

GC MultiPressVest®

PHOSPHATE BONDED INVESTMENT FOR PRESSABLE CERAMIC TECHNIQUES (TYPE I)

PHOSPHATGEBUNDENE EINBETTMASSE FÜR PRESSKERAMIKTECHNIKEN (TYPE I)

REVETEMENT A LIANT PHOSPHATE POUR TECHNIQUES DE CERAMIQUE PRESSEE (TYPE I)

RIVESTIMENTO A LEGANTE FOSFATICO PER TECNICHE DI PRESSO-CERAMICA (TIPO 1)

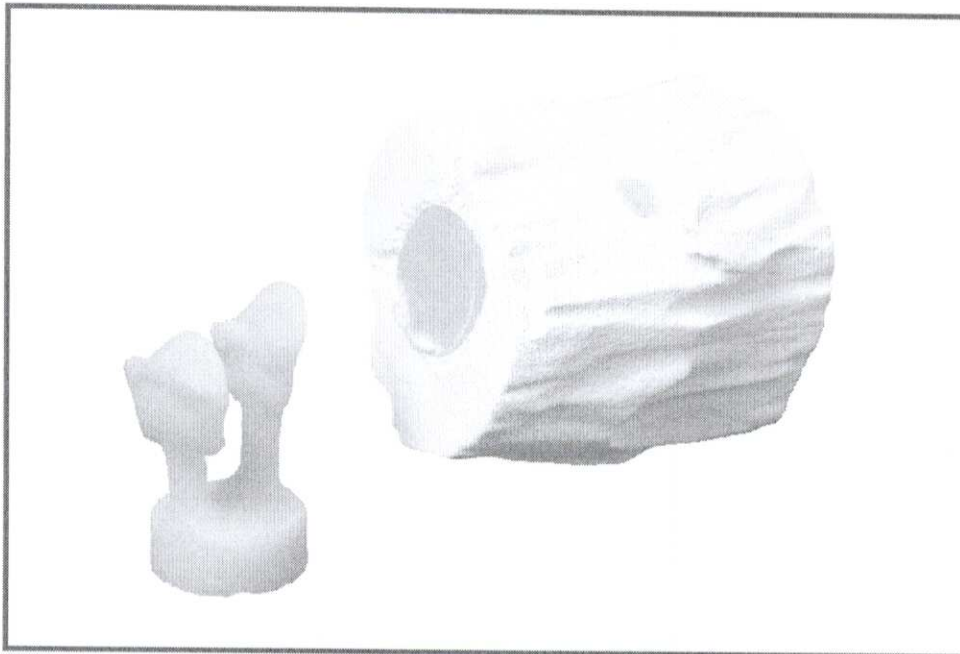
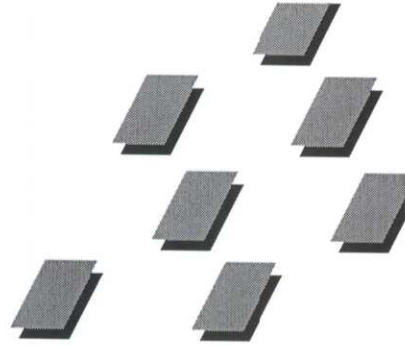
FOSFAATGEBONDEN INBEDMASSA VOOR PERSKERAMIEK (TYPE I)

RIVESTIMENTO A BASE DE FOSFATO PARA LAS TÉCNICAS DE CERÁMICA PRENSABLE (TIPO I)

FOSFATBUNDEN SNABBINBÄDDNINGSMASSA FRAMTAGEN FÖR PRESSKERAMER (TYP I)

FOSFATBUNDEN INDSTØBNINGSMASSE TIL PRES KERAMIK TEKNIK (TYPE I)

FOSFAATTISIDONNAINEN VALLUMASSA PRÄSSÄTTÄVILLE KERAMIAKTEKNIKOILLE (TYYPPI 1)



REVISED SEPTEMBER 2008

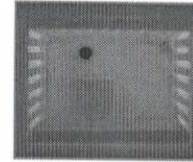
11. Heating Up – Burn Out Procedure

	Quick heating	Conventional Step heating
Insertion temperature	Pre-heated furnace at 850°C/1560°F*	Room temperature
Step 1		Room temperature (23°C/73°F) to 260°C/500°F Heat rate 6°C/42°F min.
Step 2		Holding time at 260°C/500°F 30-40 min.
Step 3		Rise temperature from 260°C/500°F to 580°C/1076°F 9°C/48°F per min.
Step 4		Holding time at 580°C/1076°F 30-40 min.
Step 5		Rise temperature from 580°C/1076°F to 850°C/1560°F* Heat rate 9°C/48°F per min.
Holding time	60 min. at end temperature	40 - 50 min. at end temperature

Due to aggressive burning out, do not open the furnace during heating-up.
When several investment rings are put into the furnace at the same time, prolong the heating period of each step with 10 minutes.

12. Pressing the ceramic

Follow carefully the instructions for use of the pressable ceramic.
(cf. GC Initial PC - Technical Manual, GC Initial IQ - Technical manual)
Press sequence should start as soon as possible after removing the investment ring from the furnace.



13. Cooling

Follow carefully the instructions for use of pressable ceramic.

Notes

- Clean bowl, spatula, etc. carefully after use. The chemical composition of the residual GC MultiPressVest® will delay the setting time of gypsum products.
- It is recommended that mixing bowls are stored in water between uses.
- Store powder & liquid at room temperature (+/- 23°C / 73°F).



Safety recommendations and hazard warnings

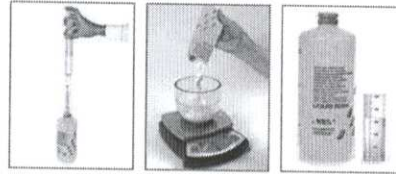
- Investment materials contain quartz.
Do not inhale dust!
Risk of lung damage (Silicosis, lung cancer).
Advise: wear protection mask Type FFP 2 – EN 149:2001.
Open the investment material bag with scissors and avoid the formation of dust when filling into the mixing bowl.
Rinse the empty investment material bag with water before disposal.
- Remove dust from your working place only when it is wet.
- To avoid the formation of dust when removing the investment material from the casting ring, place the cooled casting ring into water for a short time.
- When sandblasting the cast object, always use a fine-dust filter extraction system.

Packages

Powder: 6 kg box (100g pack x 60)
Liquid: 900 ml bottle
Expiry date: 2 years from the manufacturing date

5. Powder/liquid ratio

Ringsize	Powder	Liquid
Small	100 g	22 ml
Medium	200 g	44 ml
Large	300 g	66 ml



- Standard P/L ratio = 100 g / 22 ml
Exact powder/liquid measurement is necessary to obtain stable results.
Use adapted measure equipment such as electric balance, liquid measuring cup, pipette.

6. Expansion

Basic info on liquid concentration.

The used concentration of the expansion liquid depends on various parameters:

- storage temperature of the investment (powder and liquid)
- mixing time
- setting under pressure
- the amount of mixture

- The concentration can be freely adapted based on the working experience of the technician.
Basic rule: the higher the liquid concentration, the higher the expansion.
Longer setting will result in somewhat wider castings.
Use only distilled water to dilute.

Liquid dilution chart

All ceramic press techniques : • e.g. Initial PC (inlays, veneers)	80% Liquid	100g Powder	17,6ml Liquid/ 4,4ml dist. Water
Press ceramic over metal structures • e.g. GC Initial IQ – One Body, Press-over-Metal	90% Liquid	100g Powder	19,8ml Liquid/ 2,2ml dist. Water
Press ceramic over zirconium structures • e.g. GC Initial IQ – One Body, Press-over-Zircon	90% Liquid	100g Powder	19,8ml Liquid/ 2,2ml dist. Water

NOTE

All information included in this Instruction For Use is based on extensive testing and a whole series of pressing trials. However, because of different working methods and equipment (e.g. waxes, resins, mixing equipment, etc.) different end-results may be obtained.

All fit tests have been carried out with the quick heating method (20 min. setting) and GC Initial press ceramic systems.

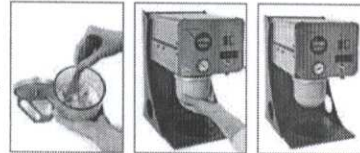
7. Mixing

1. Pre-mix powder and liquid thoroughly by hand with a spatula.

- Be sure all powder is wetted out by the liquid to give a uniform mixture.

2. Mix for 60 seconds under vacuum (320-420 rpm).

- Always use clean mixing bowl and check vacuum level. Insufficient vacuum leads to differences in fit and air-bubbles of the pressed objects.



8. Working time

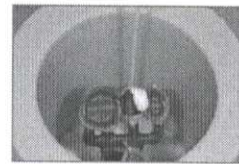
At least 6 minutes pouring time at room temperature (23°C).

- Working time / pouring time depends on the temperature of powder & liquid and on room temperature. Higher temperatures shorten the working time.

9. Investing

Invest under gentle vibration (low frequency).

- GC MultiPressVest® is very fluid, so strong vibration is not necessary and not advisable. From the moment the ring is totally filled, **stop vibration immediately** and do not touch the investment until set.



10. Setting time

Leave to set for 20 min. from **start of mixing**.

- Longer setting is possible and will result in somewhat wider pressed objects.
Best results are obtained by putting immediately into a preheated furnace after 20 min.

Scrape the top surface of the investment ring with a sharp knife/sandpaper.

- Diamond disks for trimmers are damaged by the quartz and cristobalite particles of the investment.



Dear customer,

We thank you for purchasing a high quality GC product.

This Instruction For Use gives you a clear summary of each working stage and is based on the results of numerous lab tests carried out by our Research and Development Department.

If you have any further questions on the use of this product, please contact your local GC representative.

For more information on GC products please visit our website www.gceurope.com.

GENERAL REMARK

All information included in this Instruction For Use is based on extensive testing and an extended range of trials. However, because of different working methods and equipment (e.g. waxes, resins, casting liner, mixing equipment, etc.), different end-results may be obtained.

GC MultiPressVest® is a carbon-free phosphate bonded speed investment for press-ceramic techniques. Specially developed for multiple press ceramic techniques like:

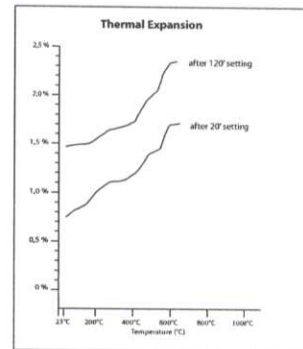
- All ceramic press techniques : inlays, facings, crowns
 - GC Initial PC
- Press ceramic over metal structures
 - GC Initial IQ – One Body, Press-over-Metal
- Press ceramic over zirconium structures
 - GC Initial IQ – One Body, Press-over-Zircon

GC MultiPressVest® offers you a number of advantages:

- Optimal fit, due to precise expansion control
- Accurate, detailed reproduction
- High fluidity, creamy consistency
- High thermal stability, adapted to the ringless technique
- Quick-heating as well as conventional heating up schedule
- Easy devesting
- Adapted to multiple press-ceramic techniques

PHYSICAL DATA (typical data)

ISO/DIN 9694.2; Measured at 23°C with 100% Expansion liquid	20' setting	120' setting
Heating up / Burn out procedure	Quick heating	Conventional step heating
Setting expansion	0.75%	1.50%
Thermal expansion	1.00%	0.90%
Total expansion (Linear)	1.75%	2.40%
Initial setting time	6'30"	6'30"
Compressive strength	5 MPa	5 MPa
Working time	5'	5'
Flow	13,5 cm	13,5 cm



INSTRUCTIONS FOR USE

1. Storage

Store powder and liquid at normal room temperature (23°C/73°F).

Storage and working temperature of investment powder and liquid are an important factor in determining the setting time and expansion, and hence the fit and the surface roughness of the pressed ceramic objects.

- Protect the liquid against low temperatures!
 - Do not store below 5°C/41°F.
 - Once frozen, the liquid cannot be used anymore.
 - Be careful with winter deliveries.

2. Working temperature

Use at ± 23°C/73°F room temperature (19°C/66°F minimum).

- Higher working temperatures slightly reduce working time but improve the surface smoothness. Lower temperatures prolong setting time and could result in surface roughness.

3. Preparations before investing

GC MultiPressVest® is a very fluid investment, which can be used without any wetting agents. Nevertheless, if a wetting agent is used, be sure to totally dry the surface prior to investing.

4. Ring sizes

- Use adequate silicone ring systems for the ceramic press technique (f.i. GC Silicon ring system - available in size 100g, 200g & 300g)

