# boway 18070

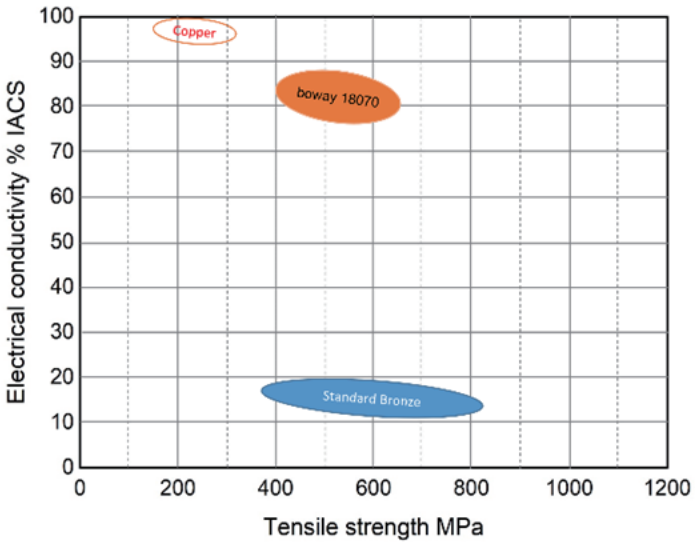
## Material Designation

| | |
|---|---|
| Boway designation | boway 18070 |
| UNS | C18070 |
| EN | CuCrSiTi |
| JIS | -- |
| GB(China) | TCr0.3-0.2-0.05 |

## Chemical Composition*

| | | |
|---|---|---|
| Cr | 0.3 | % |
| Si | 0.02 | % |
| Ti | 0.1 | % |
| Other | ≤0.2 | % |
| Cu | Rem. | |

* Nominal composition




## Application Target

| | |
|---|---|
| Signal Connector | Suitable |
| Power Connector | Suitable |
| Switch / Relay | Suitable |
| Semiconductor | Suitable |

Ideal for automotive connectors

## Characteristics

High electrical conductivity and thermal conductivity combined with medium strengh and good bending formability. Excellent stress relaxation and softening resistance.

## Fabrication Properties

| | |
|---|---|
| Cold forming | Very good |
| Machining | Not suitable |
| Electroplating | Good |
| Hot dip tinning | Good |
| Laser welding | Average |
| Resistance welding | Average |
| Soft soldering | Good |

## Physical Properties*

| | | |
|---|---|---|
| Density | 8.9 | g/cm³ |
| Electrical conductivity @ 20°C | 78 | % IACS |
| | 45 | MS/m |
| Thermal conductivity @20°C | 310 | W/(m•K) |
| Specific heat capacity | 0.385 | J/(g•K) |
| Modulus of elasticity | 138 | GPa |
| Poisson's ratio | 0.34 | |
| Coefficient of thermal expansion** | 18 | $10^{-6}$/ K |

* Typical values at room temperature for reference.
** average value between 20-300° C

Rev.2022,10

# boway 18070

## Mechanical Properties

| Temper | Tensile strength | | Yield strength | Hardness* | Elongation |
|---|---|---|---|---|---|
| | MPa | ksi | MPa | HV0.2 | A50 % |
| R400 | 400-480 | 58-69 | ≥300 | 120-150 | ≥8 |
| R460 | 460-560 | 67-81 | ≥400 | 140-170 | ≥9 |
| R530 | 530-610 | 77-88 | ≥460 | 150-190 | ≥8 |
| R550 | 550-630 | 80-91 | ≥520 | 150-190 | ≥7 |

*For reference only

## Bendability bending thickness: ≤0.5 mm bending width : 10 mm

| Temper | 90° R/T | |
|---|---|---|
| | Good Way | Bad Way |
| R400 | 0 | 0 |
| R460 | 0.5 | 0.5 |
| R530 | 1.0 | 1.0 |
| R550 | 1.0 | 1.5 |

90° bend test According to EN ISO 7438, 180° bend test acc. to ASTM B820, shown values might show orange- peel, however no crack.

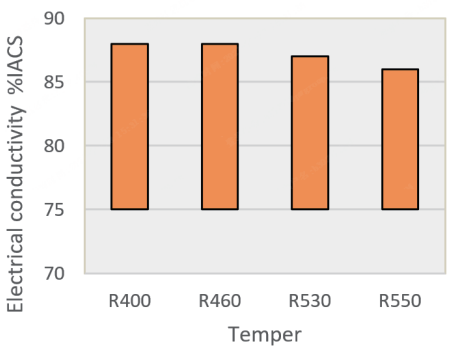
## Packaging

Standard coils with outside diameter up to 1300 mm,
Traverse-wound coils with drum weight up to 500 kg.
Multiple-coil up to 3 tons.

## Dimensions available

Strip thickness 0.08 - 3.0 mm, other gauges on request.
Strip width from 8.5 mm.
Electroplated and Hot-dip tinned strip available.

## Electrical Conductivity




## Fatigue Strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10.000.000 load cycles under symmetrical alternate load without breaking. It depends on the temper selected and can be estimated typically by 1/3 of tensile strength. For solid solution fine grain materials fatigue strength might increase up to 0,5 * of tensile strength.



Rev.2022,10