Wirobond® 280

Non-precious premium metal-ceramic alloy
– nickel-free and beryllium-free –

- Wirobond® 280 sets a new standard in non-precious metal-ceramic alloys, as its Vickers hardness of 280 HV10 makes it exceptionally easy to work out.
- Extremely corrosion resistant due to optimal interaction of the essential elements chrome and molybdenum
- Excellent melting and casting properties
- No slow cooling required*, even with longspan restorations
- Reliable metal-ceramic bonding
- High strength with all spans, ensuring a wider range of applications
- Reliable fabrication based on the proven BEGO system
- Biocompatibility tested and certified by an independent institute

* Exception: Creation (Willi Geller), Reflex® (Fa. Wieland Dental + Technik GmbH & Co. KG)
**Ideal processing properties – Wirobond® 280 – The name says it all**

- The special composition produces a practical, low Vickers hardness of 280 (HV10) for this type of material and ensures excellent machinability, making it very easy for dental technicians to process and work out Wirobond® 280 frameworks.
- It has excellent melting properties, the casting point is easily detectable and it flows virtually without residue from the crucible, which extends the service life of the crucible and reduces operating costs.
- Wirobond® 280 can usually be cooled normally after firing, even with long-span restorations, due to its optimized coefficient of thermal expansion.
- The bond strength has been tested with a large number of commercially available ceramics.

**Wirobond® 280 under the close scrutiny**

- The high corrosion resistance of Wirobond® 280 is attained by the interaction of chrome, tungsten and the essential element molybdenum.
- The alloy forms a dense, adhesive passive film, which ensures its biocompatibility. (The certificate can be requested from BEGO or downloaded at www.bego.com in the services section.)

**Wirobond® 280 – first choice for dental technicians, dentists and patients**

- Wirobond® 280 is a reliable and costeffective option that allows patients to obtain a high-quality dental restoration.
- The patient can choose between different types of care: regardless of whether a standard fixed restoration, combination work or implant-supported restoration
- Wirobond® 280 is the alloy of choice for patients as, due to its minimal thermal conductivity (sensitivity to heat/cold), it provides for a high degree of oral comfort.

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**Shear bond strength test according to ISO 9693 (Schwickerath test)**

![Shear bond strength test graph](image)

The veneering materials are products of the manufacturers 1DeguDent, 2VITA, 3Shofu, 4Ivoclar, 5Willi Geller, 6Noritake, 7Heraeus Kulzer. Powder opaque was used if not otherwise stated.

**Wirobond® 280**

<table>
<thead>
<tr>
<th>Alloy characteristics</th>
<th>standard values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alloy type (ISO 22674)</td>
<td>5</td>
</tr>
<tr>
<td>Density [g/cm³]</td>
<td>8,5</td>
</tr>
<tr>
<td>Coefficient of thermal [10⁻⁶ K⁻¹]</td>
<td>(25–500 °C) 14,0, (20–600 °C) 14,2</td>
</tr>
<tr>
<td>Preheating temperature [°C]</td>
<td>900–1000</td>
</tr>
<tr>
<td>Casting temperature [°C]</td>
<td>ca. 1500</td>
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<tr>
<td>Melting interval [°C]</td>
<td>1360–1400</td>
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<tr>
<td>Modulus of elasticity [GPa]</td>
<td>ca. 220</td>
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<tr>
<td>Elongation limit (R₂₅) [MPa]</td>
<td>540</td>
</tr>
<tr>
<td>Tensile strength (R₅₅) [MPa]</td>
<td>680</td>
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<tr>
<td>Ductile yield (A₅) [%]</td>
<td>14</td>
</tr>
<tr>
<td>Vickers hardness (HV10) after firing</td>
<td>280</td>
</tr>
</tbody>
</table>

**Composition in % by weight**

- Co 60,2 · Cr 25 · W 6,2 · Mo 4,8 · Ga 2,9 · Si, Mn < 1

**Availability**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Content</th>
<th>REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wirobond® 280</td>
<td>1 Pack</td>
<td>1000 g</td>
</tr>
<tr>
<td>Wirobond® 280</td>
<td>1 Pack</td>
<td>250 g</td>
</tr>
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</table>

**Zubehör**

- Wiroweld CrCo laser wire, containing no carbon
  - Ø 0,5 mm 1 Pack 1,5 m 50005
  - Ø 0,5 mm 1 Pack 2 m 50009
  - Ø 0,35 mm 1 Pack 2 m 50003
- Wirobond® soldering rods before firing 1 Pack 4 g 52622
- WGL solder after firing 1 Pack 5 g 61079
- Biocertificate 82738

**Ion release from Wirobond® 280 in 7 days**

![Ion release graph](image)

We reserve the right to modify the design, pack contents and composition. Technical information and recommendations are based on our experience and tests and should be regarded as guidelines. As at: 15.12.2010.