

OF-OK®

Oxygen-free, High Conductivity Copper (OF) –102 alloy (99.99 % minimum Cu) offers the advantages of Electrolytic Tough Pitch Copper (ETP) –110 alloy and Phosphor Deoxidized Copper (DHP) – 122 alloy. The high purity and absence of deoxidisers accounts for electrical conductivity of 100 % IACS as well as no susceptibility for hydrogen embrittlement. Due to the absence of oxides in the structure, OF-OK is capable of withstanding critical electrical, electronic and communication applications

Properties

- High electrical conductivity min. 100 % IACS
- High thermal conductivity
- Good formability and weldability
- Excellent corrosion resistance
- Resists hydrogen embrittlement
- Low metal volatility in vacuum
- High scrap value

Composition

- Cu min 99,99 %
- Oxygen-free (O2 max 10 ppm), high conductivity copper

Typical applications

Electrical and electronic applications, telecommunication cables, printed circuits



OF-OK

European standard number CW008A
 UNS code C10200
 Manufacturing location Pori

Chemical properties

O max 10 ppm

Physical Properties

Density
 g/cm³ 8.9
 lb/in³ 0.323
 Electrical Conductivity****
 (Nominal value in black) min 100
 %IACS min 100
 Thermal Conductivity
 W/(m °K) min 391
 Btu/ft h °F min 226
 Modulus of Elasticity
 GPa 117
 X1000 ksi 17
 Coef. of Thermal Exp.
 at 20 °C (68 °F)
 10⁻⁶/°C 17.6
 10⁻⁶/°F 9.8

Tempers

Mechanical Properties

EN H040 / R200
 Tensile Strength Rm N/mm² 200 - 250
 Yield Strength (0.2 %) N/mm² max 100
 Elongation % A50 / A min - / 42
 Hardness (HV) 40 - 65
 Thickness mm (Pori) 0.2 - 20

EN H040 / R220
 Tensile Strength Rm N/mm² 220 - 260
 Yield Strength (0.2 %) N/mm² max 140
 Elongation % A50 / A min 33 / 42
 Hardness (HV) 40 - 65
 Thickness mm (Pori) 0.2 - 20

EN H065 / R240
 Tensile Strength Rm N/mm² 240 - 300
 Yield Strength (0.2 %) N/mm² min 180
 Elongation % A50 / A min 8 / 15
 Hardness (HV) 65 - 95
 Thickness mm (Pori) 0.2 - 6, 12 - 25

EN H090 / R290
 Tensile Strength Rm N/mm² 290 - 360
 Yield Strength (0.2 %) N/mm² min 250
 Elongation % A50 / A min 4 / 6
 Hardness (HV) 90 - 110
 Thickness mm (Pori) 0.2 - 25

EN H110 / R360
 Tensile Strength Rm N/mm² min 360
 Yield Strength (0.2 %) N/mm² min 320
 Elongation % A50 / A min 2 /
 Hardness (HV) min 110
 Thickness mm (Pori) 0.2 - 20

Data for information only and not for use as purchase specification.
 Other tempers - as ASTM - are available upon request.
 Yield strength, Elongation and Hardness are typical values for each temper.
 Elongation: The first value is for thickness up to and incl. 0.25 mm / next is > 0.25 mm
 *) Pori: Electrical conductivity according to EN 13599
 Pori: Thicknesses up to 100 mm available in hot roller temper. For strips in coils max. thickness 4 mm. Material thicknesses for building purposes typically 0.5 -2 mm.