



# PROPERTIES OF LOW TEMPERATURE FASTENERS

NOMINAL DIAMETER	PITCH in TPI			stress area in mm2			BOLT, SCREW & STUD ASTM A320 L7						HEAVY HEX NUT ASTM A194 GR7			
	SIZE	UNC	UNF	8UN	UNC	UNF	8UN	Yeild Stress 8UN N/mm	Yeild Load 8UN KN	Tensile Stress N/mm	Tourque* N m	Hardness HRC	ELONGATION# %	Proof Stress N/mm	Proof Load 8UN KN	Hardness 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	66.2	862	112.9	-		1206	110.3	24-35	
9/16	12	18		117	131	117	724	84.7	862	162.5	-		1206	141.1	24-35	
5/8	11	18		146	165	146	724	105.7	862	225.3	-		1206	176.1	24-35	
3/4	10	16		216	241	216	724	156.4	862	399.9	-		1206	260.5	24-35	
7/8	9	14		298	329	298	724	215.8	862	643.7	-		1206	359.3	24-35	
1	8	12	8	391	428	391	724	282.9	862	964.8	-		1206	471.3	24-35	
1 1/16			8			448	724	324.6	862	1,176	-		1206	540.8	24-35	
1 1/8	7	12	8	492	552	510	724	369.2	862	1,416	-	16.0	1206	615.0	24-35	
1 3/16			8			575	724	416.7	862	1,687	-	16.0	1206	694.0	24-35	
1 1/4	7	12	8	625	692	645	724	467.0	862	1,990	-	16.0	1206	777.8	24-35	
1 5/16			8			718	724	520.1	862	2,328	-	16.0	1206	866.4	24-35	
1 3/8	6	12	8	745	848	796	724	576.2	862	2,701	-	16.0	1206	959.7	24-35	
1 7/16			8			877	724	635.1	862	3,113	-	16.0	1206	1,058	24-35	
1 1/2	6	12	8	907	1,020	962	724	696.8	862	3,564	-	16.0	1206	1,161	24-35	
1 9/16			8			1,052	724	761.5	862	4,057	-	16.0	1206	1,268	24-35	
1 5/8			8			1,145	724	829.0	862	4,593	-	16.0	1206	1,381	24-35	
1 11/16			8			1,242	724	899.0	862	5,175	-	16.0	1206	1,498	24-35	
1 3/4	5		8	1,225		1,343	724	972.6	862	5,804	-	16.0	1206	1,620	24-35	
1 7/8			8			1,557	724	1,128	862	7,210	-	16.0	1206	1,878	24-35	
2	4 1/2		8	1,612		1,788	724	1,294	862	8,826	-	16.0	1206	2,156	24-35	
2 1/4	4 1/2		8	2,095		2,295	724	1,662	862	12,748	-	16.0	1206	2,768	24-35	
2 1/2	4		8	2,580		2,866	724	2,075	862	17,688	-	16.0	1206	3,456	24-35	
2 3/4			8			3,819	724	2,765	862	25,928	-	16.0	1206	4,606	24-35	
3			8			4,198	724	3,039	862	31,089	-	16.0	1206	5,062	24-35	
3 1/4			8			4,959	724	3,590	862	39,785	-	16.0	1206	5,980	24-35	
3 1/2			8			5,783	724	4,187	862	49,967	-	16.0	1206	6,674	24-35	
4			8			7,621	724	5,518	862	75,261	-	16.0	1206	9,191	24-35	

DIMENSION	HEAVY HEX	HEAVY HEX
MARKING	'RS' 'L7'	'RS' '7'
TEMPERING oC	593	595
Heating for 24Hours for the Nut oC		590
HARDNESS AFTER HEATING		94 HRb
CARBON	0.38-0.48	0.37-0.49
MANAGENESE	0.75-1.0	0.65-1.10
SULPHUR	-0.04	0.04-
SILICON	0.15-0.35	0.15-0.35
CHROMIUM	0.80-1.10	0.75-1.20
MOLYBDENUM	0.15-0.25	0.15-0.25
NICKLE		
VANADIUM		
PHOPHORUS		0.035-
MATERIAL	Chromium - Moly Steel	AISI 4140/4142/4145

**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