

N-50 (XM-19) Stainless is a high strength and good corrosion resistant austenitic stainless steel. It has nearly double the yield strength of 304 and 316 stainless steel and has better corrosion resistance than 317L stainless steel. N-50 (XM-19) Stainless remains non-magnetic even after being severely cold worked. It maintains strength at high temperatures as well as sub-zero temperatures.

Specifications

UNS: S20910 W. Nr./EN: 1.3964 ASTM: A 276 NACE: MR0175 ISO: 15156-3

Chemical Composition, %

		Ni	Cr	Мо	Mn	Si	C	N	S	Р	Cb	۷	Fe
MI	N	11.5	20.5	1.5	4.0	-	-	0.2	-	-	0.1	0.1	-
M	AX	13.5	23.5	3.0	6.0	1.0	0.06	0.4	0.03	0.045	0.3	0.3	balance

Features

High strength austenitic alloyGood corrosion resistance

Applications

• Heat exchangers

• Seawater pump shafts

- Pressure vessels
- Marine hardware

Physical Properties

Density: 0.285 lb/in³ Melting Range: 2579 - 2642°F Electrical Resistivity: 492 ohm circ-mil/ft

Temperature, °F	70	200	300	400	600	800	900	1000	1200	1400
Coefficient of Thermal Expansion* in/in°F x 10 ^{.6}	-	9.0	-	9.2	9.6	9.9	-	10.2	10.5	10.8
Thermal Conductivity Btu • ft/ft² • hr • °F	108	-	108	-	124	-	141	-	160	-
Modulus of Elasticity Dynamic, psi x 10 ⁶	28.9	27.8	27.0	26.1	24.6	-	-	-	-	-

* 70°F to indicated temperature.

Mechanical Properties

Minimum Specified Properties, ASTM A 276 Bar

Ultimate Tensile Strength, ksi	100
0.2% Yield Strength, ksi	55
Elongation, %	35
Reduction of Area, %	55

+55 (11) 3825 2966

Mechanical Properties Continued

Typical Tensile Properties

// /											
Temperature, °F	-320	-100	75	200	400	600	800	1000	1200	1350	1500
Ultimate Tensile Strength, ksi	-	-	117	107	96	92	89	84	74	66	52
0.2% Yield Strength, ksi	-	-	60	50	38	35	34	32	31	31	30
Elongation, 2%	-	-	45	43.5	43.5	42.5	43.5	41	38	37	41
Impact Strength, ft-lbs	50	115	170	-	-	-	-	-	-	-	-



www.itwmetals.com.br Bulletin No. 350BZe 09/15

Rolled Alloys, RA are registered trademarks of Rolled Alloys The data and information in this printed matter are believed to be reliable. However, this material is not intended as a substitute for competent professional engineering assistance which is a requisite to any specific application. Rolled Alloys makes no warranty and assumes no legal liability or responsibility for results to be obtained in any particular situation, and shall not be liable for any direct, indirect, special, or consequential damage therefrom. This material is subject to revision without prior notice.