## Typical Applications

- Bushes & Bearings
- Worms & Gears under high working loads
- Pump & Valve components
- Flanges
- Hydraulics
- Marine Ultrasonics
- Excavation & Cranes
- Linear Bearings

## Product Description

PB1 is a continuously cast copper based alloy containing 10-12% tin. This alloy combines high mechanical strength with good ductility, corrosion resistance and wear resistance. It also offers a good resistance to shock loading but is out performed in this area by the wrought grades. PB1 can be soldered and brazed and is traditionally used in heavy load applications run at high speeds.

## Weldability

PB1 is weldable / brazable.

## Key features

- High wear resistance
- Good resistance to impact loading
- High fatigue strength
- Excellent corrosion resistance in seawater
- High mechanical strength
- Good resistance to brine

## Availability

Round bar, hollow bar, flat bar, plate.

## 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.

## Related material specifications

- SigmaBronze12
- BS1400 PB2
- CC481K

## Machinability

Good / fair.

## Chemical Composition (weight %)

<table>
<thead>
<tr>
<th></th>
<th>Cu</th>
<th>Sn</th>
<th>Zn</th>
<th>Ni</th>
<th>Pb</th>
<th>P</th>
<th>Al</th>
<th>Fe</th>
</tr>
</thead>
<tbody>
<tr>
<td>min</td>
<td>Rem</td>
<td>10.00</td>
<td>Rem</td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>max</td>
<td>Rem</td>
<td>12.00</td>
<td>0.05</td>
<td>0.10</td>
<td>0.25</td>
<td>1.20</td>
<td>0.005</td>
<td>0.10</td>
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</tbody>
</table>

## Mechanical Properties

<table>
<thead>
<tr>
<th>Casting</th>
<th>0.2% Proof Stress (MPa)</th>
<th>Tensile Strength (MPa)</th>
<th>Elongation (min)</th>
<th>Hardness (HB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>170 min</td>
<td>360 min</td>
<td>6 min</td>
<td>100 min</td>
</tr>
<tr>
<td>Centrifugal</td>
<td>170 min</td>
<td>330 min</td>
<td>4 min</td>
<td>95 min</td>
</tr>
</tbody>
</table>

## 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