Material data sheet

Material designation SCHMELZMETALL: HOVADUR® B 30
Material designation, EN standard: CuAl11Fe6Ni6
Material No., EN standard: CW308G
Material No., former DIN standard: 2.0978
Material No., UNS system (ASTM): not standardized

Information about standards
EN: EN12163 (Round bars), EN12167 (Flat bars), EN12420 (Forged products)
DIN (former): DIN17665/DIN17672/DIN17678
ASTM: not standardized

Description of material
HOVADUR® B 30 is a multiphase copper aluminium alloy with addition of nickel and iron (aluminium bronze). The alloy combines very high tensile strength, even at higher temperature, with very high wear resistance as well as good resistance to corrosion, wear and cavitation resistance. HOVADUR® B 30 is resistant against sea water and has a very good oxidation behaviour (no scale).

Due to the melting and casting procedure employed by SCHMELZMETALL, HOVADUR® B 30 shows remarkably less tool wear in case of machining compared to other aluminium bronzes.

Material properties

Chemical composition in % of weight (guaranteed ranges)

<table>
<thead>
<tr>
<th>Al</th>
<th>Fe</th>
<th>Ni</th>
<th>Mn</th>
<th>others total</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.5–12.5</td>
<td>5.0–7.0</td>
<td>5.0–7.0</td>
<td>max. 1.5</td>
<td>0.5</td>
<td>Remainder</td>
</tr>
</tbody>
</table>

Agreed properties at 20 °C

Hardness Brinell HB: 220–260 *)
Electrical conductivity: MS/m about 4.5 (standard value)

*) In case of different opinions, hardness is calculated as the average of 3 randomly located measurements.

Associated properties at 20 °C

Tensile strength 1) N/mm² (MPa) min. 740
0.2% yield strength 1) N/mm² (MPa) min. 420
Elongation (AS) 1) % min. 5

1) Strength values will only be proved if ordered by the customer.

Material information (typical values = nominal values)

Elastic modulus: N/mm² (MPa) 115,000
Softening temperature: °C 600
Specific weight: g/cm³ 7.4
Thermal conductivity: W/mK 56 (Average 20 °C–300 °C)
Thermal expansion coefficient: x 10⁻⁶/K 16 (Average 20 °C–300 °C)
Melting interval: °C 1070–1085
Material data sheet

HOVADUR® B 30

Processing instructions

Hot forming
HOVADUR® B 30 is very suitable for hot forming at temperatures of about 900 °C to 700 °C. According to the degree and the kind of forming, heating to 800 °C up to 850 °C is sufficient. After forming, cooling of the material is recommended at inactive air.

Cold forming
HOVADUR® B 30 is not suited for cold forming.

Heat treatment
After hot formings, a homogenizing and tension reducing annealing at a temperature between 600 °C and 650 °C during 2 to 5 hours is recommended.

Machining
In normal condition, HOVADUR® B 30 can be machined with standard hard metal tools. Material has a tenacious character.
HOVADUR® B 30 is suited for eroding. No special measures are necessary for grinding and polishing. Surface may be coated according to all usual procedures.

Joining
HOVADUR® B 30 is well suited for soldering, but concerning hard soldering, a (small) loss in hardness is to be expected.
A very slowly melting silver brazing should be used.
HOVADUR® B 30 is very well suited for joining by welding. Build-up welding is suitable, too.
Attention must be paid to sufficient extraction and filtering of welding fume.

Application examples

Due to its specific, very interesting combination of properties, the alloy HOVADUR® B 30 is excellent for many applications. Typical examples are utmost strained bearings, guide bushes, valves and valve faces, sliding elements and wearing plates.
Due to its combination of good resistance to corrosion, good strength, even at higher temperatures, and non-sparking property, it is excellent for many applications in plant construction, such as chemical industry, oil/gas industry as well as for offshore and marine uses.

Approvals
Our alloy HOVADUR® B 30 is tested and certified as being safe concerning contact with food.

Details of the properties or application of materials are for descriptive purposes only. Confirmation of suitability with regard to specific properties or application require written agreement.