

Kennametal Stellite Stellite® 6B solution heat-treated at 1232°C, 12.7 mm (1/2 in.) thick plate

Category : Metal , Nonferrous Metal , Cobalt Alloy , Superalloy

Material Notes:

Machined with tungsten-carbide tools. Inherent wear resistance, resistant to the wearing effects of hard, sharp particles such as in screw conveyors, rock crushing rollers, tile-making machines, and cement and steel-mill equipment. Resistant to the effects of seizing or galling, low coefficient of friction alloys sliding contact with other metals. Used in equipment where no lubricants are used. Outstanding resistance to cavitation-erosion. Combines wear and corrosion resistance with good impact strength and resistance to thermal shock. Retains high hardness, even at red heat. Electrical conductivity 1.90% compared to Copper. 2360 MPa average modulus of rupture of sheet at room temperature. Data provided by the manufacturer, Deloro Stellite, Inc. Product of former Deloro Stellite Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Kennametal-Stellite-Stellite-6B-solution-heat-treated-at-1232C-127-mm-12-in-thick-plate.php

Physical Properties	Metric	English	Comments
Density	8.387 g/cc	0.3030 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	102	102	Mutual indentation method
	@Temperature 871 °C	@Temperature 1600 °F	
	167	167	
Hardness, Brinell	@Temperature 760 °C	@Temperature 1400 °F	Mutual indentation method
	203	203	
	@Temperature 649 °C	@Temperature 1200 °F	
Hardness, Brinell	226	226	Mutual indentation method
	@Temperature 538 °C	@Temperature 1000 °F	
	117	117	
Hardness, Knoop	@Temperature 871 °C	@Temperature 1600 °F	Converted from Brinell Hardnesses
	194	194	
	@Temperature 760 °C	@Temperature 1400 °F	
Hardness, Knoop	237	237	Converted from Brinell Hardnesses
	@Temperature 649 °C	@Temperature 1200 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 538 Å°C	@Temperature 1000 Å°F	Converted from Brinell Hardnesses
Hardness, Rockwell A	36	36	Converted from Brinell Hardnesses
	@Temperature 871 Å°C	@Temperature 1600 Å°F	
	52	52	Converted from Brinell Hardnesses
	@Temperature 760 Å°C	@Temperature 1400 Å°F	
	58	58	Converted from Brinell Hardnesses
	@Temperature 649 Å°C	@Temperature 1200 Å°F	
	60	60	Converted from Brinell Hardnesses
	@Temperature 538 Å°C	@Temperature 1000 Å°F	
Hardness, Rockwell B	55	55	Converted from Brinell Hardnesses
	@Temperature 871 Å°C	@Temperature 1600 Å°F	
	86	86	Converted from Brinell Hardnesses
	@Temperature 760 Å°C	@Temperature 1400 Å°F	
	94	94	Converted from Brinell Hardnesses
	@Temperature 649 Å°C	@Temperature 1200 Å°F	
	98	98	Converted from Brinell Hardnesses
	@Temperature 538 Å°C	@Temperature 1000 Å°F	
Hardness, Vickers	102	102	Converted from Brinell Hardnesses
	@Temperature 871 Å°C	@Temperature 1600 Å°F	
	170	170	Converted from Brinell Hardnesses
	@Temperature 760 Å°C	@Temperature 1400 Å°F	
	208	208	Converted from Brinell Hardnesses
	@Temperature 649 Å°C	@Temperature 1200 Å°F	
	232	232	

Mechanical Properties	@Temperature 538 Å°C Metric	@Temperature 1000 English	Converted from Brinell Hardnesses Comments
Tensile Strength, Ultimate	1020 MPa	148000 psi	
	793 MPa	115000 psi	
	@Temperature 677 Å°C	@Temperature 1250 Å°F	
Tensile Strength, Yield	917 MPa	133000 psi	
	@Temperature 538 Å°C	@Temperature 1000 Å°F	
	607 MPa	88000 psi	
Elongation at Break	@Strain 0.200 %	@Strain 0.200 %	
	403 MPa	58500 psi	
	@Strain 0.200 %, Temperature 538 Å°C	@Strain 0.200 %, Temperature 1000 Å°F	
Modulus of Elasticity	418 MPa	60600 psi	
	@Strain 0.200 %, Temperature 677 Å°C	@Strain 0.200 %, Temperature 1250 Å°F	
	7.0 %	7.0 %	in 50.8 mm
Izod Impact Unnotched	9.0 %	9.0 %	
	@Temperature 538 Å°C	@Temperature 1000 Å°F	in 50.8 mm
	9.0 %	9.0 %	
Charpy Impact	@Temperature 677 Å°C	@Temperature 1250 Å°F	in 50.8 mm
	214 GPa	31000 ksi	sheet at RT
	210 GPa	30500 ksi	
Modulus of Elasticity	@Diameter 15.9 mm, Temperature 23.0 Å°C	@Diameter 0.626 in, Temperature 73.4 Å°F	bar
	84.0 J	62.0 ft-lb	plate solution heat-treated at 1232Å°C (2250Å°F), air cooled, tested at RT.
	@Thickness 12.7 mm	@Thickness 0.500 in	
Izod Impact Unnotched	8.00 J	5.90 ft-lb	
	@Temperature 23.0 Å°C	@Temperature 73.4 Å°F	Longitudinal
	20.0 J	14.8 ft-lb	
Charpy Impact	@Temperature 538 - 816 Å°C	@Temperature 1000 - 1500 Å°F	Longitudinal

Charpy Impact, Unnotched Mechanical Properties	88.0 J Metric	64.9 ft-lb English	Transverse Comments
	98.0 J @Temperature 22.2 Â°C	72.3 ft-lb @Temperature 72.0 Â°F	Longitudinal
	110 J @Temperature 538 Â°C	81.1 ft-lb @Temperature 1000 Â°F	Longitudinal
	157 J @Temperature 677 Â°C	116 ft-lb @Temperature 1250 Â°F	Longitudinal
	171 J @Temperature 816 Â°C	126 ft-lb @Temperature 1500 Â°F	Longitudinal

Thermal Properties	Metric	English	Comments
CTE, linear	13.9 Âµm/m-Â°C @Temperature 0.000 - 100 Â°C	7.72 Âµin/in-Â°F @Temperature 32.0 - 212 Â°F	
	14.1 Âµm/m-Â°C @Temperature 0.000 - 200 Â°C	7.83 Âµin/in-Â°F @Temperature 32.0 - 392 Â°F	
	14.5 Âµm/m-Â°C @Temperature 0.000 - 300 Â°C	8.06 Âµin/in-Â°F @Temperature 32.0 - 572 Â°F	
	14.7 Âµm/m-Â°C @Temperature 0.000 - 400 Â°C	8.17 Âµin/in-Â°F @Temperature 32.0 - 752 Â°F	
	15.0 Âµm/m-Â°C @Temperature 0.000 - 500 Â°C	8.33 Âµin/in-Â°F @Temperature 32.0 - 932 Â°F	
	15.3 Âµm/m-Â°C @Temperature 0.000 - 600 Â°C	8.50 Âµin/in-Â°F @Temperature 32.0 - 1110 Â°F	
	15.8 Âµm/m-Â°C @Temperature 0.000 - 700 Â°C	8.78 Âµin/in-Â°F @Temperature 32.0 - 1290 Â°F	
	16.3 Âµm/m-Â°C	9.06 Âµin/in-Â°F	

Thermal Properties	Metric @Temperature 0.000 - 300 Â°C	English @Temperature 32.0 - 1490 Â°F	Comments
	16.9 Âµm/m-Â°C	9.39 Âµin/in-Â°F	
	@Temperature 0.000 - 900 Â°C	@Temperature 32.0 - 1650 Â°F	
	17.4 Âµm/m-Â°C	9.67 Âµin/in-Â°F	
	@Temperature 0.000 - 1000 Â°C	@Temperature 32.0 - 1830 Â°F	
Specific Heat Capacity	0.423 J/g-Â°C	0.101 BTU/lb-Â°F	at RT (calculated)
Thermal Conductivity	14.85 W/m-K	103.1 BTU-in/hr-ftÂ²- Â°F	
Melting Point	1265 - 1354 Â°C	2309 - 2469 Â°F	
Solidus	1265 Â°C	2309 Â°F	
Liquidus	1354 Â°C	2469 Â°F	

Optical Properties	Metric	English	Comments
Reflection Coefficient, Visible (0-1)	0.57 - 0.70	0.57 - 0.70	reflecting power

Component Elements Properties	Metric	English	Comments
Carbon, C	0.90 - 1.4 %	0.90 - 1.4 %	
Chromium, Cr	28 - 32 %	28 - 32 %	
Cobalt, Co	50 - 67 %	50 - 67 %	As remainder
Iron, Fe	<= 3.0 %	<= 3.0 %	
Manganese, Mn	<= 2.0 %	<= 2.0 %	
Molybdenum, Mo	<= 1.5 %	<= 1.5 %	
Nickel, Ni	<= 3.0 %	<= 3.0 %	
Silicon, Si	<= 2.0 %	<= 2.0 %	
Tungsten, W	3.5 - 5.5 %	3.5 - 5.5 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000910 ohm-cm	0.0000910 ohm-cm	
	@Temperature 22.0 Â°C	@Temperature 71.6 Â°F	
	<= 1.20		

Electrical Properties	Metric	English	Comments
	@Temperature 22.0 °C	@Temperature 71.6 °F	(15.900 A/m)

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