

Wieland-G12

CuSn12-C-GC | Red brass

Material designation

EN CuSn12-C-GC
CC483K

UNS –

Chemical composition*

Cu 86 %

Sn 12 %

Pb 0.5 %

Ni max. 0.2 %

*Reference values in % by weight

Physical properties*

Electrical conductivity MS/m 6.3
%IACS 11

Thermal conductivity W/(m·K) 55

Thermal expansion coefficient (0–300 °C) 10⁻⁶/K 18.5

Density g/cm³ 8.9

Modulus of elasticity GPa 95

*Reference values at room temperature

Corrosion resistance

Cast alloys belong to the most corrosion-resistant copper alloys. They exhibit excellent resistance to atmospheric influences, carbonic acid and saline water. Also important is their resistance to seawater and their insensitivity to stress corrosion cracking.

Product standards

Cast alloys EN 1982

Material properties and typical applications

Wieland-G12 belongs to the group of cast copper-tin alloys. Apart from good sliding properties it exhibits high wear resistance. Due to the high tin content Wieland-G12 is harder than Wieland-G07 which has to be taken into consideration in the selection of the shaft material. Wieland-G12 is the standard alloy among the cast copper tin alloys.

For slide bearings hard shafts are recommended and edge load is to be avoided, especially if the permissible maximum loads and sliding speeds are to be utilized.

Examples of applications: main spindle bearings, of machine tools requiring highest precision such as precision gears, piston pin bushings, press bearings, highly stressed spindle nuts, high-speed worm wheels and worm wheel rims.

Types of delivery

The BU Extruded Products supplies bars, wire, sections and tubes. Please get in touch with your contact person regarding the available delivery forms, dimensions and tempers.

Fabrication properties

Forming

Machinability 50 %
(CuZn39Pb3 = 100 %)

Capacity for being cold worked not possible

Capacity for being hot worked not possible

Heat treatment

Melting range 830–1000 °C

Thermal stress relieving 250–400 °C
2–4 h

Mechanical properties, reference values

	Tensile strength R _m MPa	Yield strength R _{p0.2} MPa	Elongation A %	Hardness HBW
Continuous casting	300	150	6	90