



Guide for Polishing LATICRETE Self-Leveling Overlayment TDS 238

LATICRETE® Self-leveling Overlayments (SLO) and other toppings: There are several methods and techniques that can be used to achieve the same or similar results. Each experienced contractor will have their own process and sequence with their own equipment and tooling. Additionally, diamond tooling and equipment manufacturers will have their own recommended tooling and sequence for polishing. Some manufacturers have designed tooling specifically for grinding and polishing SLO.

LATICRETE has teamed up with several tooling and equipment manufacturers to refine our polishing process. Below are links to polishing processes which we have had very good results testing and experience with. Consult with LATICRETE as well as the tooling and equipment manufacturer prior to grinding and polishing SLO.

Click a link below and refer to these documents when using their specific diamond tooling and equipment.

[HUSQVARNA](#)

[LAVINA by SUPERABRASIVE](#)

[STI - Substrate Technology, Inc.](#)

A large mockup (20' x 20' {6.1x6.1m}) should be installed to determine the process, ensure the intended appearance and performance can be achieved, and set the client expectations. Smaller sized mock-ups may not allow enough space for large equipment to effectively produce realistic repeatable results.

Installing LATICRETE® Self-Leveling Overlayments

- Refer to [TDS230](#) for more substrate preparation and primer information.
- Mix and install [VAPOR BAN™ ER](#) with sand broadcast, [VAPOR BAN E](#) with sand broadcast, OR [General Primer](#) with sand broadcast per product data sheet instructions.
 - **NOTE:** General Primer is an epoxy primer but is **NOT** a moisture mitigation product.
- Mix and install LATICRETE SLO per product data sheet. Use the lower to mid-range water ratio listed on the product data sheet. This will help minimize the surface cream thickness and the depth of grinding to expose the aggregate later.
 - Use a [LATICRETE Gauge rake](#) to set depth at a minimum of ½" (12 mm).
 - For uneven concrete floors, a thicker SLO installation may be required so that high spots in the concrete are not exposed during the grinding process.
 - Keep a wet edge on the floor when mixing and pouring SLO to help reduce visible pour lines in the polished floor.
 - Use a smoothing trowel and/or a spike roller perpendicular to the direction of the gauge rake to reduce ridge lines, trowel marks, break surface tension, and help remove air bubbles. It is also important to note that SLOs will develop a cream on the surface. When cured the cream becomes a thin skin. As with most cement products the cream/skin will become thicker each time the surface is touched with a finishing tool such as gage rakes, trowel, etc. Thicker skin will require deeper and more aggressive grinding to expose aggregate.
 - **Note:** There are many opinions regarding the use of Smoothing Trowel vs. Spike Roller. Best practice is to use tools and methods that will allow you to touch the surface as few times as possible during install to help minimize cream/skin thickness.
 - **Adding aggregate** – Note that aggregate must be decided upon during mockup. Typically, terrazzo aggregates size #2 - #4 can be used. Test these during mockup to determine what works best for your project.

- Seed / Broadcast aggregate shortly after smoothing trowel is used but before skin begins to form on the self-leveling.
- Choose aggregate types and sizes that will not sink too far below the surface of your self-leveling. If aggregate sinks below the intended grind/cut depth it will not be exposed and visible after grinding.
- When aggregate is broadcast into the surface or mixed integrally allow a minimum of 24-hour drying time prior to first grind. The extra cure time will allow more strength to develop and help prevent aggregate from rolling out during the grinding stage.
- Typically, the first grind can begin after approximately 12 hours after installation depending on pour depth and drying conditions. Grinding can begin sooner when drying / curing conditions allow.

Note: A more aggressive method and heavier equipment may be needed to cut the surface as strength develops. Also note that grinding too soon could cause damage to the surface.

Integrally color if specified: [NXT® Level DL](#) and [NXT Level SP](#) can be integrally colored using [NXT ANYCOLOR™](#) universal liquid pigments.

- First add NXT® ANYCOLOR™ universal liquid pigment to the pre-measured clean potable mixing water in your clean mixing container, prior to adding any NXT Level DL or NXT Level SP powder.
 - (Mixing ratio is 1 unit of liquid pigment per each 55 lb. (24.9 kg) BAG of NXT Level DL)
 - (Mixing ratio is 1 unit of liquid pigment per each 50 lb. (22.7 kg) BAG of NXT Level SP)
- Mix with a drill mixer until pigment is evenly dispersed in the mixing water
- Add NXT Level DL or NXT Level SP powder to the pigmented mixing water as directed above and mix for 2 to 3 minutes with a heavy-duty drill (650 rpm) to obtain a lump free mix.
- Verify actual appearance and compatibility with a field mock-up prior to installing

Cut Joints

- Prior to cutting joints, allow SLO to cure for a minimum of 3 hours, and surface is walkable. Joints should be installed prior to grinding.
- Trace previously marked substrate joints. Cut into the concrete substrate joint through the full depth of the SLO.

Fill Joints per [L&M™ JOINT TITE 750](#) installation instructions.

- Allow the self-leveling overlayment to dry for a minimum of 24 hours prior to filling joints.
- Vacuum\air blast to clean out new cut joints completely leaving no loose dust or debris. Do not use water.
- Protect surface adjacent to the joint from staining caused by product overflow with stain protector.
- Install L&M JOINT TITE 750 joint filler overfilling the joint slightly by approximately 1/16" (1.5 mm). Excessive overfill will waste product and may cause surface staining.
- After 45 minutes, trim excess joint filler using a new 8" (200mm) razor scrapper to create a flat, smooth joint.

Grinding Stage: 16 - 100 Grit Metal Bond - Removing the Skin.

- Dry grind only. Do not wet grind.
- The Grinding stage will typically remove 1/16" - 1/4" (1.5 - 6 mm) of the surface. To polish the surface without removing the skin, skip the Grinding and Honing stages and proceed to the Polishing section below.
- Prior to starting and stopping the machine, head pressure should be relieved to reduce the occurrence of deep start and stop scratches. These scratches can be difficult to remove later in the process.
- First attempt at cutting/grinding the surface will determine the diamond tool steps needed. Typically, a 40-60grit metal bond diamond will cut the surface within 24 hours of install. As the surface gains strength over time and/or if aggregate needs to be exposed, a more aggressive grit and heavier equipment may be needed to cut through the surface skin and expose the aggregate.
- Once the first grind diamond tooling has been determined, spend a large amount of time on grinding and cutting through the skin. Multiple passes should be made in a north to south then east to west

fashion. Multiple passes will be needed to grind deep enough so that the surface skin, gauge rake/smooth marks, and low spots are removed and aggregates are exposed. Continue to grind until consistent aggregate exposure has been achieved.

- Sweep/Vacuum clean and inspect prior to each diamond grit change.
- Continue to grind using higher grit metal bond diamonds up to 120 grit to remove scratches created by the previous step and to smooth the surface. Multiple passes at each grit may be needed to ensure all the previous scratches are removed.

Grout (if needed): Use [L&M EVERBOND™](#)

- Apply L&M EVERBOND with a sprayer and fine bristled broom spraying approximately 10-15 feet in front of the grinder.
- Scrub the L&M EVERBOND into the floor with the broom.
- Then immediately run the grinder with 120 grit over the EVERBOND and allow to dry to the touch.

Note: There are several other types of products and methods for grouting available including acrylic, resinous, cementitious, etc. Contact and follow instructions from the grout manufacturer that you are using.

Transition: 100 - 200 grit Ceramic, Hybrid, or Transitional

- 100 - 200 grit Ceramic, Hybrid or transitional tools are often used to remove metal diamond scratch patterns prior to switching to resin bonds.
- This will typically require a single pass. However, multiple passes may be needed. Make multiple passes in a north to south then east to west fashion.
- When switching from hybrid or transitional to resin bond diamond tools, drop back one grit from the last metal used. For example, when transitioning from 150 Hybrid, start with 100 grit Resin.

Dye and/or Densify:

- Use dye prior to densifier when dye is specified. **Note:** There are several dye products available in the market. Contact and follow instructions from the dye manufacturer that you are using.
- If dye was used allow it to dry completely and per the manufacturer's instructions prior to densifying.
- Use [L&M LION HARD®](#) lithium silicate densifier. Apply to rejection per data sheet instructions at a rate of 400- 600 ft² /gallon (9.8-14.7 m² /L) using a microfiber pad keeping the surface wet for 15-20 minutes. Do not allow to puddle. Allow to dry completely.
- Continue honing using 200- 400 grit Resin.
- Sweep/Vacuum clean and inspect to ensure that all previous scratches have been removed

Honing Stage: 100-400 Grit Resin - Some tooling manufacturers design products that are specifically for honing and polishing self-leveling products. Consult with LATICRETE or with your tooling manufacturer.

- Sweep/Vacuum clean and inspect to ensure that all previous scratches have been removed prior to each diamond grit change.
- Run your machine at a slower speed over self-leveling topping then you would over normal concrete slabs. Faster speed settings with resin bonds over self-leveling toppings could generate enough heat to burn the polymers in the topping and cause some discoloration. Also, consider removing weight from machine. At this stage additional weight could generate excess heat.
- Begin honing using 100 grit Resin. If scratches remain after the first resin pass, drop back to hybrid or transitions to remove deep scratches. Then work your way back up.
- Continue to hone using 200 grit Resin.
- Sweep/Vacuum clean and inspect to ensure that all previous scratches have been removed.

Densify: For improved abrasion and stain resistance a second application of densifier is recommended.

- Use [L&M LION HARD](#) lithium silicate densifier. Apply to rejection per data sheet instructions at a rate of 600-800 ft²/gallon using a microfiber pad keeping the surface wet for 15-20 minutes. Do not allow to puddle. Allow to dry completely.

- Continue honing using 400 grit Resin.
- Sweep/Vacuum clean and inspect to ensure that all previous scratches have been removed

Polish: 800-3000 Grit Resin: Polish up to desired gloss.

- Polish using 800 grit Resin.
- Sweep/Vacuum clean.
- Continue to polish using 1500 grit Resin.
- Sweep/vacuum floor.
- In many cases this will be the highest grit used as the specified gloss has been achieved.
- Continue to polish using 3000 grit Resin. Sweep/vacuum floor.

Apply Guard: Use [L&M™ PERMAGUARD SPS](#)

- Once the specified gloss has been achieved, ensure the surface is clean and free of dust and debris before applying PERMAGUARD SPS.
- On chemically hardened, polished topping allow a minimum of 48 hours between application of hardener and the application of PERMAGUARD SPS.
- Pre-moisten micro-fiber pad with PERMAGUARD SPS.
- Working from joint to joint, apply evenly and thinly with the pad. Do not puddle.
- Burnish after final coat has dried a minimum of 4 hours, using a high speed, 2000 RPM burnisher with soft white pad or soft natural hogs hair.
- Burnishing is necessary for enhanced gloss and improved durability and chemical resistance.
- If multiple coats are to be installed, allow the previous coat to dry, normally 15 to 30 minutes, at 70°F (21°C) prior to installing the next coat.

Apply Topical Sealer (if desired): Use [L&M™ LUMISEAL FX™](#)

LUMISEAL FX™ can be applied as a topical sealer on polished topping if added protection or shine is desired.

- Make sure the surface is dry prior to applying.
- Dilute LUMISEAL FX™ with 25-50% water before applying to polished concrete.
- Apply one or two uniform coats as desired using a microfiber applicator, without puddling.
- Allow the first coat to dry 2-3 hours before applying a second coat.
- LUMISEAL FX™ will typically be dry to the touch in 1 hour, and ready for foot traffic in 12 hours, at 70°F (21°C).

Note: Any L&M FGS PERMASHINE system materials or those by others can be used interchangeably when polishing LATICRETE Self Leveling Overlayments. Allowing polishing professionals, the freedom to use their desired materials to achieve their best results. Contact and follow instructions from the manufacturer of the materials being used.

Maintenance: Use [L&M™ FGS CONCRETE CONDITIONER™](#)

The recommended maintenance program consists of frequent and thorough cleanings utilizing FGS CONCRETE CONDITIONER. Frequency will vary, and may be necessary daily, weekly or less frequently depending on floor usage and age. For additional information refer to the Maintenance Guide for LATICRETE Polished Self-Leveling Overlayments [TDS 184](#).

Technical Data Sheets are subject to change without notice. For latest revision, check our website at <https://laticrete.com>
TDS 238 R EF 08 April 2026

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