

Wieland-SW3

Lead-free special brass

Extruded/drawn products

Wieland-SW3 is a lead-free special brass resisting high load and exhibiting good corrosion resistance and machinability.

The alloy is suitable for the manufacture of sand, gravity die and low pressure die castings.

Through the addition of a grain refiner ECOCAST® has a very fine grain in the cast condition already.

ECOCAST® is approved for drinking water applications.

Composition*

Cu	76 %
Si	3 %
P	0.03 %
Zn	balance

Material designation

not standardized

* Reference values in % by weight

Physical properties*

Electr. conduct. MS/m	4.5
Electr. conduct. % IACS	7.8
Therm. conductivity W/(m*K)	33
Density g/cm ³	8.25
Mod. of elast. kN/mm ²	approx. 85

* Reference values at room temperature
1 GPa = 1kN/mm²
1 MS/m = 1 m/Ω • mm²

Fabrication properties

Forming

Machinability (CuZn39Pb3 = 100 %)	80%
Cold working properties	good
Hot working properties	excellent

Joining

Resistance welding	good
Inert gas shield. arc weld.	good
Hard soldering	excellent
Soft soldering	excellent

Surface treatment

Polishing mechanical	good
Electroplating	good (like Z33)

Heat treatment

Melting range	860 - 925°C
Solidus temperature	860°C
Liquidus temperature	925°C
Hot working	750 - 800°C
Soft annealing	530 - 700°C
Thermal stress relieving	300 - 400°C

Corrosion resistance

Through alloying additions, special brass generally exhibits excellent corrosion resistance.

The addition of silicon increases resistance to tarnishing and reduces susceptibility to stress corrosion cracking and dezincification.

The material is seawater-resistant

Product standards

Mechanical properties

Reference values	Cast condition	Tensile bar
R _m [N/mm ²]	500	520
R _{p0.2} [N/mm ²]	160	200
A ₅ [%]	40	35
HB2.5		120

Forms and sizes available

Material			
Wieland	EN designation		
	Brief designation	Number	
SW3	CuZn21Si3	not standardized	As ingots or cont. cast prod. Ingot weight approx. 6 kg or 12 kg

Wieland

Wieland-Werke AG
89070 Ulm
Germany
Phone: +49 (0) 731 944-0
Fax: +49 (0) 731 944-2879
info@wieland.de
www.wieland.de/ecobrass

This leaflet is for your general information only and is not subject to revision. No claims can be derived from it unless there is evidence of intent or gross negligence. The data given are no warranty that the product is of a specified quality and they cannot replace expert advice or the customer's own tests.