

Outokumpu 353MA® High Temperature Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

Material Notes:

Alloy with higher nickel content than the other steels. Has increased silicon and nitrogen contents and is microalloyed with rare earth metals (REM). Max service temperature in air is 1150°C, but after service below ~950°C there is a risk for reduced room temperature impact toughness. Applications: Heat and creep resistance. For use over 550°C for equipment and components within: Iron, steel, and non-ferrous industries Engineering industry Energy conservation plants Cement industry Available in hot rolled plate (Quarto) form.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Outokumpu-353MA-High-Temperature-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.90 g/cc	0.285 lb/in ³	RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	720 MPa	104000 psi	Outokumpu Typical, Hot Rolled Strip/Sheet (CPP); EN 10002-1
Tensile Strength, Yield	360 MPa	52200 psi	Outokumpu Typical, Hot rolled Strip/Sheet (CPP); EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	400 MPa	58000 psi	Outokumpu Typical, Hot rolled Strip/Sheet (CPP); EN 10002-1
	@Strain 1.00 %	@Strain 1.00 %	
Elongation at Break	50 %	50 %	Outokumpu Typical, Hot Rolled Strip/Sheet (CPP); EN 10002-1
Rupture Strength	4.50 MPa	653 psi	
	@Temperature 1100 °C, Time 3.60e+7 sec	@Temperature 2010 °F, Time 10000 hour	
	8.00 MPa	1160 psi	
	@Temperature 1000 °C, Time 3.60e+7 sec	@Temperature 1830 °F, Time 10000 hour	
	15.0 MPa	2180 psi	
	@Temperature 900 °C, Time 3.60e+7 sec	@Temperature 1650 °F, Time 10000 hour	
	20.0 MPa	2900 psi	
	@Temperature 850 °C, Time 3.60e+7 sec	@Temperature 1560 °F, Time 10000 hour	
	28.0 MPa	4060 psi	
	@Temperature 800 °C, Time 3.60e+7 sec	@Temperature 1470 °F, Time 10000 hour	

Mechanical Properties	Metric	English	Comments
	@Temperature 750 °C, Time 3.60e+7 sec	@Temperature 1380 °F, Time 10000 hour	
	56.0 MPa	8120 psi	
	@Temperature 700 °C, Time 3.60e+7 sec	@Temperature 1290 °F, Time 10000 hour	
	82.0 MPa	11900 psi	
	@Temperature 650 °C, Time 3.60e+7 sec	@Temperature 1200 °F, Time 10000 hour	
	127 MPa	18400 psi	
	@Temperature 600 °C, Time 3.60e+7 sec	@Temperature 1110 °F, Time 10000 hour	
	206 MPa	29900 psi	
	@Temperature 550 °C, Time 3.60e+7 sec	@Temperature 1020 °F, Time 10000 hour	
Modulus of Elasticity	190 GPa	27600 ksi	RT
	130 GPa	18900 ksi	
	@Temperature 1000 °C	@Temperature 1830 °F	
	160 GPa	23200 ksi	
	@Temperature 500 °C	@Temperature 932 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	16.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.22 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 500 °C	@Temperature 932 °F	
	18.2 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.1 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 1000 °C	@Temperature 1830 °F	
Specific Heat Capacity	0.450 J/g-°C	0.108 BTU/lb-°F	RT
	0.580 J/g-°C	0.139 BTU/lb-°F	
	@Temperature 500 °C	@Temperature 932 °F	
Thermal Conductivity	11.3 W/m-K	78.4 BTU-in/hr-ft ² -°F	RT
	18.5 W/m-K	128 BTU-in/hr-ft ² -°F	
	@Temperature 500 °C	@Temperature 932 °F	
	26.0 W/m-K	180 BTU-in/hr-ft ² -°F	
	@Temperature 1000 °C	@Temperature 1830 °F	

Thermal Properties <small>Temperature, Air</small>	Metric °C	English	Comments
--	-----------	---------	----------

Component Elements Properties	Metric	English	Comments
Carbon, C	0.050 %	0.050 %	
Cerium, Ce	1.3 %	1.3 %	
Chromium, Cr	25 %	25 %	
Iron, Fe	37.18 %	37.18 %	
Nickel, Ni	35 %	35 %	
Nitrogen, N	0.17 %	0.17 %	
Silicon, Si	1.3 %	1.3 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000100 ohm-cm	0.000100 ohm-cm	RT

Processing Properties	Metric	English	Comments
Annealing Temperature	1010 - 1040 °C	1850 - 1900 °F	Stress Relief Annealing (min. 0.5 h)
	1100 - 1150 °C	2010 - 2100 °F	Solution Annealing

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