BUILDING TRUST

Section 03 54 00
Cementitious underlayment

Part 1 - General

1.01 Summary

This is the recommened specification for Sika® Level-325 SELF-LEVELING UNDERLAYMENT CONCRETE for use over specified interior and exterior substrates.

1.02 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 receivced product training by manufacturer's representative

C. Acceptable to the manufacturer: Installers will be experienced in performing work of this section and specialized in work similar tot hat required for this project; INSTALL certified or equal.

D. Install 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 Material Safety Data Sheets for complete handling recommendations.

1.03 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.

1.04 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 50°F (10°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.

C. Material may be placed interior and exterior but must be covered prior to opening up to traffic. Material is not a direct wearing surface.

1.05 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.

1.06 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-325, as manufactured by Sika® Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. The cement-based self-leveling underlayment shall be Sika® Level-325 SELF-LEVELING UNDERLAYMENT CONCRETE.

B. Primer for standard absorbent concrete shall be Sika® Level-01 Primer Plus.

C. Primer for standard non-absorbent concrete shall be Sika® Level-02 EZ Primer.

2.03 Performance Criteria

Properties of the cured polymer-modified portland cement coating:

1. Yield	Approximately 0.49 cu. ft. per 55 lb. bag
2. Color	Concrete gray
3. Density {wet mix} (ASTM C-185)	133 lbs/cu.ft
4. Mixing Ratio	9.5 pints of water per 55 lb. (24.9 kg) bag
5. Application Thickness	Min 1/8” (3 mm); Max 3” (76mm) with aggregates
6. Application Temp	Min 50°F (10°C) ; Max 86°F (30°C)
7. Working Time	25 to 30 mins at 1/8” (3 mm) thickness
8. Setting Times (ASTM C-191)	Initial Set – 70 - 80 min
	Final Set – 80 - 110 min
9. Compressive Strength (ASTM C-109) 28 days @ 73ºF (23ºC)	5,300 (37 MPa)
10. Flexural Strength 28 days (ASTM C-580)	1,500 psi (10 MPa)
11. Final Drying Time	Foot Traffic ~ 4 hours

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 concrete and cement substrates must be primed using Sika® Level-01 Primer Plus (dilution 1:3) and 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-325.

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 and surface defects such as blowholes and spalls fully exposed and repaired Sika® Level SkimCoat or Sika® Quick mortar prior to priming and levelling. All cracks and holes should be similarly filled to prevent seepage of the primer through to lower areas. Consult Sika® Technical Sales for recommendations.

C. Wooden/Plywood Subfloors
Where installing Sika® Level-325 underlayment 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 9.5 pints 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 70°F (21°C) 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-325 to the water, while slowly mixing, adding the complete contents of the 55 lb. 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. When pump-mixing, ensure that the mechanical mixers and pumps are in sound working order. Pre-clean and test the equipment, checking that the mixing and pumping elements are fully functional and that meshes are in place to prevent foreign matter from entering the hopper or being dispensed onto the floor.

D. Prior to placing the underlayment, 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 86°F (30°C), refer to and follow ACI hot weather application and protection guidelines.

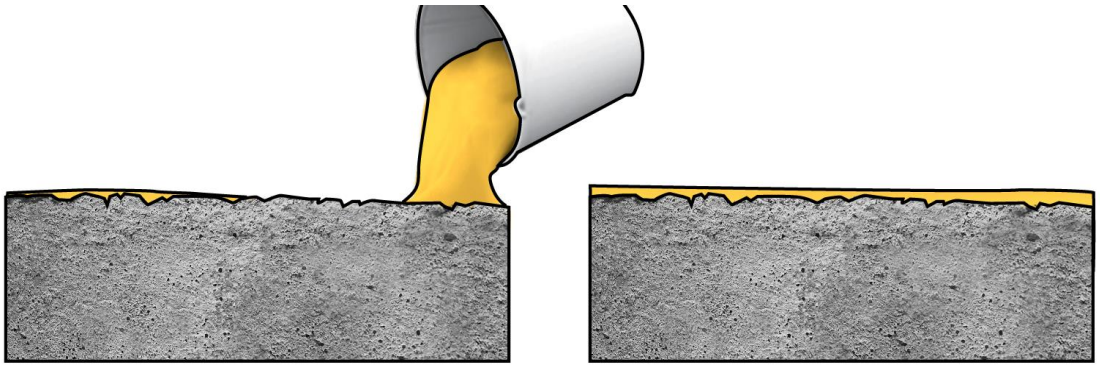
E. The material can be extended by adding up to 30% of 20/30 grade sand during mixing to achieve up to 3” in one lift. A reduction in flow, approximately 15%, can be expected. The final layer should be neat to allow for a smooth finished floor. When adding aggregate, expect coverage to increase by approximately 16 cu.ft. per 25 lbs of aggregate.

F. Pre-washed 3/8” pea-gravel can be pre-placed into the area being leveled allowing for up to 3” in one lift. Applicator must be aware that the aggregate can cause voids in the underlayment if not filled correctly. When adding aggregate, expect coverage to increase by approximately 16 cu.ft. per 25 lbs of aggregate. Multiple lifts can also be applied to achieve greater depths, making sure to prime with Sika® Level-01 Primer Plus(dilution 1:1) in between lifts. If necessary, further detailed recommendations can be obtained by calling Sika® Corporation’s Technical Service Department. Over large areas, application by conventional piston, rotor-stator or underlayment type pumps is more appropriate. Thoroughly spike roll in two directions (90°) to remove installation marks and any entrapped air, but avoid overworking.

G. Before laying the material, organize labor to operate most effectively, ensuring that installers can maintain a continuous flow of material and avoid creating cold joints. The dimensions of the pour, in terms of width, should also be set accordingly.

3.02 Cleaning

Use personal protective equipment (chemical resistant gloves / goggles / clothing). Without direct contact, sweep up spilled or excess product and place in suitable sealed container. Dispose of excess product and container in accordance with applicable local, state, and federal regulations. Hardened material may have to be manually or mechanically removed.



Concrete Restoration Systems by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071