

Haynes Hastelloy® G-30® alloy, 12.7 mm (1/2 in.) thick plate, GMAW spray weld 1.1 mm diameter filler wire

Category : Metal , Nonferrous Metal , Nickel Alloy , Superalloy

Material Notes:

HASTELLOY® G-30® alloy is a high chromium nickel-base alloy which shows superior corrosion resistance in commercial phosphoric acids as well as many complex environments containing highly oxidizing acids such as nitric/hydrochloric, nitric/hydrofluoric and sulfuric acids. The resistance of G-30 alloy to the formation of grain boundary precipitates in the heat-affected zone makes it suitable for use in most chemical process applications in the as-welded condition. HASTELLOY G-30 alloy is available in the form of plate, sheet, strip, billet, bar, wire, covered electrodes, pipe and tubing. Typical Applications: Phosphoric Acid Service Sulfuric Acid Service Nitric Acid Service Nuclear Fuel Reprocessing Nuclear Waste Processing Pickling Operations Petrochemicals Fertilizer Manufacture Pesticide Manufacture Gold Ore Extraction Heat Treatment: The standard solution heat treatment consists of heating to 2150°F (1177°C) followed by rapid air-cooling or water quenching. Parts which have been hot formed should be solution heat-treated prior to final fabrication or installation. Forming: G-30 alloy has excellent forming characteristics and cold forming is the preferred method of forming. Because of its good ductility, it can be easily cold-worked. The alloy is generally stiffer than the austenitic stainless steels so more energy is required during cold forming. Data provided by the manufacturer, Haynes International, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Haynes-Hastelloy-G-30-alloy-127-mm-12-in-thick-plate-GMAW-spray-weld-11-mm-diameter-filler-wire.php

Physical Properties	Metric	English	Comments
Density	8.22 g/cc	0.297 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	696 MPa	101000 psi	
	379 MPa	55000 psi	
	@Temperature 760 Å°C	@Temperature 1400 Å°F	
Tensile Strength, Yield	490 MPa	71100 psi	
	379 MPa	55000 psi	
	@Strain 0.200 %	@Strain 0.200 %	
Tensile Strength, Yield	207 MPa	30000 psi	
	248 MPa	36000 psi	
	@Strain 0.200 %, Temperature 760 Å°C	@Strain 0.200 %, Temperature 1400 Å°F	

Mechanical Properties	Temperature 538 Â°C Metric	Temperature 1000 Â°F English	Comments
Elongation at Break	51 %	51 %	in 50.8 mm
	34 % @Temperature 760 Â°C	34 % @Temperature 1400 Â°F	in 50.8 mm
	49 % @Temperature 538 Â°C	49 % @Temperature 1000 Â°F	in 50.8 mm
Reduction of Area	54 %	54 %	Fracture in weld metal.
	29 % @Temperature 760 Â°C	29 % @Temperature 1400 Â°F	Fracture in base metal.
	49 % @Temperature 538 Â°C	49 % @Temperature 1000 Â°F	Fracture in weld metal.
Modulus of Elasticity	202 GPa	29300 ksi	plate heat treated to 1177Â°C, rapid quenched
	184 GPa @Temperature 538 Â°C	26700 ksi @Temperature 1000 Â°F	plate heat treated to 1177Â°C and rapid quenched
	192 GPa @Temperature 427 Â°C	27800 ksi @Temperature 801 Â°F	plate heat treated to 1177Â°C and rapid quenched
	194 GPa @Temperature 316 Â°C	28100 ksi @Temperature 601 Â°F	plate heat treated to 1177Â°C and rapid quenched
	196 GPa @Temperature 204 Â°C	28400 ksi @Temperature 399 Â°F	plate heat treated to 1177Â°C and rapid quenched

Thermal Properties	Metric	English	Comments
CTE, linear	14.4 Âµm/m-Â°C @Temperature 30.0 - 316 Â°C	8.00 Âµin/in-Â°F @Temperature 86.0 - 601 Â°F	
	14.9 Âµm/m-Â°C @Temperature 30.0 - 427 Â°C	8.28 Âµin/in-Â°F @Temperature 86.0 - 801 Â°F	
	15.5 Âµm/m-Â°C @Temperature 30.0 -	8.61 Âµin/in-Â°F @Temperature 86.0 -	

Thermal Properties	538 Å°C Metric	1000 Å°F English	Comments
	16.0 Åµm/m-Å°C	8.89 Åµin/in-Å°F	
	@Temperature 30.0 - 760 Å°C	@Temperature 86.0 - 1400 Å°F	
	16.0 Åµm/m-Å°C	8.89 Åµin/in-Å°F	
	@Temperature 30.0 - 649 Å°C	@Temperature 86.0 - 1200 Å°F	
Thermal Conductivity	10.2 W/m-K	70.8 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 24.0 Å°C	@Temperature 75.2 Å°F	
	11.9 W/m-K	82.6 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 100 Å°C	@Temperature 212 Å°F	
	14.4 W/m-K	99.9 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 200 Å°C	@Temperature 392 Å°F	
	16.7 W/m-K	116 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 300 Å°C	@Temperature 572 Å°F	
	18.7 W/m-K	130 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 400 Å°C	@Temperature 752 Å°F	
	20.3 W/m-K	141 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 500 Å°C	@Temperature 932 Å°F	
	21.4 W/m-K	149 BTU-in/hr-ftÅ²-Å°F	
	@Temperature 600 Å°C	@Temperature 1110 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	28 - 31.5 %	28 - 31.5 %	
Cobalt, Co	<= 5.0 %	<= 5.0 %	
Copper, Cu	1.0 - 2.4 %	1.0 - 2.4 %	
Iron, Fe	13 - 17 %	13 - 17 %	
Manganese, Mn	<= 1.5 %	<= 1.5 %	
Molybdenum, Mo	4.0 - 6.0 %	4.0 - 6.0 %	

Component Elements Properties	Metric	English	Comments
Nickel, Ni	43 %	43 %	As Remainder
Phosphorous, P	<= 0.040 %	<= 0.040 %	
Silicon, Si	0.80 %	0.80 %	
Sulfur, S	<= 0.020 %	<= 0.020 %	
Tungsten, W	1.5 - 4.0 %	1.5 - 4.0 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000116 ohm-cm	0.000116 ohm-cm	
	@Temperature 24.0 Â°C	@Temperature 75.2 Â°F	
	0.000117 ohm-cm	0.000117 ohm-cm	
	@Temperature 100 Â°C	@Temperature 212 Â°F	
	0.000119 ohm-cm	0.000119 ohm-cm	
	@Temperature 200 Â°C	@Temperature 392 Â°F	
	0.000119 ohm-cm	0.000119 ohm-cm	
	@Temperature 300 Â°C	@Temperature 572 Â°F	
0.000123 ohm-cm	@Temperature 400 Â°C	@Temperature 752 Â°F	
	0.000124 ohm-cm	0.000124 ohm-cm	
@Temperature 500 Â°C	@Temperature 932 Â°F		
0.000125 ohm-cm	@Temperature 600 Â°C	@Temperature 1110 Â°F	

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China