



GLIDCOP AL-60

Dispersion strengthened copper

GLIDCOP AL-60 applications

GLIDCOP AL-60 (C15760) is primarily designed for applications requiring the highest elevated temperature strength coupled with relatively high electrical and thermal conductivities. It exhibits a high degree of resistance to softening after exposure to elevated temperatures. GLIDCOP AL-60 has sufficient cold working characteristics for heading, extrusion and some drawing and rolling operations.

Recommended for:

- Resistance welding electrodes
- Solder gun tips and MIG contact tips
- Welding electrodes made from GLIDCOP exhibit improved life
- Good non-sticking performance on coated steels

For applications requiring brazed joints and/or extended high temperature exposure in hydrogen-containing atmospheres or vacuum, Low Oxygen* (LOX) GLIDCOP is available and recommended.

Description

GLIDCOP AL-60 is a high alumina content grade of dispersion strengthened copper. It consists of a pure copper matrix containing finely dispersed sub-microscopic particles of Al_2O_3 which act as a barrier to dislocation movement. The dispersed Al_2O_3 is thermally stable so that it acts to retard recrystallization of the copper. Consequently, significant softening does not occur as the result of high temperature exposure. Along with superior strength retention, thermal and electrical conductivities are higher than conventional copper alloys.

GLIDCOP AL-60 is designated in UNS as C15760. This grade is available as rod and bar stock, strip and strip reroll, and large rounds. Some forms are available with or without an oxygen free copper cladding. Unless specified as “declad”, GLIDCOP is supplied with cladding.

**Note: Low Oxygen GLIDCOP*

Physical properties

| | | |
|---|---------------------------------|---|
| Melting Point | 1083 °C | 1981 °F |
| Density | 8.81 g/cm ³ at 20 °C | 0.318 lbs./in ³ at 68 °F |
| Electrical Conductivity (σ) | 0.452 $\mu \Omega$ -cm at 20 °C | 78% IACS at 68 °F |
| Thermal Conductivity (K) | 322 W/m/K at 20 °C | 186 Btu/ft ² /ft/hr/ °F at 68 °F |
| Electrical Resistivity (ρ) | 2.21 $\mu \Omega$ -cm at 20 °C | 13.29 Ω circular-mil/ft. at 68 °F |
| Coefficient of Thermal Expansion | 16.6 μ m/m/ °C (20-150 °C) | 9.2 μ in/in/ °F (68-300 °F) |
| Modulus of Elasticity (Tension) (λ) | 130 Gpa | 19 x 10 ⁶ psi |

Mechanical properties

Typical room temperature properties of GLIDCOP AL-60

| Shapes | Thickness or Dia. | | Temper or Condition | Tensile Strength | | Yield Strength | | Elongation % | Hardness HRB |
|---------------|-------------------|-------|------------------------|------------------|-----|----------------|-----|-----------------|-----------------|
| | mm | in | | MPa | ksi | MPa | ksi | | |
| Flat products | 10 | 0.400 | As Cons.* | 517 | 75 | 413 | 60 | 13 | 81 |
| | 2.5 | 0.100 | CW**75% | 627 | 91 | 572 | 83 | 8 | 85 |
| | 0.15 | 0.006 | CW 98% | 737 | 107 | 655 | 95 | 6 | - |
| Rod | 14 | 0.54 | As Cons. | 551 | 80 | 517 | 75 | 22 | 80 |
| | 13 | 0.5 | CW 14% | 572 | 83 | 544 | 79 | 16 | 83 |
| | 7 | 0.275 | CW 74% | 620 | 90 | 599 | 87 | 14 | 86 |
| | 64 | 2.5 | As Cons. | 496 | 72 | 475 | 69 | 4 | 80 |
| Rounds | Up to 760 | 30 | As Cons. | 469 | 68 | 331 | 48 | 4 | 76 |

* As Consolidated ** Cold Work: % reduction in area

Composition GLIDCOP AL-60

Aluminum: 0.60% by wt. as Al₂O₃

Copper: Balance

Samples and services

For further information or sample quantities for test, contact our Customer Service Department.

Material Safety Data

See MSDS before using this product.



Scan the QR code for more information about GLIDCOP and other Höganäs products.