

## 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

UNS	C87850
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\* 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 <sup>3</sup>	8.25
Mod. of elast. kN/mm <sup>2</sup>	approx. 85

\* Reference values at room temperature  
1 GPa = 1kN/mm<sup>2</sup>  
1 MS/m = 1 m/Ω • mm<sup>2</sup>

#### 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 <sub>m</sub> [N/mm <sup>2</sup> ]	500	520
R <sub>p0.2</sub> [N/mm <sup>2</sup> ]	160	200
A <sub>5</sub> [%]	40	35
HB2.5		120

## Forms and sizes available

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

# Wieland

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