Tips and tricks GCP Glass Carbomer™

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BioSafe®

Tips and tricks GCP Glass Carbomer™

General tips & tricks GCP Restoratives

- Instructional videos can be seen on www.gcp-dental.com/videos or scan the QR code on the package.
- DO NOT etch the prepared cavity. The cavity can be cleaned with a EDTA solution or a 1,5% sodium-hypochlorite solution. Rinse with water and dry, but do not desiccate (chalk white). The cavity should be 'tissue wet' before filling.
- DO NOT use a bonding agent, fusion of the cement with enamel and dentine will be through enhanced remineralisation.
- BULK FILL: GCP Glass Fill does not need to be applied in layers. The entire filling can be applied in one layer (bulk-fill) and then cured by command set with thermocure.
- One capsule usually suffices for a molar tooth. If this is not the case, fill the cavity with an additional capsule, after placement apply GCP Gloss, and apply thermocure for a minimum of 90 seconds
- GCP Glass Fill can be used for class I, II, III, V, cervical fillings.
- GCP Glass Fill can be used as a underlying base substrate for composite, (the so-called "two-phase sandwich technique"). Prepare the layer of GCP Fill back about 1mm to remove excess gloss and create a rough surface. Do not etch the glass but use composite bond directly on the GCP surface. Follow manufacturer's instructions for applying composite to dentine and enamel.
- To obtain the optimal technical properties, fillings should be cured immediately individually. Completing more than one filling at the same time will therefore affect the performance of the final restoration.

Tips and tricks GCP Glass Carbomer™

The function of GCP Gloss

- GCP Gloss is used for easier modelling of the restoration. It protects against moisture and desiccation during setting. It also provides a protective layer on the surface of the restoration with enhanced product properties. GCP Gloss can be applied as a thin layer after application of the fill or sealant. Some drops of Gloss can be put onto a mixing cushion or cup and then applied with a rounded instrument, a cotton bud applicator, or a disposable brush.
- A plastic dispensing cup can be used to dip the instrument finger or thumb to apply some Gloss to the glove tip and subsequently press and model the filling properly; this technique is especially suitable for sealants or occlusal fillings.

Equipment and instruments needed for GCP Glass Carbomer

For finishing and modelling:

- For this purpose several green and white wheels and Soflex* discs can be used, finishing with diamond finishing burs and fine Soflex* discs.
- Use extra fine, friction grip diamond with water cooling,
- Use diamond polishing burs and yellow striped burs

Equipment needed for GCP restorative materials:

- Capsule mixer: GCP CarboMIX CM-02, several other high-frequency mixers
- Applicator to apply the capsule: GCP CarboCAP CC-01 or a GC or 3M applicator
- Thermocure lamp: GCP CarboLED CL-02; Ultradent VALO; 3M Elipar

*Soflex is a trademark of 3M

Different preparation of enamel prisms when using composites and Glass Carbomer

When using Glass Carbomer, there is an important difference with composites when preparing the enamel surfaces. In order to obtain sufficient adhesion when using composites, the enamel prisms need to be prepared at an angle (fig 1). When using Glass Carbomer or Glass Ionomer such preparation is not necessary and even counterproductive (fig 2). The adhesion to dentine is more than sufficient for these materials. You are also saving more of the natural tooth structure as an additional advantage.

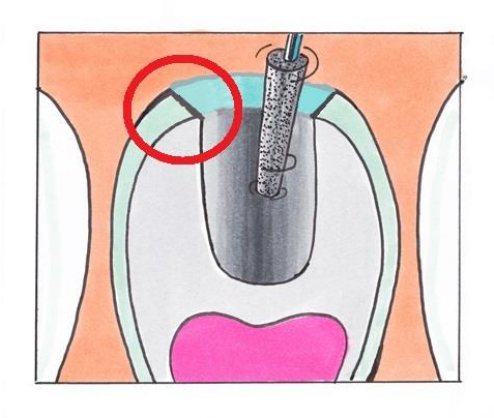


Fig 1: enamel prisms prepared at an angle, preparation for composites

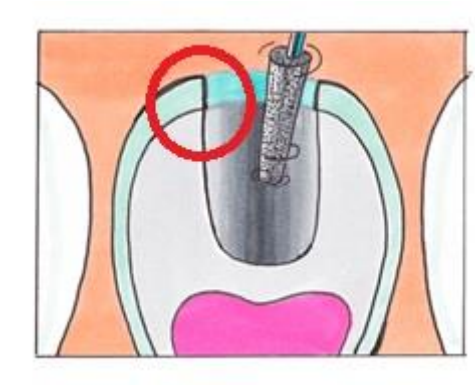


Fig 2: straight enamel prisms, correct preparation for Glass Carbomer & Glass Ionomer

Tips and tricks Thermocure

The importance of thermocure

Thermocuring is of vital importance for a successful Glass Carbomer restoration. Its correct use makes Glass Carbomer exceptionally suitable as a permanent restorative. When thermocure is applied correctly, breakdown or abnormal wear should rarely occur. Please take the following points into consideration:

Take your time

The most important factor for thermocuring is time to impart enough heat to the material surface. It is better to take a little more time than to have to repair the restoration later.

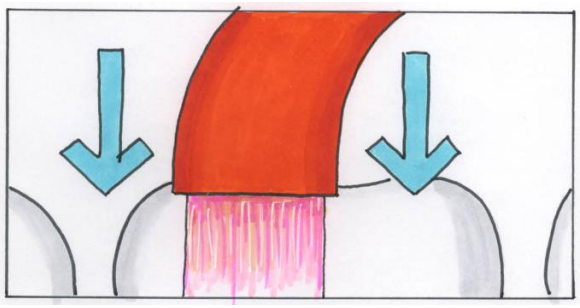
For a small filling 60 seconds is usually enough for successful curing. If the restoration is larger the time must be increased. For an MO or DO restoration this should be at least 90 seconds and for an MOD at least 120 seconds. If the surface is broader than the light guide, the mesial and distal aspects should be thermocured separately. Always test if the material is properly cured by scratching it with an explorer. If you hear a scratching sound you can finish the restoration. If it does not, thermocure for another 30 seconds.

You cannot over-cure the material, but it is possible to under-cure. Take your time for this procedure!

Use the correct lamp

All lamps decrease in intensity as they age. It is important that you test your lamp regularly (with a thermometer) to ensure it reaches the correct temperature. Place the tip of the lamp against the tip of a thermometer. After 1 minute the temperature must be between 55-65° Celsius. Less accurate, but a good indicator, is to hold the tip of the lamp on your finger. If you have to remove it from your finger within 10 seconds due to the heat build-up, the lamp is generally strong enough. If this is not the case, the new CarboLED CL-02 is a good replacement for curing Glass Carbomer, Glass Ionomer and composites.

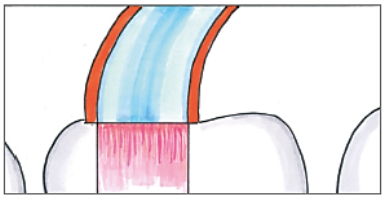
Use the TOUCH-DOWN technique



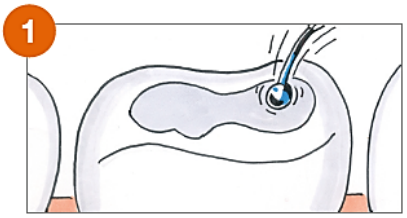
The TOUCH-DOWN technique with the light guide in contact with the restorative surface is essential for effective thermocure. If it is not possible to make contact with the material, for instance due to a higher matrix band, ensure that the distance between the light guide and the material is as small as possible.

Thermocure Quickstart

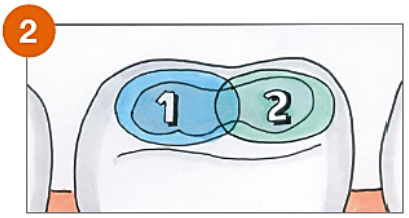
Thermocure introduction



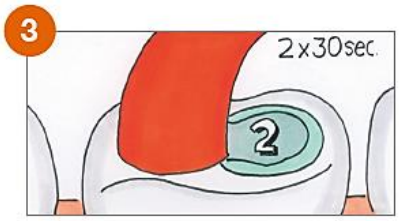
Introduction: After placing GCP Glass Fill, Seal, Crown or Bridge cement, thermally accelerated curing or "thermocure" will quicken setting time and greatly increase the setting strength. GCP setting reaction, unlike composite restoration, is essentially endothermic. Thermocure helps maintain the curing reaction and strong gel formation.



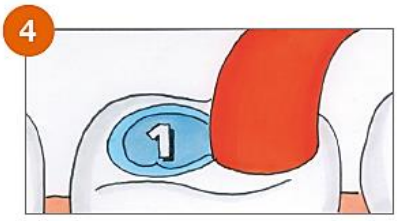
Shape GCP restorative material with instruments coated with GCP Gloss.



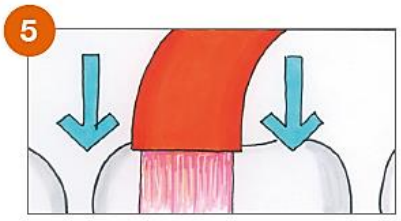
Switch on GCP CarboLED and set time for 30 secs (See CarboLED getting started instructions). Place tip onto the GCP restorative so that it is touching. The "touch-down technique". This direct contact is essential to transfer heat. Larger restorations covering a wide surface area may require to repeat the thermocure procedure to cover the complete surface.



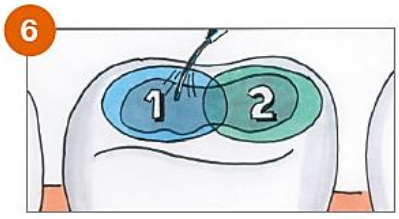
The thermocure procedure will require 2 x 30 secs minimum thermocuring. Only use GCP CarboLED for this purpose. With larger restorations, repeat on both mesial and distal aspects of the restoration.



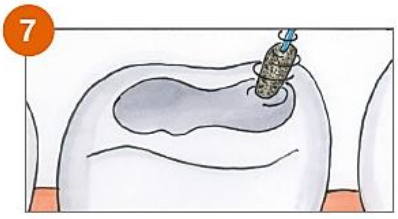
Repeat on adjacent surface as required. Apply thermocure to next position on the restoration surface.



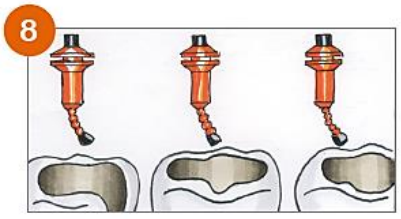
The TOUCH-DOWN TECHNIQUE with the light guide in contact with the restorative surface is essential for effective THERMOCURE.



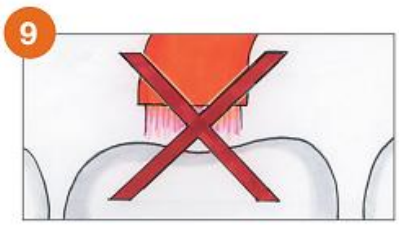
After thermocure, test hardness by running a sharp probe/explorer over the material surface. Repeat thermocure for a further 30 seconds if scratching feedback is not evident.



Finally shape and polish using standard rotary abrasive points or discs.



Treat each restoration separately.



Avoid distance during thermocure.

Avoid movement during thermocure.

How to use a matrix system in order to create a good contact point

When choosing a matrix system it is important that you pick a system that supplies anatomically contoured matrices. For thermo curing the matrix must be metal. Conventional Tofflemire systems often have straight bands resulting in a contact point that is anatomically too high and creates a sharp occlusal edge. The result is a weak contact point that is liable to fracture when removing the matrix or after occlusal adjustment.

Partial matrix systems (like from Garrison or Palodent/Triodent) are best suited.

- ✓ anatomically contoured matrices
- ✓ metal (dead-soft) matrices preferably with non-stick coating
- X straight Tofflemire matrices

GCP Dental recommends:

Palodent/Triodent V3 Sectional Matrix System with non-stick bands

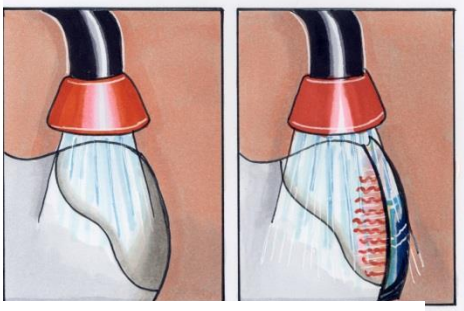
Garrison Composi-Tight® 3D™ System with Slick Bands™ Matrices

Removing the matrix

The material has very high bond strength to enamel and dentin. Unfortunately it also bonds well to the matrix system. Here are several tips that should help you install and remove the matrix successfully:

- Use a matrix band with a non-stick coating
- Before installing the matrix, apply a very thin layer of GCP Gloss to the matrix
- Break the bond between the matrix and the restoration using an explorer or other instrument before removing.

- Grab the side of the matrix using a forceps and carefully check if you can freely wiggle the matrix. Remove the matrix slowly in a lingual-buccal direction



- Use the full thermocure cycle (60-120 seconds) and prolong it with 30 seconds with larger 3D restorations
- Aim the thermocure device towards the metal matrix band, keeping the light guide in touch with the metal matrix in order to conduct the heat along the contact point.
- Wait until full chemical setting is finished (approx. 7 min 30 sec) before removing the matrix.

- Use a dead soft matrix and use a tight, well-fitting anatomical wedge and tight V-ring. Please apply the V-ring and wedge early in Tx on patient in order to open the contact point as compensation for matrix thickness. When two adjacent restorations, thermocure 1 filling at a time. Please cure and finish these before continuing the other opposite on behalf of an optimal approximal anatomic design.
- In severely critical MOD restorations (in same tooth mesial and distal box cases) apply 1\2 sides filling separately and cure. Use of patience in these cases is important.