

Constellium Certal® SPC Aluminum

Category : Metal , Nonferrous Metal , Aluminum Alloy , 7000 Series Aluminum Alloy

Material Notes:

Certal® SPC has been optimized to provide excellent machinability, good shape stability and high strength properties throughout the plate thickness. Uniform strength is an important property in many types of applications. Typical applications include compression or injection moulds for plastics. Information provided by manufacturer

Order this product through the following link:

http://www.lookpolymers.com/polymer_Constellium-Certal-SPC-Aluminum.php

Physical Properties	Metric	English	Comments
Density	2.76 g/cc	0.0997 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	140	140	
	@Thickness 240 - 305 mm	@Thickness 9.45 - 12.0 in	
	160	160	
	@Thickness 150 - 240 mm	@Thickness 5.91 - 9.45 in	
Tensile Strength	>= 490 MPa	>= 71100 psi	Tempers T651 / T652
	@Thickness 240 - 305 mm	@Thickness 9.45 - 12.0 in	
	>= 510 MPa	>= 74000 psi	Tempers T651 / T652
	@Thickness 150 - 240 mm	@Thickness 5.91 - 9.45 in	
	520 MPa	75400 psi	Tempers T651 / T652
	@Thickness 240 - 305 mm	@Thickness 9.45 - 12.0 in	
	530 MPa	76900 psi	Tempers T651 / T652
	@Thickness 150 - 240 mm	@Thickness 5.91 - 9.45 in	
Tensile Strength, Yield	>= 430 MPa	>= 62400 psi	Tempers T651 / T652
	@Strain 0.200 %, Thickness 240 - 305 mm	@Strain 0.200 %, Thickness 9.45 - 12.0 in	
	>= 440 MPa	>= 63800 psi	Tempers T651 / T652
	@Strain 0.200 %, Thickness 150 - 240	@Strain 0.200 %, Thickness 5.91 - 9.45 in	

Mechanical Properties	mm Metric	Thickness 5.91 - 9.45 in English	Comments
	450 MPa	65300 psi	
	@Strain 0.200 %, Thickness 240 - 305 mm	@Strain 0.200 %, Thickness 9.45 - 12.0 in	Typical Strength
	460 MPa	66700 psi	
	@Strain 0.200 %, Thickness 150 - 240 mm	@Strain 0.200 %, Thickness 5.91 - 9.45 in	Typical Strength
Elongation at Break	>= 2.0 %	>= 2.0 %	Tempers T651 / T652
	@Thickness 240 - 305 mm	@Thickness 9.45 - 12.0 in	
	>= 4.0 %	>= 4.0 %	Tempers T651 / T652
	@Thickness 150 - 240 mm	@Thickness 5.91 - 9.45 in	
	5.0 %	5.0 %	Typical Elongation
	@Thickness 240 - 305 mm	@Thickness 9.45 - 12.0 in	
	7.0 %	7.0 %	Typical Elongation
	@Thickness 150 - 240 mm	@Thickness 5.91 - 9.45 in	
Modulus of Elasticity	72.0 GPa	10400 ksi	tensile
	73.0 GPa	10600 ksi	compression

Thermal Properties	Metric	English	Comments
CTE, linear	23.6 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	13.1 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 20.0 - 100 $^{\circ}\text{C}$	@Temperature 68.0 - 212 $^{\circ}\text{F}$	
Specific Heat Capacity	0.873 J/g- $^{\circ}\text{C}$	0.209 BTU/lb- $^{\circ}\text{F}$	
Thermal Conductivity	150 W/m-K	1040 BTU-in/hr-ft ² - $^{\circ}\text{F}$	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	88.9 - 92.45 %	88.9 - 92.45 %	as balance
Chromium, Cr	<= 0.10 %	<= 0.10 %	
Copper, Cu	0.50 - 1.0 %	0.50 - 1.0 %	
Iron, Fe	<= 0.35 %	<= 0.35 %	

Component Elements Properties	Metric	English	Comments
Manganese, Mn	<= 0.10 %	<= 0.10 %	
Silicon, Si	<= 0.25 %	<= 0.25 %	
Titanium, Ti	<= 0.15 %	<= 0.15 %	
Zinc, Zn	4.3 - 5.2 %	4.3 - 5.2 %	
Zirconium, Zr	0.15 - 0.25 %	0.15 - 0.25 %	

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