*		
SIZE	UNC	UNF	8UN	UNC	UNF	8UN	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
1/4	20	28		20.5	23.5										
5/16	18	24		33.8	37.5										
3/8	16	24		50.0	56.7										
7/16	14	20		68.6	76.6										
1/2	13	20		91.5	103	91.5	827	75.7	1034-1192	129.1	33-39	14.0	1206	110.4	24-38
9/16	12	18		117	131	117	827	97.1	1034-1192	186.2	33-39	14.0	1206	141.6	24-38
5/8	11	18		146	165	146	827	120.6	1034-1192	257.0	33-39	14.0	1206	175.8	24-38
3/4	10	16		216	241	216	827	178.5	1034-1192	456.4	33-39	14.0	1206	260.2	24-38
7/8	9	14		298	329	298	827	246.4	1034-1192	735.1	33-39	14.0	1206	359.3	24-38
1	8	12	8	391	428	391	827	323.2	1034-1192	1,102	33-39	14.0	1206	471.3	24-38
1 1/16			8			448	827	-	1034-1192	-	33-39	14.0	1206	-	24-38
1 1/8	7	12	8	492	552	510	827	407.2	1034-1192	1,562	33-39	14.0	1206	593.9	24-38
1 3/16			8			575	827	-	1034-1192	-	33-39	14.0	1206	-	24-38
1 1/4	7	12	8	625	692	645	827	517.1	1034-1192	2,204	33-39	14.0	1206	754.0	24-38
1 5/16			8			718	827	-	1034-1192	-	33-39	14.0	1206	-	24-38
1 3/8	6	12	8	745	848	796	827	616.2	1034-1192	2,889	33-39	14.0	1206	898.6	24-38
1 7/16			8			877	827	-	1034-1192	-	33-39	14.0	1206	-	24-38
1 1/2	6	12	8	907	1,020	962	827	749.8	1034-1192	3,835	33-39	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									
3 1/2			8			5,783									
4			8			7,621									

DIMENSION	HEAVY HEX	HEAVY HEX
MARKING	'RS' 'A490' '10S'	'RS' 'DH'
CARBON	0.30-0.48/0.35-0.53	0.18-0.58
MANAGENESE	1.65-	0.57-
SULPHUR	-0.04	-0.058
SILICON	0.60-	
CHROMIUM	3.99-	
MOLYBDENUM		
NICKLE		
VANADIUM		
PHOPHORUS		-0.48
MATERIAL	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 2 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