

Cu-HCP

High conductivity phosphorous copper (P content 20...70 ppm), earlier known as SE-Cu57.

Properties

- Good electrical and thermal conductivity
- Resists hydrogen embrittlement
- Excellent corrosion resistance
- Excellent formability
- Good weldability
- Recyclable

Composition

- Cu min 99,95 %
- P 20...70 ppm

Electrical conductivity

- min 98,3 % IACS

According to EN

- H040 min 98,3 % IACS, H065-90 min 96,6 % IACS, H110 min 94,8 % IACS

Typical applications

Cooling elements, power distribution systems, telecommunication cables, electrical and electronic applications

Cu-HCP

European standard number CW021A
Alloy number SM0013
Manufacturing location Pori, Finspång

Chemical properties

P 0.002-0.007 %

Physical Properties

Density
g/cm³ 8.9
lb/in³ 0.323
Electrical Conductivity****
(Nominal value in black) min 98.3
%IACS min 98.3
Thermal Conductivity
W/(m °K) min 386
Btu/ft h °F min 223
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.