



Section 03 54 00

Cementitious underlayment

Part 1 - General

1.01 Summary

This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete Work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their Work and coordinate overlapping Work.

1.02 System description

This specification describes the patching of interior horizontal surfaces with Portland Cement Mortar/Concrete.

1.03 References

The following standards are applicable to this section:

- ASTM C-109 - Compressive Strength
- ASTM C-1583 – Direct Pull-Off Bond Strength
- ASTM C-293 - Flexural Strength

1.04 Quality Assurance

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Acceptable to the manufacturer: Installers will be experienced in performing work of this section and specialized in work similar to that required for this project; INSTALL certified or equal.
- D. Store and apply materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Safety Data Sheets (SDS) for complete handling recommendations.

1.05 Delivery, Storage, and Handling

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.
- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.



1.06 Job Conditions

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.07 Submittals

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets (PDS), and appropriate Safety Data Sheets (SDS).
- B. Submit copy of Certificate of Approved Contractor status by manufacturer.
- C. Material may be placed in interior only but must be covered prior to opening up to traffic. Material is not a direct wearing surface.

1.08 Warranty

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

Sika® Level Skim Coat, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

- A. The cement-based patching/repfilling material be Sika® Level Skim Coat
- B. Primer for standard absorbent concrete shall be Sika® Level-01 Primer Plus if needed
- C. Primer for standard non-absorbent concrete shall be Sika® Level-02 EZ Primer.

2.03 Performance Criteria

Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Yield	35 ft ² at 1/8" per bag
2. Color	Concrete gray
3. Mixing Ratio	2 qts (1.9 L) per bag
4. Application Thickness	Min Feather edge; Max 1/2" (13 mm)
5. Application Temp	Min 50°F (10°C) ; Max 86°F (30°C)
6. Working Time	10-20 min.
7. Compressive Strength (ASTM C-109)	28 days – 3,700 psi (25 MPa)
8. Flexural Strength (ASTM C-293)	28 days – 1,300 psi (9 MPa)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45 - 55% relative humidity.



Part 3 – Execution

3.01 Surface Preparation

A. Substrate

All difficult-to-bond to substrates, including wood subfloors, ceramic, quarry and vinyl tiles and cut back adhesive must be primed using Sika® Level-02 EZ Primer in accordance with the Product Data Sheet.

The substrate must be dry, clean and stable before priming and applying the underlayment materials. Remove all existing treatments such as coatings, sealers, wax, latex compounds, impregnations and curing agents, together with all contaminants i.e. dirt, dust, laitance, grease, oils, and foreign matter, which will interfere with the penetration of the primer and the adhesion of Sika® Level SkimCoat.

B. Concrete & Dense Substrates

Prepare concrete, cement and dense substrates,, including ceramic, quarry and vinyl tiles by mechanical means, such as shotblasting, sandblasting, water-jetting, scarifying, or other appropriate methods, to achieve an open-textured, fine-gripping surface (ICRI - CSP 3 minimum). Weak concrete should be removed. All cracks and holes should be similarly filled to prevent seepage of the primer through to lower areas.

C. Wooden/Plywood Subfloors

Where installing Sika® Level SkimCoat over wooden subfloors, ensure that the subfloor consists of at least two layers of exterior grade plywood, a minimum of 1 ¼ " (32 mm) in thickness and meets, as a minimum, the deflection parameters of L/360 (live and dead loads taken into consideration). The wood/plywood must then be suitably secured, bonded and prepared to a contaminant free and sound condition. Before the application of the leveler, stapled metal lath into the plywood. Sika® Level-02 EZ Primer must be used for plywood or any non-porous substrate. Refer to the manufacturer of the final floor covering with regard to the deflection requirements of the floor finish system.

3.02 Mixing and Application

- A. Pour 2 quarts of cool, potable water into a suitably sized and clean mixing container, using a calibrated measuring jug, or similar, to ensure strict control of the water content (do not over-water). Cool water 70oF (21oC) serves to maximize the working time; if available water is not at this temperature, then consideration should be given to cooling the water. Add Sika® Level SkimCoat to the water, while slowly mixing, adding the complete contents of the bag. Once all the powder has been added, continue mixing until a lump-free and uniform consistency is achieved. This should typically take no more than 5 minutes.
- B. If mixing in a barrel or similar container, employ the water to powder ratio as stated above and use a high-speed electric mixer (min. 650 rpm) and egg beater style mixing paddle to blend water and powder for a minimum of 3 minutes, until a uniform mix has been produced.
- C. Prior to placing the refilling material, ensure that all sources of premature drying or direct sunlight are blocked off to avoid accelerated curing and reduced physical properties. The stated ambient and substrate application temperatures are to be achieved before installation and should be maintained for a period of at least 3 days thereafter. Should colder conditions prevail, make allowances for the use of indirect and vented heaters to achieve and maintain the application temperatures required. Where temperatures exceed 86oF (30oC), refer to and follow ACI hot weather application and protection guidelines.



3.02 Cleaning

- A. The uncured portland cement mortar can be cleaned from tools with water. The cured polymer modified portland cement mortar can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

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