

## Instructions for use

Dental Co-based metal-ceramic alloy, Type 5

Wirobond® 280 is available as cylinders.

Wirobond® 280 complies with ISO 22674 and ISO 9693-1.

REF 50134 – 1000 g; REF 50135 – 250 g; REF 50136 – sample

### Alloy characteristics

According to ISO 22674 free of nickel, cadmium, beryllium and lead

Type (accord. to ISO 22674)	5
Density	g/cm <sup>3</sup> 8.6
Preheating temperature	°C 900–1000
Solidus, liquidus temperature	°C 1355, 1430
Casting temperature	°C 1500
Young's modulus	GPa 215/235*
Proof strength (R <sub>p0.2</sub> )	MPa 515/520*
Ultimate strength (R <sub>m</sub> )	MPa 680/675*
Elongation after fracture	% 14/9*
Vickers hardness (HV10)	280/315*
BEGO color code	8
Coefficient of thermal expansion (CTE)	
25 – 500 °C, 10 <sup>-6</sup> K <sup>-1</sup>	14.3
20 – 600 °C, 10 <sup>-6</sup> K <sup>-1</sup>	14.5

(cast/\* after ceramic firings)

Investment material:	phosphate bonded, e. g.: Bellavest SH (REF 54252)
Crucible material	ceramic
Melting powder	Wiro melt (REF 52526)
Veneering ceramic	Ceramic with suitable CTE, e. g.: VMK Master/VITA
Oxidation firing	not recommended but if control firing is wished: 900 °C/5 min/vac
Heating rate	recommended max. 55 °C/min
Flux	e. g. Minoxid (REF 52530)
Brazing material before firing:	Wirobond®-Lot (REF 52622)
Brazing material after firing:	–
Laser wire:	Wiro weld (REF 50003; 50005)

**Intended Use:** Wirobond® 280 is indicated for casting of dental restorations.

**Indication:** Wirobond® 280 is a cobalt-based dental casting alloy. It is suitable for the fabrication of crowns, bridges as well as metal-ceramic restorations.

**Contraindications:** No contraindications are known. However, unwanted biological reactions such as allergies to contents of the alloy or electrochemically based reactions may very rarely occur. In case of known incompatibilities and allergies to contents of the metallic material it should not be used.

**Warnings:** Metal dust is harmful to your health. When grinding and blasting use suitable air extraction system / ventilation at the workplace and breathing mask type FFP3-EN149!

**Precautions:** In case of occlusal or approximal contact with a different alloy electrochemically based reactions may very rarely occur. Safety and effectiveness in treatment of children or treatment of pregnant or nursing woman have not been established. Wirobond® 280 may influence negatively the interpretation of MRI investigations.

**Adverse reactions:** No adverse reactions are known. Nevertheless, the rare case of occurrence of individual reactions against single components of Wirobond® 280 can never be excluded com-

pletely. In this case, the application of Wirobond® 280 should not be continued.

**Prescription device:** Caution: US Federal law restricts this device to sale by or on the order of a licensed dentist.

**Wax up:** Minimum metal thickness (after grinding) 0.3 mm. Avoid sharp edges and corners. Framework should be anatomic reduced. Connectors should be modeled as strong and high as possible (height: min. 3.5 mm, width: min. 2.5 mm). In case of bruxism stronger modulation is required. Use wax or plastic hollow sticks. Do not taper the spruing.

**Investing:** Use only phosphate bonded investment material.

**Melting/casting:** Do not overheat alloy. Use only clean ceramic crucibles, one crucible per alloy. To enable an exact identification of each case cast new metal only. If applicable use melting powder. Follow the instructions of the manufacturers of the casting devices for parameters and casting procedures.

After casting, the mould should cool down slowly.

**Grinding:** use tungsten carbide burs

**Polishing:** To ease polishing blasting with Perlablast® micro (REF 46092, lead free soda glass) may be suitable. Afterwards polish with rubber polisher and brushes with suitable polishing paste.

**Ceramic veneering:** Use veneering ceramics with suitable CTE (ISO 9693-1). Follow instructions of use of ceramic manufacturers. The oxides must be blasted (250 µm / 3-4 bar; e. g. with Korox 250, REF 46014). Clean surface thoroughly by steam cleaning or boiling in aqua dest. Do not touch surfaces afterwards with hands. Use artery clamps or similar devices.

Support the frameworks adequately during firing cycles.

**Acrylic veneering:** For veneering with acrylic material follow the recommendations of the manufacturers

**Soldering / brazing:** Fixate the parts with soldering investment material (e. g. Bellatherm® REF 51105). The prepared gab shall not exceed 0.2 mm with parallel walls. Use a suitable BEGO flux. The flux residues and oxides must be etched off. Clean surface thoroughly by steam cleaning or boiling in aqua dest.

**Laser welding:** If applicable use V-seam and filler material. Follow manufacturer's instructions for use and hazard notes of the laser welding devices.

**Limit of Liability:** Except where prohibited by law, BEGO Bremer Goldschlägerei Wilh. Herbst GmbH & Co. KG will not be liable for any loss or damage arising from this product, whether direct, indirect, special, incidental or consequential, regardless of the theory asserted, including warranty, contract, negligence or strict liability.

**Storage conditions:** none

**Warranty:** Whether given verbally, in writing or by practical instructions, our recommendations for use are based upon our own experience and trials and can be considered as standard values. Our products are subject to a constant further development. Therefore alterations in construction and composition are reserved.

**US Labeling requirements:** The device labeling meets the recommendations of FDA applicable guidance documents.

Any serious incident that has occurred in relation to Wirobond® 280 should be reported to BEGO Bremer Goldschlägerei Wilh. Herbst GmbH & Co. KG and the competent authority.



Consult instructions for use



Caution



Use-by-date



Batch code



Non-sterile

**Rx only**  
For professional use only



Catalogue number



Manufacturer

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