

Outokumpu SAF 2304® Duplex Stainless Steel

Category : Metal , Ferrous Metal , Duplex , Stainless Steel

Material Notes:

Applications: Pulp and paper industry
Desalination plants
Flue-gas cleaning
Cargo tanks and pipe systems in chemical tankers
Seawater systems
Firewalls and blast walls on offshore platforms
Bridges
Components for structural design
Storage tanks
Pressure vessels
Heat exchangers
Water heaters
Rotors, impellers and shafts
Available in hot rolled plate (Quarto), hot rolled strip/sheet (CPP), cold rolled strip/sheet, and rod forms.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Outokumpu-SAF-2304-Duplex-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	7.80 g/cc	0.282 lb/in ³	RT

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	670 MPa	97200 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	490 MPa	71100 psi	EN min.; EN 10002-5
	@Temperature 250 °C	@Temperature 482 °F	
	500 MPa	72500 psi	EN min.; EN 10002-5
	@Temperature 200 °C	@Temperature 392 °F	
Tensile Strength, Yield	520 MPa	75400 psi	EN min.; EN 10002-5
	@Temperature 150 °C	@Temperature 302 °F	
	540 MPa	78300 psi	EN min.; EN 10002-5
	@Temperature 100 °C	@Temperature 212 °F	
	400 MPa	58000 psi	EN min.,RT; EN 10002-1
Tensile Strength, Yield	@Strain 0.200 %	@Strain 0.200 %	
	450 MPa	65300 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	265 MPa	38400 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 250 °C	@Strain 0.200 %, Temperature 482 °F	
Tensile Strength, Yield	280 MPa	40600 psi	EN min.; EN 10002-5
	@Strain 0.200 %, Temperature 200 °C	@Strain 0.200 %, Temperature 392 °F	
	300 MPa	43500 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.200 %, Temperature 150 °C	@Strain 0.200 %, Temperature 302 °F	EN min.; EN 10002-5
	330 MPa	47900 psi	
	@Strain 0.200 %, Temperature 100 °C	@Strain 0.200 %, Temperature 212 °F	EN min.; EN 10002-5
Elongation at Break	40 %	40 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
Modulus of Elasticity	200 GPa	29000 ksi	RT
	172 GPa	24900 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	180 GPa	26100 ksi	
	@Temperature 300 °C	@Temperature 572 °F	
	186 GPa	27000 ksi	
	@Temperature 200 °C	@Temperature 392 °F	
	194 GPa	28100 ksi	
	@Temperature 100 °C	@Temperature 212 °F	
Poissons Ratio	0.30	0.30	RT
Fatigue Strength	689 MPa	99900 psi	R=smin/smax=0.1; 2 million cycles, F50
	450 MPa	65300 psi	
	@# of Cycles 2.00e+6	@# of Cycles 2.00e+6	R=smin/smax=0.1;RT; 50% probability of failure
	446 MPa	64700 psi	
	@Strain 0.200 %	@Strain 0.200 %	R=smin/smax=0.1; 2 million cycles, F50
Shear Modulus	77.0 GPa	11200 ksi	calculated
Impact Test	>= 60.0 J	>= 44.3 ft-lb	EN 10045-1
	>= 40.0 J	>= 29.5 ft-lb	
	@Temperature -40.0 °C	@Temperature -40.0 °F	EN 10045-1

Thermal Properties	Metric	English	Comments
CTE, linear	13.0 µm/m-°C	7.22 µin/in-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	14.5 µm/m-°C	8.06 µin/in-°F	
	@Temperature 400 °C	@Temperature 752 °F	

Thermal Properties	Metric	English	Comments
	0.530 J/g-°C	0.127 BTU/lb-°F	
	@Temperature 100 °C	@Temperature 212 °F	
	0.560 J/g-°C	0.134 BTU/lb-°F	
	@Temperature 200 °C	@Temperature 392 °F	
	0.590 J/g-°C	0.141 BTU/lb-°F	
	@Temperature 300 °C	@Temperature 572 °F	
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ft²-°F	RT
	16.0 W/m-K	111 BTU-in/hr-ft ² -°F	
	@Temperature 100 °C	@Temperature 212 °F	
	17.0 W/m-K	118 BTU-in/hr-ft ² -°F	
	@Temperature 200 °C	@Temperature 392 °F	
	18.0 W/m-K	125 BTU-in/hr-ft ² -°F	
	@Temperature 300 °C	@Temperature 572 °F	
	20.0 W/m-K	139 BTU-in/hr-ft ² -°F	
	@Temperature 400 °C	@Temperature 752 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	23 %	23 %	
Iron, Fe	71.78 %	71.78 %	
Molybdenum, Mo	0.30 %	0.30 %	
Nickel, Ni	4.8 %	4.8 %	
Nitrogen, N	0.10 %	0.10 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000800 ohm-cm	0.0000800 ohm-cm	RT
	0.0000850 ohm-cm	0.0000850 ohm-cm	
	@Temperature 100 °C	@Temperature 212 °F	
	0.0000900 ohm-cm	0.0000900 ohm-cm	
	@Temperature 200 °C	@Temperature 392 °F	

Electrical Properties	Metric	English	Comments
	1.5E+00 ohm-cm	1.5E+00 ohm-cm	
	@Temperature 300 °C	@Temperature 572 °F	

Processing Properties	Metric	English	Comments
Annealing Temperature	950 - 1050 °C	1740 - 1920 °F	Stress Relief Annealing
	950 - 1050 °C	1740 - 1920 °F	Quench Annealing

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