Constellium PLAN 5083 Aluminum Rolled Plate

Category : Metal , Nonferrous Metal , Aluminum Alloy , 5000 Series Aluminum Alloy

Material Notes:

Rolled plates in 5083 PLAN are optimized for minimum residual stress and improved dimensional tolerances. 5083 PLAN is mainly used for low stressed mechanical components, manufactured by intensive machining. Typical applications include parts for printing, packaging and food conditioning machines.Information provided by manufacturer

Order this product through the following link:
http://www.lookpolymers.com/polymer_Constellium-PLAN-5083-Aluminum-Rolled-Plate.php

Physical Properties	Metric	English	Comments
Density	2.66 g/cc	0.0961 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	76 @Thickness 20.0 - 150 mm	76 @Thickness 0.787 - 5.91 in	
	77 @Thickness 5.00 - 20.0 mm	77 @Thickness 0.197 - 0.787 in	
Tensile Strength	>= 255 MPa @Thickness 120 - 150 mm	>= 37000 psi @Thickness 4.72 - 5.91 in	Temper H111; Standard EN 485-2
	>= 260 MPa @Thickness 80.0 - 120 mm	>= 37700 psi @Thickness 3.15 - 4.72 in	Temper H111; Standard EN 485-2
	>= 270 MPa @Thickness 6.30 - 12.5 mm	>= 39200 psi @Thickness 0.248 - 0.492 in	Temper H111; Standard EN 485-2
	>= 270 MPa @Thickness 12.5 - 50.0 mm	>= 39200 psi @Thickness 0.492 - 1.97 in	Temper H111; Standard EN 485-2
	>= 270 MPa @Thickness 50.0 - 80.0 mm	>= 39200 psi @Thickness 1.97 - 3.15 in	Temper H111; Standard EN 485-2
	>= 275 MPa @Thickness 5.00 - 6.30 mm	>= 39900 psi @Thickness 0.197 - 0.248 in	Temper H111; Standard EN 485-2

Mechanical Properties	Metric	English	Comments
	295 MPa @Thickness 5.00 - 20.0 mm	42800 psi @Thickness 0.197 - 0.787 in	Typical Strength
	295 MPa @Thickness 20.0 - 150 mm	42800 psi @Thickness 0.787 - 5.91 in	Typical Strength
Tensile Strength, Yield	>= 105 MPa @Strain 0.200 %, Thickness 120 - 150 mm	>= 15200 psi @Strain 0.200 %, Thickness 4.72 - 5.91 in	Temper H111; Standard EN 485-2
	>= 110 MPa @Strain 0.200 %, Thickness 80.0 - 120 mm	>= 16000 psi @Strain 0.200 %, Thickness 3.15 - 4.72 in	Temper H111; Standard EN 485-2
	>= 115 MPa @Strain 0.200 %, Thickness 6.30 - 12.5 mm	>= 16700 psi @Strain 0.200 %, Thickness 0.248 - 0.492 in	Temper H111; Standard EN 485-2
	>= 115 MPa @Strain 0.200 %, Thickness 12.5 - 50.0 mm	>= 16700 psi @Strain 0.200 %, Thickness 0.492 - 1.97 in	Temper H111; Standard EN 485-2
	>= 115 MPa @Strain 0.200 %, Thickness 50.0 - 80.0 mm	>= 16700 psi @Strain 0.200 %, Thickness 1.97 - 3.15 in	Temper H111; Standard EN 485-2
	>= 125 MPa @Strain 0.200 %, Thickness 5.00 - 6.30 mm	>= 18100 psi @Strain 0.200 %, Thickness 0.197 - 0.248 in	Temper H111; Standard EN 485-2
	140 MPa @Strain 0.200 %, Thickness 20.0 - 150 mm	20300 psi @Strain 0.200 %, Thickness 0.787 - 5.91 in	Typical Strength
	150 MPa @Strain 0.200 %, Thickness 5.00 - 20.0 mm	21800 psi @Strain 0.200 %, Thickness 0.197 - 0.787 in	Typical Strength
Elongation at Break	>= 12 % @Thickness 80.0 - 120 mm	>= 12 % @Thickness 3.15 - 4.72 in	Temper H111; Standard EN 485-2
	>= 12 %	>= 12 %	

Mechanical Properties	Metric	English	Comments
	@Thickness 120 - 150 mm	@Thickness 4.72 - 5.91 in	11; Standard EN 485-2
	>= 14 % @Thickness 50.0 - 80.0 mm	>= 14 % @Thickness 1.97 - 3.15 in	Temper H111; Standard EN 485-2
	>= 15 % @Thickness 5.00 - 6.30 mm	>= 15 % @Thickness 0.197 - 0.248 in	Temper H111; Standard EN 485-2
	>= 15 % @Thickness 12.5 - 50.0 mm	>= 15 % @Thickness 0.492 - 1.97 in	Temper H111; Standard EN 485-2
	>= 16 % @Thickness 6.30 - 12.5 mm	>= 16 % @Thickness 0.248 - 0.492 in	Temper H111; Standard EN 485-2
	22 % @Thickness 20.0 - 150 mm	22 % @Thickness 0.787 - 5.91 in	Typical Elongation
	23 % @Thickness 5.00 - 20.0 mm	23 % @Thickness 0.197 - 0.787 in	Typical Elongation
Modulus of Elasticity	71.0 GPa	10300 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	23.8 µm/m-°C @Temperature 20.0 - 100 °C	13.2 µin/in-°F @Temperature 68.0 - 212 °F	
Thermal Conductivity	105 - 120 W/m-K	729 - 833 BTU-in/hr-ft²-°F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	92.55 - 95.55 %	92.55 - 95.55 %	as balance
Chromium, Cr	0.050 - 0.25 %	0.050 - 0.25 %	
Copper, Cu	<= 0.10 %	<= 0.10 %	
Iron, Fe	<= 0.40 %	<= 0.40 %	
Magnesium, Mg	4.0 - 4.9 %	4.0 - 4.9 %	
Manganese, Mn			

Component Elements Properties	Metric	English	Comments
	0.40 - 1.0 %	0.40 - 1.0 %	
Silicon, Si	<= 0.40 %	<= 0.40 %	
Zinc, Zn	<= 0.25 %	<= 0.25 %	
Zr+Ti	<= 0.15 %	<= 0.15 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000580 - 0.00000660 ohm-cm	0.00000580 - 0.00000660 ohm-cm	

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