

INTRODUCTION FOR USE / Cr-Co Metal Works



Oxide Firing

Fire for 5 min. under vacuum at 950-980°C (10°C more than back-ground material firing temperature).

After firing, the oxide layer has to be carefully sandblasted using disposable oxide-aluminium equipment 110 to 150µm at a pressure of 2.5-3 bar., then steam.

If the framework has a homogeneous grey surface, then you can apply and fire ceramic, following its manufacturer's instructions.

Co	60	Melting point	1436 °C
Cr	28	Vickers hardness	273 HV10
W	9	Percentage elongation at fracture	16 %
Si	1.5	Yield load strength (Rp 0.2)	361 MPa
Others	Mn; Fe	Modulus of elasticity	183 GPa
Solidus-liquidus temperature	1308 - 1386 °C	Colour	White
Thermal expansion coefficient	(25 - 500 °C) 14.2 x 10 ⁻⁶ K ⁻¹ (25 - 600 °C) 14.4 x 10 ⁻⁶ K ⁻¹	Highest firing temperature	980 °C
Density	8.5 g/cm ³	Recommended ceramics	Interaction Antagon by Elephant Dental BV; VITA VMK Master by Vita Zahnfabrik
		Percentage of ions release after 7 days	1.75 µg/cm

GC Initial INmetalbond

Buffer between GC Initial metal ceramics and dental alloys.

GC Initial INmetalbond

INmetalbond is used as a thin layer between the alloy and the first Opaque layer.

The INmetalbond blocs the escaping metal oxides and neutralizes differences in the expansion coefficient.

The bonder does not increase the bonding strength as such but allows a wider span of CTE compatibility.

Recommended indications

Can be used on all PFM alloys, precious as well as non-precious.

Instruction For Use

- Metal framework needs to be prepared according manufacturer's instructions.
- Oxidation firing again according manufacturer's instructions.
- Stir paste before using.
- Apply the Bonder in a thin layer but mask the metal completely.

IMPORTANT:

- To change the consistency of the INmetalbond paste, use the "GC Initial Paste Opaque Thinner".
- Only use it in very small quantities.
- To avoid drying out, close the cap after using.
- The fired Bonder should have a yellowish, slightly shiny surface.

NOTE:

- The colour of the fired bonder can vary depending on the composition of the alloys.
- When using NPA (non-precious alloys) with the INmetalbond, the final temperature of the Opaque Washbake does not need to be increased by 20°C anymore.

e.g.: 1st Opaque Firing on NPA:

GC Initial MC = 940°C

GC Initial LF = 830°C

Firing instructions

Preheating Temp.	Drying Time	T° increase	Vacuum	Final Temp.	Holding Time
550°C	6min	80°C/min	Yes	980°C	1min no vacuum

Storage

Store in a cool, dry place.

Shelf life

GC Initial INmetalbond: 5 years

Packages

GC Initial INmetalbond, 2x4gr.

Last revised: 10/2014



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Prior to use, carefully read
the instructions

EN

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Bredent Ceram Bond

Before using the product, please read instructions for use carefully.

1. Indication range

Ceram Bond is a ceramic material which is used as a layer between all metals and ceramic. It compensates differences in the expansion coefficients between metal and ceramic and blocks escaping metal oxides.

2. Processing

2.1. Preparation of the object:

After finishing, sandblast the framework with aluminium oxide. Then clean thoroughly with distilled water in the ultrasonic unit for ten minutes or using the steam cleaner. Afterwards the metal surface must not be touched any more.

2.2. Applying Ceram Bond:

Use a brush for stains to apply one covering coat with a uniform layer thickness onto the metal surface.

2.3. Predrying Ceram Bond in the ceramic furnace:

Open the ceramic furnace which has been preheated to 650° C and dry the framework onto which Ceram Bond has been applied for one minute in the open furnace.

2.4. Firing Ceram Bond in the ceramic furnace:

Firing of Ceram Bond is started at 650° C and continued up to 980° C. The temperature increase rate is 55° C/minute. Firing is performed under vacuum. After completion of the firing process, the framework is immediately removed from the furnace. After firing, the framework should exhibit a beige to golden yellow color.

2.5. Opaque firing and further processing:

Apply the opaque material – according to the tooth shade – onto the fired Ceram Bond. A wash bake is not required. Then further processing is carried out according to the instructions of the manufacturer of the ceramic material.

3. Error sources and their elimination:

To ensure successful use, we recommend to test the desired alloy with Ceram Bond.

3.1. Cracks in Ceram Bond: Ceram Bond was applied too thickly (very fine cracks are acceptable/normal)! Sandblast the material and reapply as described above.

3.2. Bubbles in Ceram Bond: The metal must be degased. Sandblast Ceram Bond and degas the framework at 980° C under vacuum for ten minutes before Ceram Bond is applied again.

3.3. Green and/or blacks spots in Ceram Bond: Ceram Bond was applied too thinly or the framework was wet or greasy.

3.4 Cracks in the ceramic: If Ceram Bond reveals a rusty brown color after firing, the alloy is not suitable. Please use a different alloy.

The following alloys have proved to be unsuitable: Crutanium by Krupp Austenal, Crysatalloy by Shofu and Ticonium.

4. Safety recommendations and hazard warnings

4.1. Personal protective equipment:

When processing Ceram Bond, protective gloves, safety goggles and protective working clothes must be worn.

4.2. Skin contact: Wash off immediately using water and soap and rinse carefully.

4.3. Eye contact: Rinse eyes for several minutes under running water with eyelid being opened.

4.4. After swallowing: If complaints persist, seek medical attention.

5. Storage and durability:

5.1. The product must be stored in the sealed container under dry conditions. If proper storage is ensured, the product features unlimited durability.

5.2. Proper disposal: Ceram Bond can be disposed of together with the regular household garbage.

6. Additional information

The information contained in these instructions for use is always updated according to the latest knowledge and experience. Therefore we recommend to read the instructions for use again before using a new package.



Instructions for use & technical data

Arum CoCr Disc

PRODUCT : MOGUCERA C

Cobalt-Chromium bonding alloy for the manufacturing of removable and fixed restorations by CAM Milling. The alloy is a type 4 alloy according to ISO22647. Free of beryllium and nickel. This alloy is to be used by qualified and trained staff for the designated applications.

INDICATIONS :

Individual crowns as well as multi-unit front-teeth and posterior bridges, crown and bridge frames for metal ceramics, telescopic and conical crowns, supraconstructions on implants, abutments.

NOMINAL ANALYSIS IN MASS PERCENT:

Nominal values of the alloy composition			
Co	Cr	Mo	Other constituents: C, Si, Nb, Mn, Fe
65.0%	29.0%	5.0%	< 1.0%

PROPERTIES (TARGET VALUES):

Nominal values of the alloy properties			
Technical properties		Other properties	
Properties	Standard values	Properties	Standard values
Proof stress (Rp0.2)	413 MPa	Density	8.3 g/cm ³
Ultimate tensile strength	597 MPa	Thermal expansion coefficient	
Tensile elongation	12%	25 - 500°C	14.5 x 10 ⁻⁶ K ⁻¹
Elastic modulus	206 GPa	25 - 600°C	14.8 x 10 ⁻⁶ K ⁻¹
Vickers hardness	288 HV 10	Biocertificate	Yes
		Laser weldable	Yes

MODEL:

The crown walls of the virtual model shall be at least 0.4 mm so that the final wall thickness after finishing or before ceramic and acrylic veneering will be at least 0.3mm. Avoid sharp edges and undercut areas. Pontics are to be designed as thick and high as possible.

GENERAL INFORMATION:

The processing tools required are clean carbide burs according to the specifications of the manufacturer of the CAM-unit.

FRAMEWORK SEPARATION:

Separate machined frameworks from blanks with suitable cutting discs or crosscut carbide burs.

FINISHING AND CLEANING:

Sandblast frameworks after separation using aluminium oxide (approx. 110 - 25 µm). Trim frameworks with clean carbide burs suitable for CoCr alloys or with diamond burs. Only trim in one direction in order to avoid overlapping that might result in bubbles during the subsequent ceramic build-up. Also obey to the maximum r.p.m. (revolutions per minute) recommended. Clean the surfaces to be veneered afterwards with fresh aluminium oxide (approx. 110 - 250 µm) at a pressure of 2-4 bar. Thoroughly steam clean framework or clean under running tap water. Degrease with ethl alcohol.

OXIDE-FIRING:

No oxide-firing necessary. If oxide-firing is optionally performed in order to visually check the metal surface. Sandblast again with fresh aluminium oxide (approx. 110-250 µm). Clean framework again.

VENEERING:

It is recommended to fire the opaque in two stages. The ceramic build-up should be performed according to the ceramic manufacturer's instructions, especially what the cooling-time after firing is concerned.

SOLDERING (IF NECESSARY):

The soldering model should be kept as small as possible; preheat model in furnace for 10min at 600°C. Already before heating, the surfaces to be soldered should be covered with flux. The gap should not be larger than 0.2mm. Let soldered objects cool down slowly. After opaque firing no soldering should be performed anymore.

LASER WELDING:

As filler wire commonly available laser welding wires suitable for the alloy are to be used (e.g. S&S Scheffter StarWire). Obey to the welding parameters recommended by the manufacturer of the welding laser.

POLISHING:

Smooth out the visible metal surfaces by grinding with ceramic bonded stones. Finish with rubber polishers, pre-polish with S&S Schefner Black Diamond pre-polishing paste and polish with suitable polishing paste until high-polish effect is reached.

Finally carefully steamclean or clean with ultrasonic cleaner.

PACKAGING:

with deging			without edging		
REF	thickness/diameter	content	REF	thickness/diameter	content
138108	8 mm ø 98.3 mm	1pc.	138008	8 mm ø 99.5 mm	1pc.
138110	10 mm ø 98.3 mm	1pc.	138010	10mm ø 99.5 mm	1pc.
138112	12 mm ø 98.3 mm	1pc.	138012	12mm ø 99.5 mm	1pc.
138113	13.5 mm ø 98.3 mm	1pc.	138013	13mm ø 99.5 mm	1pc.
138115	15 mm ø 98.3 mm	1pc.	138015	15mm ø 99.5 mm	1pc.
138116	16 mm ø 98.3 mm	1pc.	138016	16mm ø 99.5 mm	1pc.
138118	18 mm ø 98.3 mm	1pc.	138018	18mm ø 99.5 mm	1pc.
138125	25 mm ø 98.3 mm	1pc.	138025	25mm ø 99.5 mm	1pc.
138130	30 mm ø 98.3 mm	1pc.	138030	30mm ø 99.5 mm	1pc.

APPLIED STANDARDS:

DIN EN ISO 14971, DIN EN ISO 22674, DIN EN ISO 15223, DINEN ISO 1041, DIN EN ISO1641