

3M™ ESPE™ Lava™ Ultimate CAD/CAM Restorative

General

The 3M ESPE Lava Ultimate CAD/CAM Restorative is a strong, wear-resistant and highly esthetic mill block that provides a fast and easy-to-use alternative to glass ceramic blocks for milling CAD/CAM indirect restorations. The material is specially processed to enhance its properties for use in CAD/CAM milling procedures. Lava Ultimate restorative is a Resin Nano Ceramic containing approximately 80 % (by weight) nanoceramic particles bound in the resin matrix. The ceramic particles are made up of three different ceramic fillers that reinforce a highly cross linked polymeric matrix. The fillers are a combination of non-agglomerated/non-aggregated 20 nanometer (nm) silica filler, non-agglomerated/non-aggregated 4 to 11 nm zirconia filler, and aggregated zirconia/silica cluster filler (comprised of 20 nm silica and 4 to 11 nm zirconia particles).

Lava Ultimate restorative is milled into dental restorations using a dental CAD/CAM system; the restorations should be bonded to tooth structure with adhesive resin cement.

Indications

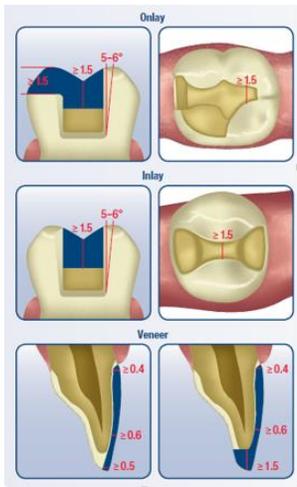
Lava Ultimate restorative is indicated for inlays, onlays, and veneers. Onlays are defined as a restoration where the preparation must minimally contain an internal retentive design element e.g. an interproximal or occlusal box.

Lava Ultimate restorative is not indicated for uses other than those listed.

IMPORTANT: Do not use Lava Ultimate restorative for any type of crown because there exists a potential for debonding.

Tooth Preparation

Prepare tooth for maximum mechanical retention.



Do

- Ensure that inlays and onlays have an internal retentive element
- All internal edges and line angles should be rounded
- Non-beveled shoulder finish lines are recommended
- **Mechanically clean** any contamination (e.g. debris, powder, temp cement) from the tooth prep and rinse with a strong stream of water
- **Slightly air dry** (surface should appear glossy)

Don't

- Do not undercut
- Do not use any chemical agents after preparation, (e.g. H₂O₂, EDTA, bicarbonates, astringents, desensitizers, solvents)
- Do not use laser etching
- Do not use eugenol cement for cementation of temporary restoration

Inlay and Onlay

Use traditional inlay and onlay design defined as a restoration where the preparation must minimally contain an internal retentive design element e.g. an interproximal or occlusal box. Do not undercut. Taper the cavity walls 5-6 degrees to the long axis of the preparation. All internal edges and angles should be rounded. Incisal/occlusal reduction is 1.5 to 2 mm clearance in centric occlusion and all excursions.

Veneer

Standard reduction of the labial surface is 0.6 mm and 0.4 mm at the gingival portion because the enamel is thinner in this area. The reduction of the incisal, labial-lingual angle is 0.5 to 1.5 mm. Keep preparation margins in the enamel. Margins for the veneers should be above the gingival tissues. Chamfer or rounded shoulder should be used for all preparations. Proximal extensions should be far enough into the proximal region so margins do not show and have no proximal-gingival undercuts.

Pulp Protection

If a near-pulp or pulp exposure has occurred, use a calcium hydroxide layer first, followed by an application of 3M™ ESPE™ Vitrebond™ Liner/Base or 3M™ ESPE™ Vitrebond™ Plus Liner/Base to minimize sensitivity.

Temporization

Place a provisional restoration on the tooth if protection is needed until the permanent restoration is cemented. (3M™ ESPE™ Protemp™ Temporization Materials are recommended). Non-eugenol cement must be used for cementation of the temporary restoration.

Milling and Block Sizes

Selection of the proper size of mill block for the restoration to be milled is based on completion of all design steps required for the restoration. You will be prompted by the mill to insert a block corresponding to the size of the restoration. The fabrication steps are described in the instructions for use and user manuals of the different CAD/CAM systems. The manufacturer's instructions must be followed.

Lava Ultimate CAD/CAM block is supplied to the user in a highly cured state. This material should not be fired under any circumstances during finishing or build up/Add on.

Extraoral Polishing Procedure

1. Clean restoration in an ultrasonic cleaner or steam cleaner; gently blow dry with an air syringe.
2. Trial fit the final restoration to the preparation. If desired, gently adjust contacts, occlusion and accentuate grooves using a fine needle diamond.
3. Grind off sprue with coarse rubber wheel or medium-to-fine bur.
4. Finish sprue area with medium rubber tool.
5. Pre-polish with fine rubber tool.
6. Using a soft bristle brush, spin brush in polishing agent to incorporate paste into brush.
7. Apply with low speed hand piece, working slowing into surface. The luster quickly appears as the restoration is polished.
8. Buff with a muslin rag wheel.

Characterization

Pit and Fissure Staining

To fully maintain the excellent polish retention and stain resistance of Lava Ultimate resin nano ceramic material, only pit and fissure staining is recommended. Applying light-cure glazes or cervical painting is not recommended.

1. Use a bur or sandblast to roughen the restoration surface. If additional grooves are desired, carve with a fine bur. Maintain minimum wall thickness as described in the sections above (e.g., **Inlay and Onlay, Veneer**).
2. Apply Scotchbond™ Universal Adhesive to the surface of the restoration and scrub it in for 20 seconds. Alternatively use a Silane followed by a bonding agent as per manufacturer's Instructions for Use.
3. Air thin with oil-free, moisture-free air until the solvent is evaporated and the adhesive no longer moves over the surface.
4. Light cure. Follow the stain manufacturer's Instructions for Use.
5. Apply Sinfony™ Magic Stains (or other methacrylate-based, light-cured stains).
6. Light cure. Follow the stain manufacturer's Instructions for Use.
7. Finish with rubber instruments and polishing paste as described in the **Extraoral Polishing Section** above.

Bonding

Lava™ Ultimate Restorations must be bonded with an adhesive resin cement. 3M ESPE recommends RelyX™ Ultimate Adhesive Resin Cement with Scotchbond™ Universal Adhesive, a primer and adhesive in one bottle. RelyX Ultimate cement and Scotchbond Universal adhesive form a highly versatile bonding system that works for many materials and indications.

Pre-Treatment of Lava Ultimate Restoration

Note: Complete all try-in, adjustment, finishing and polishing steps before starting the bonding pre-treatment.

1. Clean restoration in an ultrasonic cleaner or steam cleaner. Gently blow dry with air.
2. Sandblast with aluminum oxide grain size $\leq 50 \mu\text{m}$ (e.g. Cojet™ Sand or Rocatec™ Soft) at two bars (30 psi) until entire bonding surface appears matte. Use suction to prevent dusting. **Do not etch with HF or phosphoric acid.**
3. Remove sand with alcohol and dry with oil-free, moisture-free air. Do not use other chemical agents.
4. Apply Scotchbond™ Universal Adhesive to the bonding surface of the restoration and **scrub it in for 20 seconds.**
5. Air thin with oil-free, moisture-free air until the solvent is evaporated and the adhesive no longer moves over the surface.

Priming for adhesive resin cements other than RelyX™ Ultimate Adhesive Resin Cement:

6. Apply the primer, recommended by your cement. If no primer is recommended, apply Silane (e.g. RelyX™ Ceramic Primer) to the bonding surface of the restoration as per silane manufacturer's instructions.

Pre-Treatment of Tooth

Note: Prepare tooth according to the instructions for use for maximum retention. Ensure complete hemostasis and optimum gingival retraction for a dry bonding environment. Do not use any chemical agents to disinfect, clean or seal the dentin.

1. To remove debris, thoroughly clean all bonding surfaces with a slurry of pumice and water, rinse and dry.
2. Apply rubber dam to isolate the tooth.
3. Selectively etch enamel for 15 seconds **or** etch enamel and dentin for 15 seconds.
4. Rinse with water.
5. Lightly air dry or blot dry leaving a slightly moist surface. Do not over dry.
6. Apply Scotchbond™ Universal Adhesive and **scrub it in for 20 seconds.**
7. If you have pooled adhesive, use a dry microbrush to remove it.
8. Blow a gentle stream of air over the liquid for about 5 seconds until it no longer moves and the solvent has evaporated completely.
9. For maximum adhesion light cure the adhesive for 10 seconds.

Seating

Before using RelyX™ Ultimate Adhesive Resin Cement, please refer to the Instructions for Use provided with the product package.

Note: Use a high power light. Make sure the light guide is **clean** and light is delivering **full intensity**. Proper curing technique is crucial for bonding success: for each curing cycle hold light guide steady at minimum distance to the restoration surface.

1. Apply a uniform layer of RelyX™ Ultimate Adhesive Resin Cement to the tooth or the restoration to ensure a void-free interface.
 2. Completely seat the restoration using a suitable instrument.
 3. While holding the restoration firmly in place, wipe off excess using sponge pellets and floss. Cover margins with glycerin gel.
- OR**
4. Wait 90 seconds or tack light cure for 1 second for cement to reach gel state. While holding restoration firmly in place, remove excess cement with a sharp instrument.
 5. Light cure 20 seconds per surface. Total cure time should be at least 60 seconds depending on number of surfaces.
 6. For dark shades or thick restorations, allow 6 minutes of total self-cure time from the start of mixing.
 7. Finish margins after cure is fully established.
 8. If desired polish intraorally as described in intraoral polishing section.

Intraoral Adjustment and Repolishing

1. Make any necessary adjustments with a diamond bur.
 2. Finish with Sof-Lex™ Spiral Finishing Wheel.
 3. Polish with Sof-Lex™ Spiral Polishing Wheel.
- OR**
4. Finish with diamond impregnated points/cups.
 5. Apply intraoral polishing paste. Work paste slowly into surface using soft black, latch angle, intraoral prophylaxis brush.

Serviceability

It's easy to add on with Light-Cured Restoratives.

Lava Ultimate CAD/CAM block is supplied to the user in a highly cured state. This material should not be fired under any circumstances during finishing or build up/ Add-on.

Lava Ultimate Restorative is a Resin Nano Ceramic that enables reliable characterization and re-sealing.

1. Roughen the Lava Ultimate restoration site.
2. Use Scotchbond™ Universal Adhesive or apply silane and adhesive according to the Instructions for Use.
3. Light cure bonding agent according to the Instructions for Use.
4. Apply Filtek™ Supreme Ultra Universal Restorative (or other methacrylate-based, light-cured restorative).
5. Light cure restorative material according to the Instructions for Use.
6. Polish the added restorative with Sof-Lex™ Spiral Finishing and Polishing Wheels.

Storage and Use

This product is designed to be stored and used at room temperature. Do not store Lava Ultimate Restorative in intense light or sunlight. Product should be used by the date indicated on the outer package.

Disinfection

Disinfect this product using an intermediate level disinfection process (liquid contact) as recommended by the Centers for Disease Control and endorsed by the American Dental Association. ***Guidelines for Infection Control in Dental Health-Care Settings - 2003 (Vol.52; No. RR-17), Centers for Disease Control and Prevention.***

Disposal

See the Material Safety Data Sheet (available at www.3MESPE.com or through your local subsidiary) for disposal information.

Customer Information

No person is authorized to provide any information which deviates from the information provided in this instruction sheet.

Caution: U.S. Federal Law restricts the device to sale or use on the order of a dental professional.

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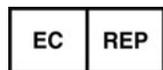


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