

Mechanism and wire specifications

Physical properties		
Density	6700 kg/m ³ at 21 °C	
Solidification shrinkage	1.17 %	
Casting shrinkage	0.6 % (pressure diecasts)	
Freezing range	-381 to -387 °C	
Melting point	400 to 420 °C	
Specific heat capacity	418.1 J/kg/°C at 20 to 100 °C	
Thermal expansion	27 10 (-6) linear per °C at 20 to 100 °C	
Thermal conductivity	108.9 W/m/hr/m ² /°C at 70 to 140 °C	
Electrical conductivity	26 % IACS	
Electrical resistivity	6.5359 um ohm cm at 20 °C	
Mechanical properties		
	As cast	Aged
Tensile strength (MPa)	328	269
Shear strength (MPa)	262	–
Elongation (% in 51 mm)	7	13
Hardness (Brinell – 500 kg)	91	80
Impact strength (Energy, Joules)	65.1	54.2
Fatigue strength 5 x 10 cycles (MPa)	56.5	–
Typical analysis – alloying elements		
Aluminium	4 %	
Copper	1 %	
Magnesium	0.05 %	
Typical analysis – impurities		
Iron	< 0.01 %	
Lead	< 0.003 %	
Cadmium	0.003 %	
Tin	< 0.001 %	
Nickel	< 0.001 %	
Silicon	< 0.01 %	

Galvanised wire

Wire type	MBL ¹ of wire rope (kg)	Construction (RHRL)	Tensile strength (N/mm ²)
1	78	7 x 7 (6/1)	1960
2	290	7 x 7 (6/1)	1960
3	645	7 x 7 (6/1)	1960
4	1240	7 x 19 (6/1)	1960
5	2804	7 x 19 (6/1)	1960

1 : Minimum Breaking Load

Stainless steel wire

Wire type	SWL ² of wire rope (kg)	Grade
1	8	AISI 316
2	45	AISI 316
3	100	AISI 316
4	200	AISI 316

2 : Safe Working Load

Angular performance

The table below shows the effect on the safe working load when working at an angle from the vertical when using just the wire and mechanism

Wire type ³	Vertical	15°	30°	45°	60°
1	10.0 kg	9.6 kg	8.6 kg	7.0 kg	5.0 kg
2	50.0 kg	48.0 kg	43.0 kg	35.0 kg	25.0 kg
3	120.0 kg	115.2 kg	103.2 kg	84.0 kg	60.0 kg
4	230.0 kg	220.8 kg	197.8 kg	161.0 kg	115.0 kg
Load reduction by % for all other ranges					
LOAD	100 %	96 %	86 %	70 %	50 %

3 : When using wire and mechanism

Cross-section of wires

