

C18070

STOL® 75 - CuCrSiTi

Alloy Designation	STOL® 75
EN	CuCrSiTi
DIN CEN/TS 13388	
UNS	C18070

Chemical Composition (Balance)		
Weight percentage		
Cu	Rest	%
Cr	0.3	%
Si	0.02	%
Ti	0.1	%

Characteristics

STOL® 75 is a CuCrSiTi alloy that can be hardened by cold forming and by precipitation during a heat treatment. This alloy provides a good combination of high electrical conductivity, good strength, good bendability, excellent hot and cold forming properties and a good corrosion resistance.

Due to the Precipitations the relaxation properties, even at temperatures up to 200 °C are excellent.

Main Applications

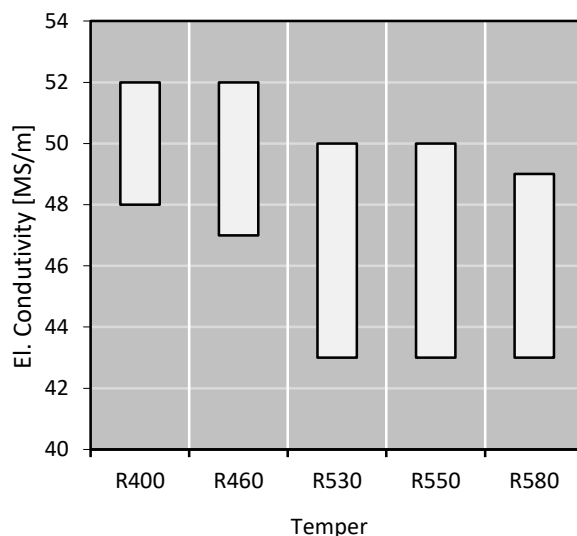
E-Mobility, Hybrid Applications, Electrical contacts, Automotive Connectors, Photovoltaic-Systems and Electronic Components.

Mechanical Properties (EN 1652)						
Temper	Tensile Strength	Yield Strength Minimum	Elongation Minimum	Hardness	Bending 90°	
	Rm	Rp0.2	A50mm	HV *	gw rel. Bending Radius R/T	bw
	MPa	MPa	%	HV	Strip Thickness ≤ 0.50mm	
R400	400 .. 480	300	10	120 .. 150	0	0
R460	460 .. 560	400	9	140 .. 170	0.5	0.5
R530	530 .. 610	460	8	150 .. 190	1	1
R550	550 .. 630	520	7	150 .. 190	1	1
R580	580 .. 640	550	6	160 .. 200	1,5	1,5

* only for information

Physical Properties			
Typical values in annealed temper at 20 °C			
Density		8.93	g/cm ³
Thermal expansion coefficient	20 .. 300 °C	18.0	10 ⁻⁶ /K
Specific heat capacity		0.38	J/(g·K)
Thermal conductivity		310	W/(m·K)
Electrical conductivity	MS/m	48	MS/m
Electrical conductivity	IACS	83	%
Thermal coefficient of electrical resistance	(0 .. 100 °C)	3	10 ⁻³ /K
Modulus of elasticity	GPa	135	GPa

Electrical Conductivity



Fabrication Properties *

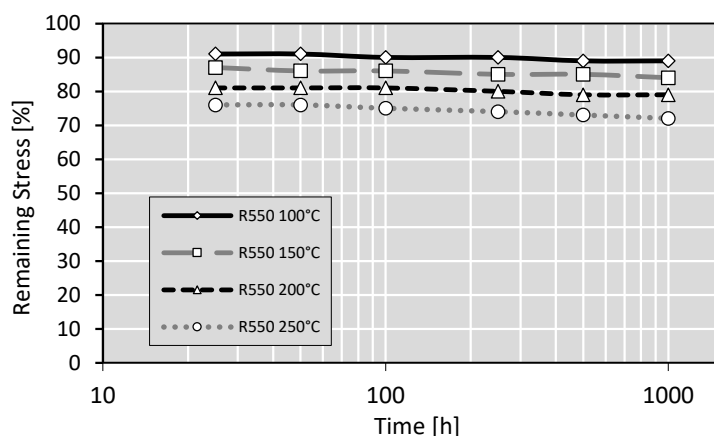
Cold Forming Properties	Good
Machinability (Rating 20)	Less suitable
Electroplating Properties	Good
Hot Tinning Properties	Good
Soft Soldering, Brazing	Good
Resistance Welding	Less suitable
Gas Shielded Arc Welding	Excellent
Laser Welding	Fair

* For more details call our technical service

Corrosion Resistance *

STOL® 75 is resistant to pure water vapour and non oxidizing acids and alkalis as well as neutral saline solutions. The material is insensitive to stress corrosion cracking.

Relaxation Properties



Relaxation values give an indication about stress relieve of strip under tension for a certain time and temperature. Typical test sample thickness is 0.3 – 0.6 mm.

Initial Stress
80% von $R_{p0.2}$
Parallel Rolling Direction

Bend Fatigue (at room temperature)

The fatigue strength gives an indication about the resistance to variations in applied tension. It is measured under symmetrical alternating load. The maximum bending load for 10^7 load cycles without crack is measured. Dependent on the temper class it is approximately 1/3 of the tensile strength R_m .

Available delivery forms *

- Strips in coils
- Traverse-wound coils with drum weights up to 1.5 t
- TECSTRIP®_multicoil up to 2.5 t
- Hot-Dip-Tinned strips in thickness range 0.10 up to 1.20 mm

* For more details call our sales service

Due to continued improvements within our production process, the details stated in our brochure can not be guaranteed. We reserve the right to update or amend our products, without prior notification. We suggest that you obtain confirmation of our product details / specifications prior to committing to specific alloys.