C63000 Technical Datasheet

Bronze Alloy

Typical Applications
- Aerospace landing gear
- Gears
- Worm Wheels
- Marine fasteners
- Thrust washers
- Springs
- Wear plates
- Safety tools (non sparking)

Product Description
C63000 is the most commonly used grade of nickel aluminium bronze in America. It was designed as an equivalent to the European nickel aluminium bronzes and has been developed to become an aerospace material under the AMS4640 specification. It combines high strength with toughness and has an excellent resistance to wear, shock and abrasion. Another major benefit of this alloy is its ability to offer a high retention of its mechanical properties at elevated temperatures.

Key features
- Retention of properties at cryogenic temperatures
- Excellent wear & abrasion resistance
- Good strength & toughness
- High corrosion resistance
- Excellent resistance to shock
- Spark resistance

Availability
Round bar, hexagon.

Cut to size capability
There are thirty power saws within the Smiths group including a fully automated magazine feed CNC rod blanking line. We can economically cut from one off blanks to the largest production run for immediate or just in time deliveries.

Weldability
Good.

Corrosion Resistance
Excellent

Related material specifications
- AMS4640
- CW307G
- CA104

Machinability
Good / fair.

Chemical Composition (weight %)

<table>
<thead>
<tr>
<th></th>
<th>Cu</th>
<th>Al</th>
<th>Ni</th>
<th>Fe</th>
<th>Mn</th>
<th>Si</th>
<th>Sn</th>
<th>Zn</th>
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</thead>
<tbody>
<tr>
<td>min</td>
<td>Rem</td>
<td>9.00</td>
<td>4.00</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>max</td>
<td>Rem</td>
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<td>5.50</td>
<td>4.00</td>
<td>1.50</td>
<td>0.25</td>
<td>0.20</td>
<td>0.30</td>
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Mechanical Properties

<table>
<thead>
<tr>
<th>Diameter</th>
<th>UTS 0.2% Proof Strength</th>
<th>Elongation</th>
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</thead>
<tbody>
<tr>
<td>25mm</td>
<td>760 N/mm²</td>
<td>Up to 50.8mm</td>
</tr>
<tr>
<td></td>
<td>470 N/mm²</td>
<td>201-248 HB</td>
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<tr>
<td>25-50mm</td>
<td>760 N/mm²</td>
<td>50.8mm to 127mm</td>
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<tr>
<td></td>
<td>415 N/mm²</td>
<td>187-241 HB</td>
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<tr>
<td>50-80mm</td>
<td>725 N/mm²</td>
<td>10%</td>
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</table>

Hardness
201-248 HB

Technical Assistance
Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

www.smithmetal.com
sales@smithmetal.com

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