



SPECIAL ALLOYS FOR MOULDS

WELDURAL®

Weldural® has been developed to provide the best possible mechanical stability over a temperature range of up to 250°C. Even when exposed to heat for over 1,000 hours, the resistance is significantly higher than that of 7075 alloy.



CHEMICAL COMPOSITION (WEIGHT %)

ELEMENTS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Zr	Ti
Minimum	-	-	5.8	0.2	-	-	-	0.10	0.02
Maximum	0.3	0.4	6.8	0.4	0.10	0.05	0.10	0.25	0.10

Information transcribed from the supplier datasheet.

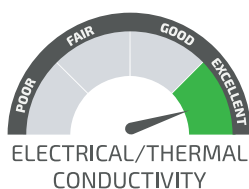


MAIN CHARACTERISTICS

- Very good thermal conductivity
- Excellent electrical conductivity
- Greater thermal stability
- Excellent dimensional stability
- Very good machining and polishing
- High wear resistance
- Extremely uniform mechanical properties
- Excellent weldability
- Good resistance to corrosion

APPLICATIONS

- Injection and blow moulds
- Moulds for high temperature parts
- High precision mechanical parts (requires high dimensional stability)
- Moulds with welded constructions
- Refrigeration engineering
- Machine elements





MECHANICAL PROPERTIES

THICKNESSES (mm)	R _m (MPa)	R _{p0.2} (MPa)	A ₅₀ (%)	HB - BRINELL HARDNESS
100	449	335	8.9	130
200	436	329	6.8	130
300	427	327	4.0	130

Typical traction properties at room temperature; measured by S/4;
test direction L-T

Information transcribed from the supplier datasheet.

PHYSICAL PROPERTIES

DENSITY	2.84 g/cm ³
MODULUS OF ELASTICITY	73 800 MPa
LINEAR EXPANSION COEFFICIENT	22.5 10 ⁻⁶ /K
THERMAL CONDUCTIVITY	130 W/mK
ELECTRICAL CONDUCTIVITY	17.4 m/Ohm mm ²

DELIVERY PROGRAM ON REQUEST.

ADVANTAGES OF WELDURAL®

- Resistance to high temperatures (to long term heating)
- Suitable for welding
- Superior thermal conductivity
- High and uniform mechanical properties across the entire thickness
- High dimensional stability due to low residual stress
- Excellent machinability

TYPICAL RESISTANCE PROPERTIES UNDER TEMPERATURE INFLUENCE

TEMPERATURE (°C)	R _m (MPa)	R _{p0.2} (MPa)	A (%)
24	449	335	9
100	414	324	15
149	338	276	17
204	248	200	20

TYPICAL RESISTANCE PROPERTIES UNDER LONG TERM TEMPERATURE INFLUENCE¹

TEMPERATURE (°C)	R _m (MPa)	R _{p0.2} (MPa)	A (%)
24	272	161	20
100	253	155	24.2
149	198	150	26.2
204	138	135	37.5

¹Measured in S / 4 after 1000 h under test temperature; S / 4 corresponds to 25% of the thickness depth