PROPERTIES OF A193 B16

NOMINAL DIAMETER	PITCH in TPI			stress area in mm2			BOLT, SCREW & STUD ASTM A193 B16						HEAVY HEX NUT ASTM A194 Gr. 4		
SIZE	UNC	UNF	8UN	UNC	UNF	8UN	Yeild Stress 8UN N/mm	Yeild Load 8UN KN	Tensile Stress N/mm	Tourque* N m	Hard-ness HRC	ELONGA-TION# %	Proof Stress N/mm	Proof Load 8UN KN	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	724	66.3	862	112.9	-35		1206	110.3	24-35
9/16	12	18		117	131	117	724	85.0	862	162.5	-35		1206	141.1	24-35
5/8	11	18		146	165	146	724	105.6	862	225.3	-35		1206	176.1	24-35
3/4	10	16		216	241	216	724	156.2	862	399.9	-35		1206	260.5	24-35
7/8	9	14		298	329	298	724	215.7	862	643.7	-35		1206	359.4	24-35
1	8	12	8	391	428	391	724	282.9	862	964.8	-35		1206	471.3	24-35
1 1/16			8			448	724	324.6	862	1,176	-35		1206	540.8	24-35
1 1/8	7	12	8	492	552	510	724	369.2	862	1,416	-35	18.0	1206	615.0	24-35
1 3/16			8			575	724	416.7	862	1,687	-35	18.0	1206	694.0	24-35
1 1/4	7	12	8	625	692	645	724	467.0	862	1,990	-35	18.0	1206	777.8	24-35
1 5/16			8			718	724	520.1	862	2,328	-35	18.0	1206	866.4	24-35
1 3/8	6	12	8	745	848	796	724	576.2	862	2,701	-35	18.0	1206	959.7	24-35
1 7/16			8			877	724	635.1	862	3,113	-35	18.0	1206	1,058	24-35
1 1/2	6	12	8	907	1,020	962	724	696.8	862	3,564	-35	18.0	1206	1,161	24-35
1 9/16			8			1,052	724	761.5	862	4,057	-35	18.0	1206	1,268	24-35
1 5/8			8			1,145	724	829.0	862	4,593	-35	18.0	1206	1,381	24-35
1 11/16			8			1,242	724	899.3	862	5,175	-35	18.0	1206	1,498	24-35
1 3/4	5		8	1,225		1,343	724	972.6	862	5,804	-35	18.0	1206	1,620	24-35
1 7/8			8			1,557	724	1,128	862	7,210	-35	18.0	1206	1,878	24-35
2	4 1/2		8	1,612		1,788	724	1,294	862	8,826	-35	18.0	1206	2,156	24-35
2 1/4	4 1/2		8	2,095		2,295	724	1,662	862	12,748	-35	18.0	1206	2,768	24-35
2 1/2	4		8	2,580		2,866	724	2,075	862	17,688	-35	18.0	1206	3,456	24-35
2 3/4			8			3,819	655	2,501	758	23,457	-35	18.0	1206	4,606	24-35
3			8			4,198	655	2,749	758	28,126	-35	18.0	1206	5,062	24-35
3 1/4			8			4,959	655	3,248	758	35,993	-35	18.0	1206	5,980	24-35
3 1/2			8			5,783	655	3,788	758	45,205	-35	18.0	1206	6,974	24-35
4			8			7,621	655	4,992	758	68,088	-35	18.0	1206	9,191	24-35

DIMENSION	HEAVY HEX	HEAVY HEX
MARKING	'RS' B16'	'RS' '4'
TEMPERING oC	650	595
Heating for 24Hours for the Nut oC		590
HARDNESS AFTER HEATING		94 HRb
CARBON	0.36-0.47	0.40-0.50
MANAGENESE	0.45-0.70	0.70-0.90
SULPHUR	-0.04	-0.040
SILICON	0.15-0.35	0.15-0.35
CHROMIUM	0.80-1.15	
MOLYBDENUM	0.50-0.65	0.20-0.30
NICKLE		
VANADIUM	0.25-0.35	
PHOPHORUS	-0.015	-0.035
MATERIAL	Chro-moly-van Steel	Carbon molybdenum

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

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