

MECHANICAL REQUIREMENTS - II

ASTM A-320 ASME SA320 Grade	Heat Treatment	Tensile Strength min. ksi (MPa)	Yield Strength min. ksi (MPa)	Elongation in 2" (50mm) Min. %	Reduction of Area Min. %	Hardness Maximum
L7 2-1/2" & under	Quenched and tempered	125 (860)	105 (725)	16	50	-
L43 4" & under	Quenched and tempered	125 (860)	105 (725)	16	50	-
L7M 2-1/2" & under	Quenched and tempered at 1150 deg. F (620 deg. C) min.	100 (690)	80 (550)	18	50	235 HB (99HRB) See note 4 " "

Note 4: In order to meet the tensile requirements, the hardness shall be no less than 200 HB or 93 HRB

ASTM A-194 ASME SA194 Grade	Minimum Tempering Temperature deg. F (deg. C)	Brinnell Hardness	Rockwell Hardness	
			C Scale	B Scale
2H Up to and incl. 1-1/2" Over 1-1/2"	850 (455)	248 - 352	24 - 34	
2HM	1150 (620)	212 - 352	38 max.	95 min.
L7M	1100 (595)	159 - 237	22 max.	
3	1050 (565)	159 - 237	22 max.	
4 & L7	1100 (595)	248 - 352	24 - 38	
6	1100 (595)	248 - 352	24 - 38	
8 & 8M	1100 (595)	228 - 271	20 - 28	
		126 - 300		60 - 105

We have a full range of in-house equipment, regularly calibrated, to cover your gauging and hardness requirements and assure that you will receive only the highest quality products.



IMPACT ENERGY ABSORPTION REQUIREMENTS

ASTM A-194 ASME SA194		Minimum Average Impact Value for Ea. Set of 3 Specimens 10 X 10 X 50mm ft - lbs (Joules)
Grade 4	at - 150 deg. F (- 101 deg. C)	(note 5)
Grade L7	at - 150 deg. F (- 101 deg. C)	20 (27)
Grade L7M	at - 100 deg. F (- 73 deg. C)	20 (27)
ASTM A-320 ASME SA320		
Grade L7	at - 150 deg. F (- 101 deg. C)	20 (27)
Grade L7M	at - 100 deg. F (- 73 deg. C)	20 (27)
Grade L43	at - 150 deg. F (- 101 deg. C)	20 (27)

Note 5: Although ASTM calls for Charpy impact values in accordance with ASTM A-320 Grade L7 for both Grade 4 and Grade 7 nuts, chemical requirements preclude guaranteeing 20 ft.-lbs. for Grade 4. We offer Grade 4 with minimum 15 ft.-lbs. (20J) values. Where minimum 20 ft.-lbs. (27J) is needed, we recommend Grade 7.

See ASTM & ASME Books or Standards for allowing variations for other mechanical and testing requirements.

Under the strict guidelines of our Quality Assurance Manual and Quality Control Program, we will process your orders that meet your requirements.

Mill Test Reports and Certifications are available, upon request, with each order.

Ph: 780-440-2737 • 1-800-661-6923

M & Z INDUSTRIAL SUPPLY LTD.