

Stainless Steel Mechanical Properties

Mechanical Properties/ General Information (properties for annealed condition in transverse direction)

Classification	Type	Tensile Strength (MPa)	0.2 Proof Stress (MPa)	Elongation (% in 50mm)	HRB _{max}	Corrosion Properties	Pitting Resistance	Formability	Toughness	Welding Properties	
FERRITICS	Utility	3CR12	460	280(<3), 300(≥3)	18(≤4.5), 20(>4.5)	95	Fair	Fair	Fair	Good	Good
		3CR12L	455 - 650	320(≤6), 280(>6)	20(≤6), 18(>6)	95					
		410S	415	205	20(≤1.27), 22(>1.27)	89					
	Standard	40910	380 - 560	220	25	88	Moderate	Moderate	Good	Low	Restricted
		40920									
		430	450 - 630	280(CR), 260(HR)	20(≤1.27), 22(>1.27)	89					
		430DDQ	450 - 630	280	26	89					
		439Nb	420 - 600	240	23	89					
	441	430 - 630	250	18	88						
	Moly	434	450 - 630	280	22	89	Very Good	Good	Good		
436		480 - 560	300	25	89						
444		420 - 640	320	20	90						
DUPLEXES	Lean	2001	620	450	25	25*	Good	Very Good	Very Good	Very Good	Very Good
		LDX2101®	700 - 900(CR) 650 - 850(R)	530(CR) 450(HR)	30	-					
		2304	650 - 850(CR) 630 - 800(HR)	450(CR) 400(HR)	25	32*	Very Good	Very Good	Very Good	Very Good	Very Good
	Super	2507	500(HR)	15	32						
	Standard	2205	700 - 950(CR) 655 - 840(HR)	500(CR) 460(HR)	25	31*	Excellent	Excellent	Good	Excellent	Good
AUSTENITICS	Cr-Ni-Mn	202	515	205	40	99	Moderate	Moderate	Excellent	Excellent	Excellent
		301LN	650 - 850(CR) 630 - 830(HR)	350(CR) 330(HR)	45	100					
	Cr-Ni	304/ 304H	540 - 750(CR)	260(CR)	45	90	Good	Good	Drawing	Excellent	Excellent
		304DQ									
		304DDQ	520 - 720(HR)	250(HR)		92			Deep Drawing		
		304L-ASTM	520 - 700(CR)	220(CR)	45	92			Deep Drawing		
		304L-ASME									
		304LS	500 - 700(HR)	200(HR)		95					
	304LDDQ				95						
		304LN	550 - 750	290	40	95					
	321	520 - 700(CR) 515 - 700(HR)	220(CR) 200(HR)	40	95						
Cr-Ni-Mo	316L - 1.4404	530 - 700(CR) 520 - 680(HR)	240(CR) 220(HR)	40(CR) 45(HR)	95	Very Good	Very Good	Excellent	Excellent	Excellent	
	316L - 1.4435	550 - 700(CR) 520 - 670(HR)	240(CR) 220(HR)	40(CR) 45(HR)	95						
	316LN	580 - 780	300(CR) 280(HR)	40	95						
	316Ti	540 - 690(CR) 520 - 670(HR)	240(CR) 220(HR)	40	95						
	904L	520 - 720(HR)	≥ 220(HR)	≥35	70-90						Excellent
Heat Resistant	309S - 1.4833	515 - 700	210	40	95	Very good oxidation resistance	Very Good	Very Good	Very Good	Good	
	309S - 1.4828	550 - 750	230	30	96						
	310S - 1.4845	515 - 700	210	40	95						

Minimum values, unless range is indicated. HR - Hot Rolled, CR - Cold Rolled, *HRC - Rockwell C. This table assumes certification to both ASTM & EN 10088 - 2 or 10095, where applicable.

NOTES

- It is important to note that the values given in the above table are typical/nominal for plate material with respect to those as in the American ASTM Specifications (with the exception of 3CR12). Therefore they must not be used for design or specification purposes. The above is general properties or annealed condition in transverse direction.

Actual values can differ in different specifications, and/or for different product forms (plate, sheet, coil, bar, forgings, castings, etc.), and for different conditions of supply. (i.e. Annealed vs Heat treated)