

## boway 27200

### Material Designation

|                   |             |
|-------------------|-------------|
| Boway Designation | boway 27200 |
| UNS               | C27200      |
| EN                | CuZn37      |
| JIS               | C2720       |
| GB(China)         | H63         |

### Chemical Composition\*

|    |      |   |
|----|------|---|
| Cu | 63   | % |
| Zn | Rem. |   |

\* Nominal composition

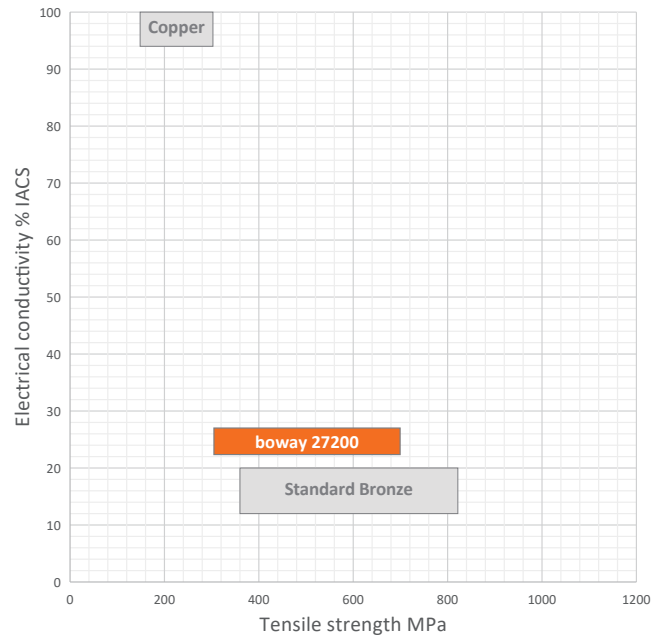
### Application Target

|                        |                 |
|------------------------|-----------------|
| Signal connector       | Suitable        |
| Power connector        | Suitable        |
| Miniaturized connector | Not recommended |
| Switch/Relay           | Suitable        |
| Semiconductor          | Not recommended |

Ideal for automotive, industrial connectors, decorative parts

### Fabrication Properties

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



### Characteristics

It has medium electrical conductivity and strength with excellent molding properties and lower material value. Alloys are suitable for connectors, electrical engineering parts, deep-drawn parts and metal products.

### Physical Properties\*

|                                    |       |                     |
|------------------------------------|-------|---------------------|
| Density                            | 8.44  | g/cm <sup>3</sup>   |
| Electrical conductivity@20°C       | 23    | % IACS              |
| Thermal conductivity@20°C          | 14    | MS/m                |
| Specific heat capacity             | 120   | W/(m·K)             |
| Modulus of elasticity              | 0.377 | J/(g·K)             |
| Poisson's ratio                    | 105   | GPa                 |
| Coefficient of thermal expansion** | 0.34  | 10 <sup>-6</sup> /K |

\* Typical values at room temperature for reference

\*\* Average value between 20–300°C

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## Mechanical Properties (Values Underlined Are For Reference Only)

| Temper     | Tensile strength |       | Yield strength | Elongation | Hardness       |
|------------|------------------|-------|----------------|------------|----------------|
|            | MPa              | ksi   | MPa            | A50 %      | HV0.2          |
| R300(O)    | 300–370          | 43–54 | ≤ 180          | ≥ 38       | <u>55–90</u>   |
| R350(1/4H) | 350–440          | 50–64 | ≥ 170          | ≥ 19       | <u>95–125</u>  |
| R410(1/2H) | 410–490          | 59–71 | ≥ 300          | ≥ 8        | <u>120–150</u> |
| R480(H)    | 480–560          | 69–81 | ≥ 430          | ≥ 3        | <u>150–180</u> |
| R550(EH)   | 550–640          | 79–93 | ≥ 500          | -          | <u>170–200</u> |
| R630(SH)   | ≥ 630            | ≥ 91  | -              | -          | <u>≥ 190</u>   |
| H01*       | 340–405          | 49–59 |                |            |                |
| H02*       | 385–455          | 56–66 |                |            |                |
| H03*       | 435–505          | 63–73 |                |            |                |
| H04*       | 485–550          | 70–80 |                |            |                |
| H06*       | 560–625          | 81–91 |                |            |                |

\*According to ASTM B36

## Bendability Bending thickness ≤ 0.5 mm; Bending width: 10 mm

| Temper | 90° R/T  |         | 180° R/T |         |
|--------|----------|---------|----------|---------|
|        | Good Way | Bad Way | Good Way | Bad Way |
| R300   | 0        | 0       | 0        | 0       |
| R350   | 0        | 0       | 0        | 0       |
| R410   | 0        | 0       | 0        | 0       |
| R480   | 0        | 0.5     | 0.5      | 1       |
| R550   | 0.5      | 1       | 1        | 2       |
| R630   | 1        | 2       | 2        | 4       |

90° bend test according to EN ISO7438, 180° bend test according to ASTM B820, shown values might show orange-peel, however no crack.

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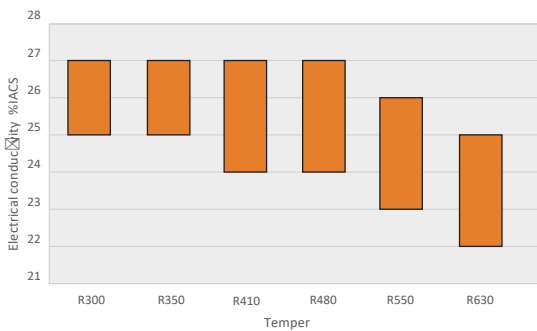
### Packaging

Standard coils with outside diameters up to 1300 mm.  
Traverse-wound coils with drum weights up to 500 kg.  
Multiple-coil up to 3 tons.

### Dimensions Available

Strip thickness 0.08–4.0 mm, other gauges on request.  
Strip width from 8.5 mm  
Electroplated 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.