GRADIA™ PLUS

A Guide for the Injection Technique

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INTRODUCTION

GC GRADIA™ PLUS is a modular composite system for indirect restorations. The light-curable, nano-hybrid composite has improved physical properties and offers a wide range of clinical applications, unsurpassed durability, natural opalescence and excellent, lifelike aesthetics.

This technical manual for the injection technique will give you a good idea of how easy it is to get a convincing, aesthetic result with minimum effort by using the GRADIA™ PLUS Light Body pastes. With this technique a diagnostic wax-up, either printed, milled or hand-made, is translated into a highly aesthetic restoration. Because the injection technique fits perfectly in a digital workflow, it is ideal for complicated implant cases or high-end crowns & bridges with a complex anatomy. The clear step-by-step procedure ensures a predicable end-result.

Prior to use, please carefully read the instructions for use included with the sets.

Cover image: Courtesy of S. Maffei, Italy

INJECTION TECHNIQUE

1. Model preparation

A gypsum model with implant analogues has been cast using GC FUJIROCK™ EP.

EXACLEAR, clear vinyl polysiloxane is used as a gingiva mask. This will allow us to photopolymerise the basal part of the injected GRADIA™ PLUS composite.

For the prosthetic part an Aadva® SR abutment with Ø4.8 mm was chosen.

2. Digital design

After scanning the model in the Aadva® Lab Scan 2, a full anatomical, digital mock-up is designed and printed with GC Temp PRINT.

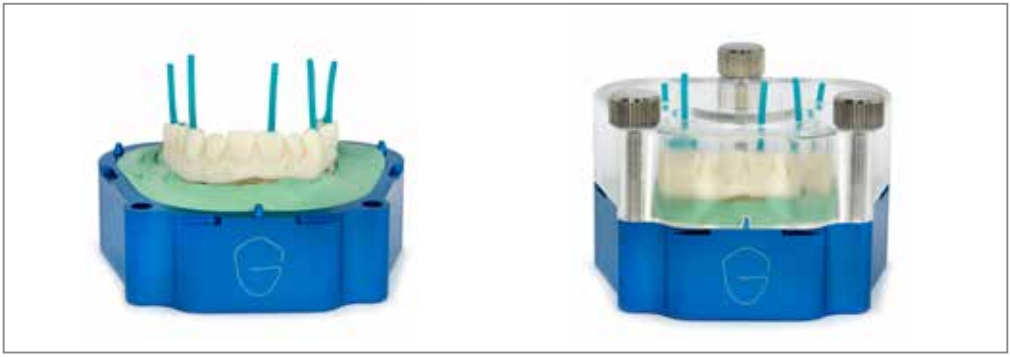
The printed mock-up is fitted onto the model. If required, GC Temp PRINT can be individualised using OPTIGLAZE® color and used as a long-term provisional.

The anatomical design of the mock-up was digitally reduced and milled in titanium.

3. Flask preparation

The mock-up is screwed onto the model and placed into a flask. Screwholes are then sealed with a bit of wax and the model is fixed into the flask with putty.

Tip: before sealing the screwholes with wax, push a clot of Teflon into the access hole.



Fix the sprues onto the mock-up and carefully check their position with the top of the flask onto it. The sprues should be postioned in the middle of the hole.

Tip: Ideally a sprue of Ø3.0 mm is used, as this diameter corresponds with the sprue of the GRADIA™ PLUS light body syringe.

A clear silicone is used to fill the entire flask. For easy removal of the top part after curing, coat the putty surface first with a bit of vaseline or a dedicated separator. Remove the wax sprues and clean the injection channels thoroughly.

4. Framework preparation

After milling, the titanium framework is prepared, sandblasted and cleaned.

METAL PRIMER Z is applied on the surface and left to dry.

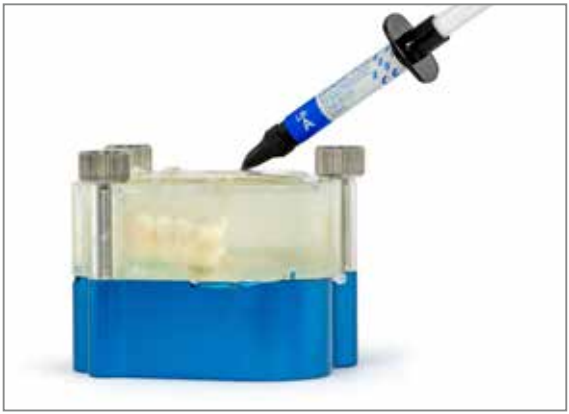
A first, thin layer of opaque is applied and light cured for 1 minute. Repeat this process until the metal is completely masked.

For extra individualisation, darker or lighter shades of opaque can be applied. Light cure.

Cervical and occlusal areas are covered with small amounts of LB-orange to create a warm, in-depth effect. Light cure.

Screw the framework on the model, push a clot of Teflon in the screwholes and seal with wax.

5. Injection procedure



Check carefully if all wax residue from the sprues was removed. Light Body A (or any other Light Body Dentin shade) can then be injected into the mould. Let the composite flow from sprue to sprue until it gently comes out. Place a finger onto the channels and slightly apply pressure.

Tip: When the silicone mould is completely filled with composite, leave for 5 minutes in a dark place. This eliminates the dimensional deformations caused by the pressure of injection and will allow the clear silicone to return to its original position.

With diamond and tungsten burs, a cut-back is performed on the anterior teeth.

Apply CERAMIC PRIMER II on the surface.

Internal characterisation of the anterior teeth is carried out with LB-Yellow for the mamelons, LB-Milky for the proximal ridges, LB-Base Opal in between the mamelons and Base-CLF for the dentine-enamel junction. Light cure.

Place the model back in the flask, close the screwholes with teflon and wax and carefully screw the top part back on the flask. Check perfect positioning.

Tip: Cut the putty in straight cuts with a sharp knife for easy repositioning in the flask.

LB-Base E is used to inject the enamel part and light-cured afterwards.

Unscrew the top part of the flask...

...and remove the sprues with a diamond disk.

Remove wax and Teflon from the screwholes...

...and unscrew the restoration.

Thanks to transparency of EXACLEAR, the basal area is also fully cured.

6. Gingival reproduction

Adjust contour and shape with diamond and tungsten burs.

Prepare the gingival area with dedicated burs and apply CERAMIC PRIMER II.

Tip: for easy application, a small layer or Light Body is applied first on the surface.

Gingival anatomy is reproduced using Gum Heavy Body shades for creating volume and Gum Light Body shades for characterisation.

Small details, such as the labial frenulum, can be easily made with a Gum Light Body shade.

A combination of Gum Light Body shades is used to cover the lingual area.

Tip: for a life-like and natural appearance, try not to grind gingival area.

After step-curing, cover the entire area with GRADIA™ PLUS AIR BARRIER and lightcure in Labolight DUO for 3 minutes.

7. Gloss & characterisation (coating method)

Gloss and characterisation can be done using the GRADIA™ PLUS Lustre Paints.

- Sandblast (1.5 bar, 50 µm)
- Immediately apply CERAMIC PRIMER II to the surface and let dry.

For external characterisation and gloss, GC GRADIA™ PLUS Lustre Paints should always be diluted using the dedicated Lustre Paint Diluting Liquid. By diluting the Lustre Paint you can create your own preferred consistency. Light cure.

Tip: to add gloss, coat the teeth with LP-CLF (with fluorescence) and the gums with LP-CL (without fluorescence).

8. Final result

9. GC GRADIA™ PLUS - LIGHT-CURING

Approved light-curing devices

- Labolight DUO (GC)
- Labolight LV-II / Steplight SL-I (GC)

Irradiation time and curing unit				
Curing unit	Labolight DUO		STEPLIGHT SL-I	Labolight LV-III,II
	Step-mode**	Full-mode	Pre-Cure**	Final cure
OPAQUE	-	1 min	-	1 min
PASTE HB, PASTE LB, GUM SHADES LB, GUM SHADES HB	10 sec*	3 min	10 sec	3 min
LUSTRE PAINT***	10 sec	90 sec	10 sec	5 min

* For one surface of a single crown
** Distance from light source: 3 cm
*** Thickness: 0.1 mm or less

Labolight DUO

Labolight LV-III,II

STEPLIGHT SL-I

RELATED PRODUCTS

GRADIA™ PLUS

Aadva® Lab Scan 2

GC Temp PRINT

Aadva® Implants

EXACLEAR

NOTES

Scan the QR code to check the injection technique video

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