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Technical Datasheet

PERALUMAN®-460

EN AW-5083 / Al Mg4,5Mn0,7

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BRIEF DESCRIPTION

Alcan alloy Peraluman®-460 is used for apparatus and machine parts which are subjected to moderate stress.

Examples include welded machines and assemblies, shipbuilding, pressure vessels and cryogenic apparatus.

PROCESSING METHODS

Weldability

• TIG/MIG	excellent
Filler alloy	AA 5183 AA 5356
• by resistance	excellent

Anodizing

• technical	excellent
• decorative	moderate

Machinability good

Corrosion behaviour

- excellent in inland atmosphere
- good in marine atmosphere

AVAILABILITY

Peraluman®-460 plates are available in tempers H111 or H112 (annealed - stretched) in the following dimensions:

Thickness	Max. width
8.0 - 140 mm	2200 mm
141 - 150 mm	1950 mm

For thicknesses above 150 mm, the alloy Fibral® is recommended.

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti +Zr
max. 0.4	max. 0.4	max. 0.10	0.40 1.00	4.0 4.9	0.05 0.25	max. 0.25	max 0.15

PHYSICAL PROPERTIES (nominal values)

Density	2.66 g/cm^3
Elastic Modulus	71000 MPa
Lin. thermal expansion coefficient (20°-100°C)	23.8 10^{-6} K^{-1}
Thermal conductivity	105 - 120 W/mK
Electrical conductivity (20°C)	15 - 17 MS/m

MECHANICAL STRENGTH

Min. tensile properties (Standards EN 485-2, ASTM B209M)

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
Tempers 0	(EN 485-2:2008, ASTM B209M-07)		
H111	(EN 485-2:2008)		
7.9 -12.5 mm	270 - 345	115	16
12.5 - 50 mm	270 - 345	115	15
50 - 80 mm	270 - 345	115	14
80 - 120 mm	260	110	12
120 - 150 mm	255	105	12
Temper H112 (EN 485-2:2008, ASTM B209-07)			
7.9 -12.5 mm	275	125	12
12.5 - 40 mm	275	125	10
40 - 80 mm	270	115	10
80 - 120 mm*	260	110	10

* only according to EN 485-2:2008

Typical strength at various thicknesses
Temper H111

Thickness (over ... to)	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
7.9 - 60 mm	295	150	23	77
60 - 150 mm	290	150	22	75

Prolonged exposure to temperatures exceeding 70°C can provoke susceptibility to intercrystalline corrosion.