

Outokumpu 4436 Cr-Ni-Mo Austenitic Stainless Steel

Category : Metal , Ferrous Metal , Austenitic , Stainless Steel

Material Notes:

General purpose steel with excellent corrosion resistance, particularly in the presence of halides. Applications: Filters Braiding for hydraulic hoses Shafts Fasteners Marine components Available in hot rolled plate (Quarto), hot rolled strip/sheet (CPP), cold rolled strip/sheet, cold rolled narrow strip, bar, and rod forms.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Outokumpu-4436-Cr-Ni-Mo-Austenitic-Stainless-Steel.php

Physical Properties	Metric	English	Comments
Density	8.00 g/cc	0.289 lb/in ³	RT

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	165	165	Outokumpu Typical, 20°C, Hot rolled plate (Quarto)/Cold rolled strip/sheet; EN 10003-1
Tensile Strength, Ultimate	590 MPa	85600 psi	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	360 MPa	52200 psi	EN min.; EN 10002-5
	@Temperature 500 °C	@Temperature 932 °F	
	380 MPa	55100 psi	EN min.; EN 10002-5
	@Temperature 300 °C	@Temperature 572 °F	
	380 MPa	55100 psi	EN min.; EN 10002-5
	@Temperature 400 °C	@Temperature 752 °F	
	390 MPa	56600 psi	EN min.; EN 10002-5
@Temperature 200 °C	@Temperature 392 °F		
430 MPa	62400 psi	EN min.; EN 10002-5	
@Temperature 100 °C	@Temperature 212 °F		
840 MPa	122000 psi	EN min; EN 10002-5	
@Temperature -80.0 °C	@Temperature -112 °F		
1200 MPa	174000 psi	EN min; EN 10002-5	
@Temperature -196 °C	@Temperature -321 °F		
Tensile Strength, Yield	220 MPa	31900 psi	EN min.,RT; EN 10002-1
	@Strain 0.200 %	@Strain 0.200 %	
	300 MPa	43500 psi	

Mechanical Properties	Metric @Strain 0.200 %	English @Strain 0.200 %	Comments Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	340 MPa @Strain 1.00 %	49300 psi @Strain 1.00 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	100 MPa @Strain 0.200 %, Temperature 500 °C	14500 psi @Strain 0.200 %, Temperature 932 °F	EN min.; EN 10002-5
	108 MPa @Strain 0.200 %, Temperature 400 °C	15700 psi @Strain 0.200 %, Temperature 752 °F	EN min.; EN 10002-5
	118 MPa @Strain 0.200 %, Temperature 300 °C	17100 psi @Strain 0.200 %, Temperature 572 °F	EN min.; EN 10002-5
	128 MPa @Strain 1.00 %, Temperature 500 °C	18600 psi @Strain 1.00 %, Temperature 932 °F	EN min.; EN 10002-5
	135 MPa @Strain 1.00 %, Temperature 400 °C	19600 psi @Strain 1.00 %, Temperature 752 °F	EN min.; EN 10002-5
	137 MPa @Strain 0.200 %, Temperature 200 °C	19900 psi @Strain 0.200 %, Temperature 392 °F	EN min.; EN 10002-5
	145 MPa @Strain 1.00 %, Temperature 300 °C	21000 psi @Strain 1.00 %, Temperature 572 °F	EN min.; EN 10002-5
	166 MPa @Strain 0.200 %, Temperature 100 °C	24100 psi @Strain 0.200 %, Temperature 212 °F	EN min.; EN 10002-5
	167 MPa @Strain 1.00 %, Temperature 200 °C	24200 psi @Strain 1.00 %, Temperature 392 °F	EN min.; EN 10002-5
	199 MPa @Strain 1.00 %, Temperature 100 °C	28900 psi @Strain 1.00 %, Temperature 212 °F	EN min.; EN 10002-5
	275 MPa @Strain 0.200 %, Temperature -80.0 °C	39900 psi @Strain 0.200 %, Temperature -112 °F	EN min.; EN 10002-5
	350 MPa	50800 psi	

Mechanical Properties	Metric	English	EN min : EN 10002-5 Comments
	@Strain 0.200 %, Temperature -196 °C	@Strain 0.200 %, Temperature -321 °F	
	355 MPa	51500 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature -80.0 °C	@Strain 1.00 %, Temperature -112 °F	
	450 MPa	65300 psi	EN min.; EN 10002-5
	@Strain 1.00 %, Temperature -196 °C	@Strain 1.00 %, Temperature -321 °F	
Elongation at Break	50 %	50 %	Outokumpu Typical, Hot Rolled Plate (Quarto); EN 10002-1
	35 %	35 %	EN min
	@Temperature -196 °C	@Temperature -321 °F	
	40 %	40 %	EN min
	@Temperature -80.0 °C	@Temperature -112 °F	
Modulus of Elasticity	200 GPa	29000 ksi	RT
	165 GPa	23900 ksi	
	@Temperature 500 °C	@Temperature 932 °F	
	172 GPa	24900 ksi	
	@Temperature 400 °C	@Temperature 752 °F	
	179 GPa	26000 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
Shear Modulus	77.0 GPa	11200 ksi	calculated
Impact Test	>= 60.0 J	>= 44.3 ft-lb	Hot rolled plate/Cold rolled strip/sheet, 10x10mm test pieces; EN 10045-1

Thermal Properties	Metric	English	Comments
CTE, linear	16.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	8.89 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 100 °C	@Temperature 212 °F	

Thermal Properties	Metric	English	Comments
	16.5 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.17 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 200 °C	@Temperature 392 °F	
	17.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.44 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 300 °C	@Temperature 572 °F	
	17.5 $\mu\text{m}/\text{m}\cdot\text{°C}$	9.72 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 400 °C	@Temperature 752 °F	
	18.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	10.0 $\mu\text{in}/\text{in}\cdot\text{°F}$	
	@Temperature 500 °C	@Temperature 932 °F	
Specific Heat Capacity	0.500 J/g-°C	0.120 BTU/lb-°F	RT
Thermal Conductivity	15.0 W/m-K	104 BTU-in/hr-ft ² -°F	RT
	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	0.040 %	0.040 %	
Chromium, Cr	16.9 %	16.9 %	
Iron, Fe	69.76 %	69.76 %	
Molybdenum, Mo	2.6 %	2.6 %	
Nickel, Ni	10.7 %	10.7 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000750 ohm-cm	0.0000750 ohm-cm	RT

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