

Reduced Surface Preparation Guide

Concrete Restoration Systems



REFERENCE GUIDE RGC0509

SUITABLE SUBSTRATES

When a reduced-surface-preparation self-leveling underlayment (SLU) is used over a properly primed sound and stable substrate, surface profiling is not required.

- A reduced-surface-preparation SLU can be used over properly prepared, sound, dimensionally stable, fully cured concrete that is at least 28 days old and with a moisture vapor emission rate (MVER) not exceeding 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m²) per 24 hours, using a calcium chloride test performed per the strict instructions and site conditions referenced in ASTM F1869.
- A reduced-surface-preparation SLU can be installed over well-bonded coatings, adhesives and glues compatible with designated MAPEI primers, including such materials as cutback, carpet glue and vinyl composition tile (VCT). However, do not use when finished surfaces will be subject to dynamic loading (such as pallet jacks), forklifts or rubber-wheeled traffic. Surfaces subject to dynamic loading require a surface profile.
- When using a reduced-surface-preparation SLU to install over substrates other than clean sound concrete, the installer warrants that the materials being bonded to will be solid, stable and well-bonded, capable of passing 75 psi (0,52 MPa) direct tensile pull tests. All substrate materials must be compatible with MAPEI primers. Contaminated surfaces or weak substrates (not conforming to at least 75 psi [0,52 MPa] direct tensile bond) must be removed by shotblasting, scarification or other industry-approved means before a reduced-surface-preparation SLU is applied.
- A reduced-surface-preparation SLU can be used over ceramic tile, VCT, cement terrazzo and small amounts of old cutback adhesive residue. Surfaces must be properly prepared and confirmed to be well-bonded; free of dirt, dust, wax and floor finishes; and primed.
- Engineer-approved plywood subfloors may be resurfaced with a reduced-surface-preparation SLU. Subfloors must be properly prepared, bonded, and free from dirt and dust (see Item 11 under the "Surface Preparation" section for details).
- A reduced-surface-preparation SLU is compatible with a wide variety of floor-covering adhesives, epoxy adhesives, polyurethane adhesives, and tile and stone installation mortars. Consult the floor-covering or coating manufacturer's recommendations regarding the maximum allowable MVER and retained moisture content in the substrate. For substrates with an MVER exceeding 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m²) per 24 hours, using a calcium chloride test (reference ASTM F1869), install a suitable MAPEI moisture-reduction barrier.

Note: The maximum allowable MVER is always determined by the complete system installed, including primers, underlayment/toppings, floor coverings and sealers. The wide variety of substrate conditions, floor coverings and adhesives available requires careful analysis of the intended final floor use, as well as compliance with each manufacturer's recommendations for MVER, retained moisture content and adhesive selections.

- Do not install a reduced-surface-preparation SLU over particleboard, chipboard, hardboard (Masonite), Luau panels, metal, asbestos, gypsum-based patching materials or any other non-dimensionally stable materials.
- A reduced-surface-preparation SLU can be installed over steel decking when properly primed with a MAPEI epoxy primer or bonding agent using the sand broadcast method. Refer to the "Primers for Self-Leveling Materials" product selection guide.

To ensure installation success, test a small area for compatibility, bond strength and performance. Contact MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

TECHNICAL NOTES

- Before application of a reduced-surface-preparation SLU, always properly prepare the surface and prime with the appropriate MAPEI's primer – determined by the substrate and specific jobsite dynamics. For available primers, see MAPEI's product selection guide titled "Primers for Self-Leveling Materials" (refer to respective TDSs for details).
- A reduced-surface-preparation SLU should be used for interior applications only. For exterior applications, choose a MAPEI high-performance topping suited to such conditions (contact MAPEI's Technical Services Department for details).
- A reduced-surface-preparation SLU should only be used on substrate and ambient temperature between 50°F and 95°F (10°C and 35°C). In cooler conditions, use indirect auxiliary heaters to maintain ambient and substrate temperatures within the required range. For temperatures above 85°F (29°C), follow ACI hot-weather application guidelines to ensure a successful installation.
- Provide for expansion and control joints where specified, including the perimeter of the room, columns, supports and equipment pedestals. Do not bridge expansion and control joints. Ensure that such joints are honored completely through a reduced-surface-preparation SLU and the primer. Where control or expansion joints do not exist in the substrate, provide for them in the system per industry standards.
- Do not mix a reduced-surface-preparation SLU with any other self-leveling underlayment.
- Radiant-heating applications require a concrete surface profile (CSP) of #3 or greater as categorized by the International Concrete Repair Institute (ICRI), as well as an appropriate MAPEI primer. Because not all radiant-heat systems are alike, consult the radiant-heating supplier along with all industry standards to ensure a successful installation.

SURFACE PREPARATION

1. All substrates must be structurally sound, stable and solid. Deflection should not exceed L/360 (or L/720 for stone applications), taking into consideration both live and dead loads. Reference the ASTM C627 standard dealing with deflection.
2. Thoroughly clean and remove from the surface of any substance that could interfere with the bond of the installation material, including dirt, tar, wax, oil, grease, latex compounds, sealers, curing compounds, form release agents, laitance, loose toppings, and any material that could prevent the proper bonding of a reduced-surface-preparation SLU to the substrate. Well-bonded adhesive residue that has been well-scraped can be covered with a reduced-surface-preparation SLU, in conjunction with the appropriate primer.
3. Concrete surfaces that are sound, stable and uncontaminated may be bonded to without mechanical profile, shotblasting, sandblasting, water-jetting, scarifying, diamond-grinding or other methods. Note: A reduced-surface-preparation SLU may not be installed over low-psi (low-MPa) concretes, or concrete surfaces that are weak or degraded near the surface. In most cases,

weak upper layers of concrete must be removed by mechanical method to produce sound and solid conditions, and then the resulting substrate must be properly primed.

4. After cleaning and mechanically profiling the substrate, test for MVER (calcium chloride test per the test method and site conditions referenced in ASTM F1869). A reduced-surface-preparation SLU is an underlayment for use with other finished floor systems (such as resilient, VCT and ceramic). Always follow manufacturers' recommendations regarding the maximum allowable moisture content and MVER before installation.
5. Concrete substrate and ambient room temperatures must be between 50°F and 95°F (10°C and 35°C) before application. Temperatures must be maintained within this range for at least 72 hours after the installation of a reduced-surface-preparation SLU.
6. Fill in deep areas, holes or cracks with appropriate concrete restoration materials (such as MAPEI's *Mapecem® Quickpatch*), especially when installing on a second-story floor or above where fluid material could leak to a floor below. Contact MAPEI's Technical Services Department for details.
7. Always prime the prepared surface with a MAPEI primer before applying a reduced-surface-preparation SLU.
8. Do not apply primer over standing water.
9. Apply a reduced-surface-preparation SLU only when the selected primer is in its recommended state as defined in that primer's TDS. Some mechanically prepared substrates may be more porous than others; this may require a specific application of the primer.
10. A reduced-surface-preparation SLU can be used over engineer-approved plywood or oriented strand board (OSB) subfloors in accordance with the most recent edition of the Tile Council of North America's F185 specification. Subfloors must be properly prepared, bonded, and free from dirt and dust. When applying MAPEI underlayment to plywood flooring, installation requirements (finished flooring, load, use and/or deflection) may require the utilization of *Mapelath™* or diamond mesh (meeting the requirements of ASTM C847) on top of the primed surface before application of the underlayment. In all cases, one can anticipate better performance when utilizing lath, particularly over OSB. Refer to the current *Mapelath* TDS for installation instructions. Differential or excessive movement within plywood substrate may lead to hairline cracks at plywood joints.
11. Moisture vapor transmission exceeding 5 lbs. per 1,000 sq. ft. (2,27 kg per 92,9 m²) per 24 hours must first be treated by installing a suitable moisture-reduction barrier. Apply a small test area to ensure compatibility with the moisture-reduction barrier before general installation of a reduced-surface-preparation SLU.
12. To install a reduced-surface-preparation SLU over properly prepared ceramic tile, VCT, cement or epoxy terrazzo, or small amounts of old cutback adhesive residue, the surface must be properly prepared, bonded, free of dirt and dust, and primed.
13. To install a reduced-surface-preparation SLU over properly prepared steel decking or metal, deflection should not exceed L/360 requirements when using ceramic tile and L/720 deflection requirements when using stone, taking into consideration both live and dead loads (per ASTM C627).

CURING

1. MAPEI's reduced-surface-preparation SLUs are self-curing; do not use a damp-curing method, or curing and sealing compounds.
2. Protect a reduced-surface-preparation SLU from excessive heat or draft conditions during curing. Turn off all forced ventilation and radiant-heating systems. (Some radiant-heating systems should not be turned on after installation for 7 to 14 days; check with heat manufacturer.) Protect for up to 24 hours after completion.
3. Avoid walking on the installed surface for at least 24 hours after installation, depending on temperature and humidity conditions.
4. Protect installation from traffic, dirt and dust from other trades until a reduced-surface-preparation SLU has completely cured and the final flooring has been installed.

For additional details, please refer to a product's TDS. For further information about product application or installation, please contact MAPEI's Technical Services Department at 1-800-992-6273 (U.S. and Puerto Rico) or 1-800-361-9309 (Canada).



MAPEI Headquarters of the Americas
1144 East Newport Center Drive
Deerfield Beach, Florida 33442
Phone: 1-888-US-MAPEI
(1-888-876-2734)

Technical Services
1-800-992-6273 (U.S. and Puerto Rico)
1-800-361-9309 (Canada)

Customer Service
1-800-42-MAPEI (1-800-426-2734)

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