



PATTERN RESIN

Low-Shrinkage Modelling Resin

Technique and Handling Guide

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GC PATTERN RESIN

Low-Shrinkage Modelling Resin. A modelling resin with unique properties

Contemporary materials, equipment and techniques enable dental technicians to manufacture high precision, aesthetic restorations – and naturally they prefer procedures, that are clear, easy to learn and safe to apply. In this context, accessory materials, which may at first glance appear unimportant, have in fact become absolutely indispensable.

Dental prostheses are as individual as the patients who wear them. It takes real teamwork to achieve perfect technical results and genuine satisfaction for patients. An exact transfer of intra-oral situations to the laboratory, using precise and reproducible laboratory methods, makes the team-oriented interaction of dentists and dental technicians easier. Helpful aids, such as a universal high-precision modelling resin, are invaluable for these procedures.

Over many years of service to the dental and dental technician professions, PATTERN RESIN modelling resin has proven a safe, versatile and easy to handle material. PATTERN RESIN was specially developed for the brush technique. Its unique handling properties make it suitable for many different indications including attachment, crown and bridge, implant and electroforming techniques.

PATTERN RESIN is further well established and proven for a number of detail applications, such as resin dies, fixation prior to soldering or milling, or core build-ups. This technique and handling guide lists some of the numerous chairside and laboratory indications and provides you with application examples from various fields of dental technology.



Indications

Attachment technique	Conical or telescopic crowns Bars Custom attachments Resin dies Fixation of crowns for transfer impressions
C&B technique	Inlays, onlays Adhesion bridges (Maryland)
Soldering	Splinting for soldering procedures
Model cast partial dentures	Modelling of extensions, lingual bars and clasps
Implant technique	Manufacture of custom implant abutments Implant bite registrations Intra-oral splinting of transfer abutments Suprastructures
Electroforming (Galvano)	Resin dies for electroforming technique

Features and Benefits

Features	Benefits
Low polymerisation shrinkage	Perfect fit of the pattern and the cast object
Perfect handling properties for brush technique	Easily controlled and precise application Even large extensions can be built up without problems Quick setting, yet convenient application with brush technique Economical usage
Favourable flow behaviour and high wettability	Easy workability Does not flow from applied areas Homogeneous resin workpieces Optimally adapted to brush technique Efficient and economical
Burns out without residues	Homogeneous castings
High hardness and strength	High stability even in thin layers Fine surface adjustments can be made with burs Smooth surfaces after grinding or milling
Short setting time	Time-saving and economical, also for mixing technique
Perfect adhesion to already polymerised PATTERN RESIN	Homogeneous, smooth casting surfaces with precise margins
Unlimited dimensional stability of PATTERN RESIN dies	Dimensionally stable dies even after hours or days No dimensional changes due to room temperature

Brush Technique – Step by Step



1. Mix powder and liquid:
Dispense adequate amounts of powder and liquid into the respective mixing cups.

Tip: The pipette helps to dispense the exact amount of liquid.



7. Repeat the above procedure to cover the whole surface with a thin layer of PATTERN RESIN.

Tip: As fresh PATTERN RESIN adheres perfectly to already polymerised material, separate small dots can easily be connected.



2. Slightly moisten the brush.

Tip: Squeeze out excess moisture by pressing the tip of the brush on the inner wall of the mixing cup. This also creates a finely pointed tip.



8. Even where high precision is required, e. g. at primary crown margins, PATTERN RESIN exhibits perfect flow and fit.



3. Pick up a small amount of PATTERN RESIN powder with the moist brush.

Due to the material's thixotropic properties, a small resin bead will form on the tip of the brush.



9. After polymerisation of PATTERN RESIN, carefully remove the pattern to check the internal surface.

Tip: Small retentions help to remove the pattern from the primary crown.



4. The resin bead remains stable on top of the brush and is ready e. g. for modelling of secondary crown patterns.



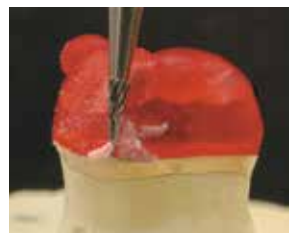
10. The inside of the pattern shows the same glossy surface as the primary crown.



5. Deposit the resin bead on the metal surface of a primary crown.

Working time: 2-3 min.
Setting time: 4 min.

Tip: No separating agent is needed on smooth metal surfaces.



11. Place the pattern back on the primary crown and make fine adjustments with a suitable grinding instrument (e.g. cross-cut tungsten carbide).



6. Tip: To clean in between times – dip the brush into PATTERN RESIN liquid and dry with a tissue.



12. Evenly reduce the thickness of the pattern to 0.3 - 0.4mm and check with a calliper. Also check the margins.



13. Place the pattern back on the primary crown.



14. Prepare the wax-up using an appropriate inlay wax. Check occlusion, contact area and contour as usual.



15. The wax-up is ready for connection of the sprues.



16. Connect the sprues according to the casting system and method used.



17. Position crown in the casting ring.

Tip: Investing PATTERN RESIN workpieces always require a greater proportion of investment liquid than wax patterns. For detailed information refer to the respective instructions for use.

18. Mix and pour phosphate-bonded investment (Fujivest Platinum, or Fujivest II) according to the instructions for use.



19. Heating-up is carried out according to the schedules given in the instructions for use. Cast in the usual manner.



20. Deflask in the usual way and clean the cast metal surface with glass beads.



21. Check the inner surface carefully and remove inaccuracies with an appropriate grinding instrument.



22. The inside of the secondary crown shows a homogenous, glossy finish.



23. The secondary crown fits perfectly on the primary crown.

Photographs: ZTM V. Brosch

Implant Restorations

Some examples for the use of PATTERN RESIN in implantology:

Case 1



1. Step-by-step build-up of an implant suprastructure with PATTERN RESIN.



2. Suprastructure with integrated horizontal screw threads. Further crown build-up will be carried out with modelling wax.



3. The high precision fit of the cast suprastructure manufactured with the aid of PATTERN RESIN is immediately evident.



3. The implant analogues have been fixed with PATTERN RESIN and cast-on titanium tubes screwed into the analogues, prior to manufacture of the suprastructure.

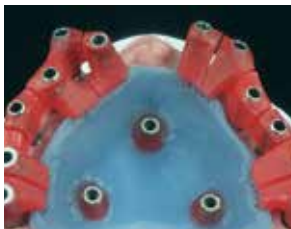


4. PATTERN RESIN buildup as a preparatory step for the manufacture of the suprastructure.



5. Reduced PATTERN RESIN frame as a stabilising basis for the suprastructure.

Case 2



Example of a technique for passive transfer of the intra-oral situation to the working die.

Further examples:



Intra-oral splinting of transfer abutments.

Case 3



1. Maxillary transfer template after intra-oral connection of the transfer abutments with PATTERN RESIN. Implant analogues are already inserted for preparation of the working die.



Transfer of the intra-oral positions of ceramic abutments.



2. The transfer template on the working die.



Customised abutment made of PATTERN RESIN ready for CAD/CAM technique (left). Milled zirconium abutment (right).

Photographs: ZTM U. Buhr,
ZTM B. Weissmann,
ZTM O. van Iperen

Electroforming Restorations

In connection with electroforming technology, PATTERN RESIN has been successfully applied in several indications:



1. Electroformed die made of PATTERN RESIN, with stainless steel screw as a removal aid.



2. AGC® electroformed coping after gold deposition.



3. Removal aid made of PATTERN RESIN, for easy removal of the metal coping to avoid deformation.

Electroforming in connection with bridge techniques:



1. Tension-free pontic-shaped with PATTERN RESIN, for Galvano cast-on technique.



2. Occlusal view of a posterior bridge. (For technical details please refer to "AGC® Galvano technique" instructions for use)

Photographs: Wieland Dental + Technik, ZTM C. Gadau

Core build-up



Core build-up of a molar crown, prior to preparation.

Telescopic bridges



PATTERN RESIN secondary crowns for a telescopic bridge.



The cast metal structure.



Completed restoration.

Photographs: ZTM V. Brosch

Questions and answers

1. Should I insulate the surface of the primary component before building up PATTERN RESIN?

Insulation of the primary component is not required if PATTERN RESIN is used on a smooth, milled metal surface.

2. How can I tell that I am using the right mixing ratio of powder and liquid for the brush technique?

After dipping the wet brush into the powder, the little bead on the tip of the brush should be slightly wet and have a shiny surface.

3. Which burs are recommended for adjustments of the polymerised PATTERN RESIN surface?

For adjustments or milling, use tungsten carbide burs or cross-cut instruments.

4. Can I mill the surface of PATTERN RESIN in the same manner as wax?

Dies and workpieces made of PATTERN RESIN can be shaped, contoured and milled by means of a milling machine.

5. Which steps should I observe when I use PATTERN RESIN on stone dies?

Check the stone die, stumps or cavities for undercuts, inaccuracies or rough surfaces. Block-out undercuts with an appropriate wax and seal the die surface with Die Hardener. Wet the cavity or stump surfaces with a separating agent.

6. In connection with the brush technique, can I apply PATTERN RESIN in small dots?

PATTERN RESIN can be built up in small sections or dots. Each section will polymerise separately and adhere to the other sections. After covering the complete base, PATTERN RESIN shows a homogenous surface. This technique minimises total polymerisation shrinkage.

7. How can I clean the brush?

For intermediate cleaning, dip the brush into PATTERN RESIN liquid and dry with a tissue.

8. How can I remove a secondary pattern from the primary component in a safe and easy way?

Small opposing retention beads attached to the surface help to remove the pattern.

9. Should I treat PATTERN RESIN objects with a wetting agent before investing?

Generally, the quality of casting surfaces depends on the use of a wetting agent. However, if PATTERN RESIN is applied on smooth or polished metal surfaces without undercuts, there is no need to use a wetting agent. If there are wetting agent residues, the internal surface of the cast restoration will not be smooth.



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