BEGO

Partners in Progress

Wirovest®

Special investment material for partial dentures

Working instructions

Safety instructions

1. Investment materials contains quartz. **Do not inhale dust!** Danger of lung harms (silicosis, lung cancer).

- Cut open bags with scissors and avoid generation of dust when weighing and filling the material into the mixing bowl. Wash out empty bags with water before crumpling them up.
- Always remove dust at place of work with a **moist** cloth.
- To avoid dust when deflasking, place the completely cooled-off mould in water briefly after casting.
- When blasting, use extraction system with fine dust filter.

2. Always use a **moist** cloth to remove dried mixing liquid (fine dust). Seal bottle securely after use.

3. Suck off furnace gases escaping during pre-heating and discharge them outdoors!

Important instructions:

- Observe shelf life date for investment material and mixing liquid! Do not use after this date without inspection.
- Do not place Wirovest® in contact with plaster or plaster-bonded investment materials.
- Only use BegoSol® and distilled water as mixing liquid. Do not use crystallised mixing liquid any longer!
- The higher the concentration of BegoSol®, the greater the expansion!
- In the case of duplicate models, the base must be at least 1 cm thick.

Every dental technician knows it:

The storage and processing temperatures for investment material and mixing liquid play a significant role for setting expansion and thus for the fitting accuracy and surface finish of the casting. The ideal processing temperature for BEGO investment materials is 2**0 °C (70 °F).** To keep it constant at a changing ambient temperature, use a temperature control cabinet if necessary.

At high ambient temperatures also place the mixing bowl, the stirrer and, of course, BegoSol® in the temperature control cabinet.

Table 1: Mixing ratios

	Wirovest®	BegoSol®	Distilled water	Total mixing liquid	Concentration BegoSol®
Duplication (2 duplicate models)					
• in gel mould	1 × 400 g	0 ml	52 ml	52 ml	0 %
(without pressure)		21 ml	31 ml		40 %*
• in silicone or polyether mould		0 ml	60 ml	60 ml	0 %
(without pressure)	1 x 400 g	24 ml	36 ml		40 %*
• in silicone or polyether mould					
(with pressure 4 bar)	1 x 400 g	27 ml	33 ml	60 ml	45 %
Investment (1 mould)					
	1 × 400 g	0 ml	60 ml	60 ml	0 %
		18 ml	42 ml		30 %**

* 0 % – 40 % BegoSol® for duplication without pressure.

** 30 % BegoSol® prevents cracks in the mould, which may occur due to rapid heating. As a rule, distilled water is used for mixing.

A practical tip for mixing: keep reserve bottles available!

Fill BegoSol® bottle (1000 ml) with BegoSol® up to desired % mark (see Table 1) and top up to 100 % with distilled water. Mark this reserve bottle with % data. Advantage: the mixing liquid is available with the desired concentration and can be measured in one work step.

Table 2:

Mixing liquid per 100 g of Wirovest®

For duplicate models:	Mixing liquid
• in gel mould	13 ml
• in silicone or polyether mould	15 ml
For moulds:	15 ml

Table 3:

Processing time

17 °C (62 °F)	approx. 3 min 15 s
20 °C (68 °F)	approx. 2 min 45 s
23 °C (73 °F)	approx. 2 min 15 s
27 °C (80 °F)	approx. 1 min 15 s

The concentration of BegoSol® only has a slight effect on this time.

1. General processing

- For quantities and processing time see **Tables 1 and 3.**

  When there is little need of investment material, the required quantity should be weighed: see **Table 2.**

- Rinse and wipe the clean mixing bowl prior to mixing. Dirty or dry mixing bowls draw moisture out of the investment material!

- Mix Wirovest® together with mixing liquid using a spatula for approx. 10–20 seconds. Then mix in a vacuum mixing unit, such as EasyMix, for 60 seconds. Mix Wirovest® under vacuum conditions as far as possible.

Mixing without mixing-unit:

Mix material for about 2 minutes on the vibrator.

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2. Duplication

- Duplication can be carried out in silicone, polyether or gel moulds.
- If a pressure compaction unit is used, ensure that silicone or polyether moulds and duplicate models are made under the same pressure conditions (4 bar). Duplication in gel moulds should always be carried out without pressure!

1. Fill duplicating mould on the vibrator, then remove from vibrator – do not vibrate any more.

2. Remove model from the duplicating mould after a setting time of **40 minutes.**

3. Duplicating models made in **gel moulds** (Castogel®, Wirodouble®) harden with Durol dipping hardener (Order No. 52111):

- dry 30–60 minutes at 250 °C (500 °F),
- shortly dip 3 times (approx. 2 sec.),
- dry 5–10 minutes at 250 °C (500 °F)

or

harden with Dipfix dipping hardener (free of solvent, Order No. 52135):

- dry 45 minutes at 150 °C (300 °F),
- shortly dip 3 times (approx. 2 sec.),
- dry 10 minutes at 150 °C (300 °F).

4. Duplicate models made in **silicone** (Wirosil®) or **polyether duplicating material** harden with Durofluid model spray (Order No. 52008):

- dry 30–60 minutes at 250 °C (500 °F),
- spray weakly,
- dry approx. 5 minutes at 250 °C (500 °F).

3. Investment

Apply Wiropaint plus fine investment material (Order No. 51100) **rapidly and in a uniform layer** to the model itself and slightly beyond it with a moist brush. Then mix and invest investment material immediately. Wiropaint plus must not be allowed to dry. Do not use any wetting agents.

If Wiropaint plus is **not** used, apply a thin film of Aurofilm wetting agent (Order No. 52019), then blow-dry.

4. Preheating

- Depending on the size and number of moulds, select holding times from 30–60 minutes.
- A second holding stage at 570 °C (1,060 °F) for 30–60 minutes provides even greater assurance of uniform results.

1. Furnaces with conventional furnace control:

After a setting time of 30 minutes place moulds in cold furnace. Heat up to 250 °C (500 °F) and maintain there for 30–60 minutes. Then heat up to final temperature and maintain at this temperature for 30–60 minutes.

2. Furnaces with computer control:

After a setting time of 30 minutes place moulds in cold furnace. Heat up to 250 °C (500 °F) at a rate of 5 °C/min or 9 °F/min and maintain there for 30–60 minutes. Then heat up to final temperature at a rate of 7 °C/min or 12 °F/min and maintain at this temperature for 30–60 minutes.

3. Recommended final temperature: 950–1050 °C (1,740–1,920 °F).

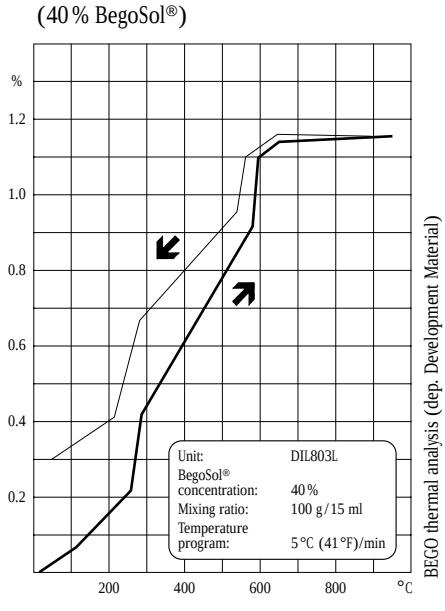
During casting with the high-frequency vacuum pressure casting machine Nautilus® the final temperature can be reduced until 850 °C (1,560 °F) under optimum conditions.

5. After casting

After casting, allow moulds to cool down in contact with the air until warm to the touch, but **do not place in water!**

To avoid dust when deflasking, place the completely cooled-off mould in water briefly after casting.

Thermal expansion curve
(40 % BegoSol®)



Physical data

Processing time at 20 °C (70 °F)	approx. 2 min 45 s
Total expansion in the mould	approx. 2.3 %

Characteristic material values in accordance with DIN EN ISO 9694

(40 % BegoSol®)

Setting time (Vicat time)	approx. 5 min
Compressive strength	approx. 15 MPa
Linear thermal expansion	approx. 1.15 %

Availability

Wirovest® investment material:

1 dispenser box: 6 kg = 15 x 400 g bags **– Order No. 51057**

1 carton: 18 kg = 45 x 400 g bags **– Order No. 51046**

1 carton: 18 kg = 4 x 4.5 kg bags **– Order No. 51048**

BegoSol® mixing liquid:

1 bottle = 1000 ml **– Order No. 51090**
1 canister = 5000 ml **– Order No. 51091**

Recommendation

For especially good results we recommend the following alloys:

BEGO GOLD

since 1890

PlatinLloyd® 100

WIRONIUM® plus
Wironit® extrahart

Info: Tel. +49 421 2028-282
www.bego.com

DIN ISO

This product was manufactured according to DIN EN ISO 9694 and fulfills all its requirements.

TÜV CERT DIN EN ISO 9001 DIN EN 46001

BEGO maintains a quality control system which is certified under DIN EN ISO 9001 and DIN EN 46001.

Warranty

Whether given verbally, in writing or through practical instructions, our process related data and recommendations are based upon our own experience and trials and can only be considered as standard values.

Our products undergo continuous further development and are therefore subject to modifications in design and composition.