Definitive Restorations
Cementation Workflow

SprintRay | ivoclar

Notice	**For details, please refer to the Adhese® Universal and Variolink® Esthetic DC instructions for use.**
Try-in of the restoration and isolation	Seat the restoration using the desired Variolink Esthetic Try-In Paste and check the shade, fit and occlusion of the restoration. If necessary, make adjustments with fine diamonds at medium speed and with light pressure and adequate water cooling. Polish ground surfaces. Adequate relative or absolute isolation using suitable auxiliaries, such as OptraGate® or OptraDam,® is required.
Conditioning/surface treatment of the Ceramic Crown restoration	In order to achieve a sufficient bond to the luting composite, it is mandatory to sandblast the restoration surface. Adhese Universal must be used to condition the restoration surface! Sandblast the bonding surface with 50–100 µm aluminium oxide at 1–1.5 bar pressure. Clean the restoration in an ultrasonic unit with 70% ethanol. Thoroughly rinse with water spray and dry with oil-free air. Apply Adhese Universal on the conditioned surface and scrub it in for 20 seconds. This time must not be shortened. Applying Adhese Universal on the restoration surface without scrubbing is inadequate. Following this, disperse Adhese Universal with oil-/moisture-free compressed air. Do not light-cure Adhese Universal. Curing takes place together with the luting composite after the restoration has been seated.
Pre-treatment of the prepared tooth – Isolating and cleaning the preparation	When an adhesive luting protocol with composites is used, safe isolation of the operating field – preferably with a rubber dam, e.g. OptraDam, or alternatively with cotton rolls and a saliva ejector – is required. Clean the preparation(s) again using a polishing brush and an oil- and fluoride-free cleaning paste (e.g. VivaDent® Polishing Paste fluoride-free) and rinse with water spray. Then lightly dry with water- and oil-free air. Avoid over-drying.
Pre-treatment of the preparation and application of Adhese Universal	Adhese Universal is suitable for the “etch & rinse”, “selective etch” and “self-etch” procedure.
Conditioning with phosphoric acid gel	The bond to enamel can be improved by selectively etching the enamel or by applying the “etch & rinse” technique. Unprepared enamel surfaces must always be conditioned with phosphoric acid gel. Please observe the instructions for use for the phosphoric acid gel. **A. Selective enamel etching** Apply phosphoric acid gel onto the enamel and allow it to react for 15–30 seconds. Then rinse thoroughly with a vigorous stream of water for at least 5 s and dry with oil- and water-free compressed air until the etched enamel surfaces appear chalky white. **B. Etch & rinse technique** Apply phosphoric acid gel onto the prepared enamel first, and then onto the dentin. The etchant should be left to react on the enamel for 15–30 seconds and on the dentin for 10–15 seconds. Then rinse thoroughly with a vigorous stream of water for at least 5 s and dry with oil- and water-free compressed air until the etched enamel surfaces appear chalky white.

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Application of Adhese® Universal	Starting with the enamel, completely coat the tooth surfaces to be treated with Adhese Universal. The adhesive must be scrubbed into the tooth surface for at least 20 seconds. This time must not be shortened. Applying the adhesive on the tooth surface without scrubbing is inadequate. Disperse Adhese Universal with oil- and moisture-free compressed air until a glossy, immobile film layer results.
Important information	Avoid pooling, since this can compromise the fitting accuracy of the permanent restoration. Exposure to intensive light should be avoided during application. Prevent any contamination of the applicator/cannula with blood, saliva, sulcus fluid or water during application. In the event of contamination, the cavity must be rinsed again and the procedure must be repeated with a new applicator / cannula.
Light-curing the adhesive	Adhese Universal is light-cured for 10 seconds at a light intensity of 500 to 1,300 mW/cm^2.
Placement of the restoration with Variolink® Esthetic DC	See IFU of Variolink Esthic DC for detailed information on shade selection, working time and curing time.
Application	Removal of the temporary restoration and cleaning of the cavity. Remove any possible residue of the temporary luting cement from the cavity or the preparation with a polishing brush and an oil- and fluoride-free cleaning paste (e.g. VivaDent Polishing Paste fluoride-free prophy paste). Rinse with water spray. Subsequently, dry with oil- and moisture-free air. Avoid over-drying.
Notice	Cleaning with alcohol can lead to dehydration of dentin
Seating of the restoration	For each application place a new mixing tip on the syringe. Dispense Variolink Esthetic DC from the automix syringe and apply the desired quantity directly to the restoration. As the luting material will cure in the used mixing tip, it serves as a seal for the remaining contents of the syringe until needed again (replace with a new tip before the next use). Variolink Esthetic DC should be processed quickly after extrusion from the automix syringe and the restoration seated in place. Seat the restoration and fix/hold it in place during excess removal.
Remove all excess luting material.	**A. Wiping technique** Remove excess material immediately with a brush, dental floss or scaler. Make sure to remove excess material in time, especially in areas that are difficult to reach (proximal areas, gingival margins, pontics). **B. Quarter technique (max. 6 bridge abutments)** Light-curing of excess and subsequent removal Light-cure excess material with the polymerization light (e.g. Bluephase PowerCure, PRE-mode) for 2 seconds per quarter surface (mesio-oral, disto-oral, mesio-buccal, disto-buccal) at a distance of max. 10 mm. Thereafter, excess cement is easy to remove with a scaler. Make sure to remove excess material in time, especially in areas that are difficult to reach (proximal areas, gingival margins, pontics).

Polymerization

As with all composite systems, Variolink Esthetic DC is subject to oxygen inhibition. In other words, the surface layer (approx. 50 µm) does not polymerize during the curing process, as it comes in contact with atmospheric oxygen. To prevent this, cover the restoration margins with glycerine gel / airblock (e.g. Liquid Strip) immediately after excess removal.

Polymerize Variolink Esthetic DC in segments, starting with the proximal margins:

Light Intensity (mW/cm^2)	Exposure Time (seconds)
500 – 800	20
900 – 1,300	10

Finishing and polishing the completed restoration

Check occlusion and functional movements and make adjustments if necessary. Finish the cement lines with finishing diamonds if necessary. Smooth out the cement lines using finishing and polishing strips and polish them with suitable polishing instruments (e.g. OptraGloss®).

If necessary, finish the restoration margins with suitable polishers (e.g. OptraGloss).

Optional: Subsequent adjustments

Further adjustments (of e.g. the contact points) may be necessary after the restoration has been completed. These adjustments can easily be made with any composite resin (e.g. Empress Direct, Tetric EvoCeram,® Tetric EvoFlow® or SR Nexco®).

Procedure

Roughen the area to be repaired using coarse diamonds or sand blast. Then thoroughly rinse with water and dry with water- and oil-free compressed air.

Apply Adhese Universal on the pre-treated surfaces, leave to react for 20 seconds and then disperse with a strong stream of air.

Light-cure Adhese Universal for 10 seconds using a light intensity of ≥500 mW/cm^2.

Subsequently, apply the composite according to the respective instructions for use.