SigmaBronze 12
Technical Datasheet

Bronze Alloy

Typical Applications
- Pump & valve components
- Marine Ultrasonics
- Worms & Gears under high working loads
- Excavation & Cranes
- Bearings & bushes
- Hydraulics
- Linear bearings
- Flanges

Product Description
SigmaBronze 12 is a continuously cast copper based alloy containing 10.5 - 13% tin. This alloy combines high mechanical strength and hardness with good ductility, corrosion resistance and wear resistance. SigmaBronze 12 can be used as an alternative to PB1 or PB2 in many applications but has the advantage of a higher tin content that will give a degree of self-lubrication as well as being available in a range of metric sizes.

Key features
- High mechanical strength
- Excellent corrosion resistance in seawater
- High wear resistance
- Good resistance to impact loading
- High fatigue strength
- Increased tin content gives a degree of self-lubrication
- Good machinability

Availability
Bar, tube & flat bar

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.

Corrosion Resistance
High corrosion resistance in seawater and other chloride containing environments.

Machinability
Good machinability

Weldability
SigmaBronze 12 is weldable / brazable

Related material specifications
- BS1400 PB1
- BS1400 PB2

Chemical Composition (weight %)

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<tr>
<th></th>
<th>Cu</th>
<th>Al</th>
<th>Fe</th>
<th>Ni</th>
<th>Mn</th>
<th>P</th>
<th>Pb</th>
<th>Si</th>
<th>Sn</th>
<th>Zn</th>
<th>S</th>
<th>Sb</th>
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<tbody>
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<td>min</td>
<td>85.00</td>
<td>0.01</td>
<td>0.20</td>
<td>2.00</td>
<td>0.60</td>
<td>0.70</td>
<td>0.01</td>
<td>13.00</td>
<td>10.50</td>
<td>0.50</td>
<td>0.05</td>
<td>0.15</td>
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<tr>
<td>max</td>
<td>89.00</td>
<td>0.01</td>
<td>0.20</td>
<td>2.00</td>
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<td>0.70</td>
<td>0.01</td>
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<td>0.50</td>
<td>0.05</td>
<td>0.15</td>
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Mechanical Properties (actual properties according to specification chosen)

<table>
<thead>
<tr>
<th>Properties</th>
<th>Min. 90</th>
<th>Min. 300</th>
<th>Min. 150</th>
<th>Min. 6</th>
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<tr>
<td>Hardness Brinell</td>
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<tr>
<td>Tensile Strength (N/mm²)</td>
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<tr>
<td>Yield Point (N/mm²)</td>
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<td>Elongation at break (%)</td>
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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.

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