

Constellium ALPLAN® 6061 Rolled Precision Aluminum Plate, Milled Both Sides

Category : Metal , Nonferrous Metal , Aluminum Alloy , 6000 Series Aluminum Alloy

Material Notes:

Precision plates in ALPLAN® 6061 are milled on both sides and have a very low level of residual stress, thus avoiding excessive deformation during machining. Thanks to its very good dimensional stability and the elimination of surface milling operations, ALPLAN® 6061 plates enable to realize significant cost and time savings in machining, when compared to normal rolled plates. Information provided by manufacturer

Order this product through the following link:

http://www.lookpolymers.com/polymer_Constellium-ALPLAN-6061-Rolled-Precision-Aluminum-Plate-Milled-Both-Sides.php

| Physical Properties | Metric | English | Comments |
|---------------------|-----------|---------------------------|----------|
| Density | 2.70 g/cc | 0.0975 lb/in ³ | |

| Mechanical Properties | Metric | English | Comments |
|-----------------------|---------------------------|-----------------------------|--------------------------------|
| Hardness, Brinell | 100 | 100 | |
| | @Thickness 7.90 - 25.0 mm | @Thickness 0.311 - 0.984 in | |
| | 100 | 100 | |
| | @Thickness 60.0 - 150 mm | @Thickness 2.36 - 5.91 in | |
| | 105 | 105 | |
| | @Thickness 25.0 - 60.0 mm | @Thickness 0.984 - 2.36 in | |
| Tensile Strength | >= 275 MPa | >= 39900 psi | Temper T651; Standard EN 485-2 |
| | @Thickness 100 - 140 mm | @Thickness 3.94 - 5.51 in | |
| | >= 290 MPa | >= 42100 psi | Temper T651; Standard EN 485-2 |
| | @Thickness 7.90 - 12.5 mm | @Thickness 0.311 - 0.492 in | |
| | >= 290 MPa | >= 42100 psi | Temper T651; Standard EN 485-2 |
| | @Thickness 12.5 - 40.0 mm | @Thickness 0.492 - 1.57 in | |
| | >= 290 MPa | >= 42100 psi | Temper T651; Standard EN 485-2 |
| | @Thickness 40.0 - 80.0 mm | @Thickness 1.57 - 3.15 in | |
| | >= 290 MPa | >= 42100 psi | Temper T651; Standard EN 485-2 |

| Mechanical Properties | @Thickness 80.0 - 100 Metric | @Thickness 3.15 - 3.94 English | Comments |
|-------------------------|--|--|--------------------------------|
| | 320 MPa | 46400 psi | Typical Strength |
| | @Thickness 60.0 - 150 mm | @Thickness 2.36 - 5.91 in | |
| | 325 MPa | 47100 psi | Typical Strength |
| | @Thickness 7.90 - 25.0 mm | @Thickness 0.311 - 0.984 in | |
| | 330 MPa | 47900 psi | Typical Strength |
| | @Thickness 25.0 - 60.0 mm | @Thickness 0.984 - 2.36 in | |
| Tensile Strength, Yield | >= 240 MPa | >= 34800 psi | Temper T651; Standard EN 485-2 |
| | @Strain 0.200 %, Thickness 7.90 - 12.5 mm | @Strain 0.200 %, Thickness 0.311 - 0.492 in | |
| | >= 240 MPa | >= 34800 psi | Temper T651; Standard EN 485-2 |
| | @Strain 0.200 %, Thickness 12.5 - 40.0 mm | @Strain 0.200 %, Thickness 0.492 - 1.57 in | |
| | >= 240 MPa | >= 34800 psi | Temper T651; Standard EN 485-2 |
| | @Strain 0.200 %, Thickness 40.0 - 80.0 mm | @Strain 0.200 %, Thickness 1.57 - 3.15 in | |
| | >= 240 MPa | >= 34800 psi | Temper T651; Standard EN 485-2 |
| | @Strain 0.200 %, Thickness 80.0 - 100 mm | @Strain 0.200 %, Thickness 3.15 - 3.94 in | |
| | >= 240 MPa | >= 34800 psi | Temper T651; Standard EN 485-2 |
| | @Strain 0.200 %, Thickness 100 - 140 mm | @Strain 0.200 %, Thickness 3.94 - 5.51 in | |
| | 285 MPa | 41300 psi | Typical Strength |
| | @Strain 0.200 %, Thickness 60.0 - 150 mm | @Strain 0.200 %, Thickness 2.36 - 5.91 in | |
| | 295 MPa | 42800 psi | Typical Strength |
| | @Strain 0.200 %, Thickness 7.90 - 25.0 mm | @Strain 0.200 %, Thickness 0.311 - 0.984 in | |
| | 295 MPa | 42800 psi | Typical Strength |
| | @Strain 0.200 %, Thickness 25.0 - 60.0 | @Strain 0.200 %, Thickness 0.984 - 2.36 | |

| Mechanical Properties | mm Metric | in English | Comments |
|---------------------------|-----------------------------|--------------------------------|--------------------------------|
| Elongation at Break | >= 5.0 % | >= 5.0 % | Temper T651; Standard EN 485-2 |
| | @Thickness 80.0 - 100 mm | @Thickness 3.15 - 3.94 in | |
| | >= 5.0 % | >= 5.0 % | Temper T651; Standard EN 485-2 |
| | @Thickness 100 - 140 mm | @Thickness 3.94 - 5.51 in | |
| | >= 6.0 % | >= 6.0 % | Temper T651; Standard EN 485-2 |
| | @Thickness 40.0 - 80.0 mm | @Thickness 1.57 - 3.15 in | |
| | >= 8.0 % | >= 8.0 % | Temper T651; Standard EN 485-2 |
| @Thickness 12.5 - 40.0 mm | @Thickness 0.492 - 1.57 in | | |
| >= 9.0 % | >= 9.0 % | Temper T651; Standard EN 485-2 | |
| @Thickness 7.90 - 12.5 mm | @Thickness 0.311 - 0.492 in | | |
| | 11 % | 11 % | Typical Elongation |
| | @Thickness 60.0 - 150 mm | @Thickness 2.36 - 5.91 in | |
| | 12 % | 12 % | Typical Elongation |
| | @Thickness 7.90 - 25.0 mm | @Thickness 0.311 - 0.984 in | |
| | 12 % | 12 % | Typical Elongation |
| | @Thickness 25.0 - 60.0 mm | @Thickness 0.984 - 2.36 in | |
| Modulus of Elasticity | 69.0 GPa | 10000 ksi | |

| Thermal Properties | Metric | English | Comments |
|----------------------|--|--|-------------|
| CTE, linear | 23.4 $\mu\text{m}/\text{m}\cdot\text{C}$ | 13.0 $\mu\text{in}/\text{in}\cdot\text{F}$ | |
| | @Temperature 20.0 - 100 $^{\circ}\text{C}$ | @Temperature 68.0 - 212 $^{\circ}\text{F}$ | |
| Thermal Conductivity | 150 - 170 W/m-K | 1040 - 1180 BTU-in/hr-ft ² - $^{\circ}\text{F}$ | Temper T651 |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|-----------------|-----------------|------------|
| Aluminum, Al | 96.15 - 98.61 % | 96.15 - 98.61 % | as balance |
| Chromium, Cr | 0.040 - 0.35 % | 0.040 - 0.35 % | |

| Component Elements Properties | Metric | English | Comments |
|-------------------------------|---------------|---------------|----------|
| Iron, Fe | <= 0.70 % | <= 0.70 % | |
| Magnesium, Mg | 0.80 - 1.2 % | 0.80 - 1.2 % | |
| Manganese, Mn | <= 0.15 % | <= 0.15 % | |
| Silicon, Si | 0.40 - 0.80 % | 0.40 - 0.80 % | |
| Zinc, Zn | <= 0.25 % | <= 0.25 % | |

| Electrical Properties | Metric | English | Comments |
|------------------------|-----------------------------------|-----------------------------------|-------------|
| Electrical Resistivity | 0.00000380 - 0.00000430 ohm-cm | 0.00000380 - 0.00000430 ohm-cm | Temper T651 |

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