



Hastelloy® C-276 alloy, solution heat treated sheet, 4.8-25.4 mm thick

Material Notes: Versatile corrosion-resistant alloy, usually does not need to be solution heat treated after welding and has vastly improved fabricability, excellent resistance to localized corrosion and to both oxidizing and reducing media. Resists formation of grain-boundary precipitates and is therefore suitable for chemical process applications in the as-welded condition. C-276 has excellent resistance to strong oxidizers like ferric and cupric chlorides, hot contaminated media (organic and inorganic), chlorine, formic and acetic acids, acetic anhydride, seawater, brine solutions, sulfur compounds, wet chlorine gas, hypochlorite and chlorine dioxide.



Key Words: ASME SB-622, ASME SB-626 SCC resistant, flue-gas desulfurization systems, UNS N10276, ASME SB-574, ASME SB-575, ASME SB-619

Physical Properties	Metric	English	Comments
Density	8.89 g/cc	0.321 lb/in ³	at RT
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	90	90	Average room temperature hardness for sheet (average of 49 tests); 87 HRB average room temperature hardness for plate (average of 35 tests)
Hardness, Vickers	191	191	Conversion from Rockwell B hardness.
Tensile Strength, Ultimate	601.2 MPa @Temperature 538 °C	87200 psi @Temperature 1000 °F	
	630.9 MPa @Temperature 427 °C	91500 psi @Temperature 801 °F	
	650.2 MPa @Temperature 316 °C	94300 psi @Temperature 601 °F	
	681.9 MPa @Temperature 204 °C	98900 psi @Temperature 399 °F	
Tensile Strength, Yield	225.5 MPa @Temperature 427 °C	32710 psi @Temperature 801 °F	at 0.2% offset
	226.2 MPa @Temperature 538 °C	32810 psi @Temperature 1000 °F	at 0.2% offset
	235.1 MPa @Temperature 316 °C	34100 psi @Temperature 601 °F	at 0.2% offset
	263.4 MPa @Temperature 204 °C	38200 psi @Temperature 399 °F	at 0.2% offset
Elongation at Break	59.0 % @Temperature 538 °C	59.0 % @Temperature 1000 °F	in 50.8 mm
	60.0 % @Temperature 427 °C	60.0 % @Temperature 801 °F	in 50.8 mm
	61.0 % @Temperature 204 °C	61.0 % @Temperature 399 °F	in 50.8 mm
	66.0 % @Temperature 316 °C	66.0 % @Temperature 601 °F	in 50.8 mm
Modulus of Elasticity	205 GPa	29700 ksi	RT
	176 GPa @Temperature 538 °C	25500 ksi @Temperature 1000 °F	heat treated at 1121°C (2050°F) and rapid quenched
	182 GPa @Temperature 427 °C	26400 ksi @Temperature 801 °F	heat treated at 1121°C (2050°F) and rapid quenched
	188 GPa @Temperature 316 °C	27300 ksi @Temperature 601 °F	heat treated at 1121°C (2050°F) and rapid quenched
	195 GPa @Temperature 204 °C	28300 ksi @Temperature 399 °F	heat treated at 1121°C (2050°F) and rapid quenched
Charpy Impact	87.0 J @Temperature -196 °C	64.2 ft-lb @Temperature -321 °F	aged 1000 hours at 538°C (1000°F)
	130 J @Temperature -196 °C	95.9 ft-lb @Temperature -321 °F	aged 100 hours at 538°C (1000°F)
	339 J	250 ft-lb	aged 100 hours at 260°C

@Temperature -196 °C
357 J
@Temperature -196 °C

@Temperature -321 °F
263 ft-lb
@Temperature -321 °F

solution heat treated at 1121°C (2050°F),
rapid quenched

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000130 ohm-cm	0.000130 ohm-cm	24°C (75°F)
Thermal Properties	Metric	English	Comments
CTE, linear 	11.2 µm/m-°C	6.22 µin/in-°F	
	@Temperature 24.0 - 93.0 °C	@Temperature 75.2 - 199 °F	
	12.0 µm/m-°C	6.67 µin/in-°F	
	@Temperature 24.0 - 204 °C	@Temperature 75.2 - 399 °F	
	12.8 µm/m-°C	7.11 µin/in-°F	
	@Temperature 24.0 - 316 °C	@Temperature 75.2 - 601 °F	
	13.2 µm/m-°C	7.33 µin/in-°F	
	@Temperature 24.0 - 427 °C	@Temperature 75.2 - 801 °F	
	13.2 µm/m-°C	7.33 µin/in-°F	
	@Temperature 24.0 - 538 °C	@Temperature 75.2 - 1000 °F	
Specific Heat Capacity	0.427 J/g-°C	0.102 BTU/lb-°F	RT
Thermal Conductivity 	7.20 W/m-K	50.0 BTU-in/hr-ft²-°F	-168°C
	8.60 W/m-K	59.7 BTU-in/hr-ft²-°F	-73°C
	9.40 W/m-K	65.2 BTU-in/hr-ft²-°F	-18°C
	10.2 W/m-K	70.8 BTU-in/hr-ft²-°F	38°C
	11.1 W/m-K	77.0 BTU-in/hr-ft²-°F	
	@Temperature 93.0 °C	@Temperature 199 °F	
	13.0 W/m-K	90.2 BTU-in/hr-ft²-°F	
	@Temperature 204 °C	@Temperature 399 °F	
	15.0 W/m-K	104 BTU-in/hr-ft²-°F	
	@Temperature 316 °C	@Temperature 601 °F	
	16.9 W/m-K	117 BTU-in/hr-ft²-°F	
	@Temperature 427 °C	@Temperature 801 °F	
	19.0 W/m-K	132 BTU-in/hr-ft²-°F	
	@Temperature 538 °C	@Temperature 1000 °F	
Melting Point	1323 - 1371 °C	2413 - 2500 °F	
Solidus	1323 °C	2413 °F	
Liquidus	1371 °C	2500 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.010 %	<= 0.010 %	
Chromium, Cr	14.5 - 16.5 %	14.5 - 16.5 %	
Cobalt, Co	<= 2.50 %	<= 2.50 %	
Iron, Fe	4.0 - 7.0 %	4.0 - 7.0 %	
Manganese, Mn	<= 1.0 %	<= 1.0 %	
Molybdenum, Mo	15.0 - 17.0 %	15.0 - 17.0 %	
Nickel, Ni	57.0 %	57.0 %	
Phosphorous, P	<= 0.025 %	<= 0.025 %	
Silicon, Si	<= 0.080 %	<= 0.080 %	
Sulfur, S	<= 0.010 %	<= 0.010 %	
Tungsten, W	3.0 - 4.50 %	3.0 - 4.50 %	
Vanadium, V	<= 0.35 %	<= 0.35 %	

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. Information provided by MatWeb. Professional Plastics assumes no liability for the accuracy of this information.

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