

Product Data Sheet

Edition 10.20.2009

Identification no.

Sika Level-315



Since 1915

Tucker

W. L. TUCKER SUPPLY COMPANY, INC.

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Sika® Level-315

Very rapid hardening and durable, cementitious, self-leveling underlayment for use at 1/25 to 1 inch (1 to 25 mm) thickness

Description	Sika Level-315 is a one-component, fast track and versatile cementitious underlayment for interior concrete, cementitious, wood and tiled substrates. It can be applied manually or by pump to produce a self-smoothing, very rapid-setting, flat and economical substrate prior to the application of a final floor finish. Typical application thickness is 1/25 to 1 inch (1 to 25 mm).								
Where to Use	<ul style="list-style-type: none"> Interior floor leveling and smoothing applications where floor coverings are to follow, such as: <ul style="list-style-type: none"> Institutional - schools, colleges, hospitals, clinics, libraries, galleries, museums Commercial - offices, corridors, hallways, canteens, cafeterias, stores, hotels, restaurants Residential - domestic properties, condominiums and high rise construction 								
Advantages	<ul style="list-style-type: none"> Easy and quick to install Zero VOC content and low odor Highly fluid and self-leveling Manual or pumpable application Feather-edging acceptable in pedestrian areas Levels new and renovates old floors Very rapid drying, can be walked on after 4 hours at 73°F (23°C) Ceramic tiles and natural stone can be installed after 6 hours Floor coverings (carpet, vinyl, PVC, rubber, engineered wood flooring) can be installed after 24 hours Excellent underlay for tiles, sheet products and wood floor bonding systems 								
Coverage	<p>Approximately 0.46 cu. ft. per 50 lb. bag</p> <p>Approximate coverage at typical thicknesses per 50 lb. bag</p> <table> <tr> <td>1/25 in (1 mm)</td><td>140 ft²</td></tr> <tr> <td>3/16 in (5 mm)</td><td>27.5 ft²</td></tr> <tr> <td>5/8 in (16 mm)</td><td>8.7 ft²</td></tr> <tr> <td>1 in (25 mm)</td><td>5.6 ft²</td></tr> </table> <p>(Coverage figures do not include allowance for surface profile and porosity or material waste.)</p>	1/25 in (1 mm)	140 ft ²	3/16 in (5 mm)	27.5 ft ²	5/8 in (16 mm)	8.7 ft ²	1 in (25 mm)	5.6 ft ²
1/25 in (1 mm)	140 ft ²								
3/16 in (5 mm)	27.5 ft ²								
5/8 in (16 mm)	8.7 ft ²								
1 in (25 mm)	5.6 ft ²								
Cure Mechanism	Polymer modified rapid hardening cement.								
Packaging	50 lb. bag								

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

Shelf Life	1 year from date of production if stored properly in original, unopened and undamaged sealed packaging.		
Storage Conditions	Store dry at 40°-86°F (4°-30°C). Condition material to 65°-75°F (18°-24°C) before using. Protect from moisture. If damp, discard material.		
Color	Concrete gray		
Yield	Approximately 0.47 cu. ft. (13.25 L) per 22.7 kg (50 lb) bag. Approximate coverage at typical thicknesses per 50 lb (22.7 kg) bag. Coverage figures do not include allowance for surface profile and porosity or material waste.		
Mixing Ratio	9-10 pints of water per 50 lb (22.7 kg) bag		
Application Temp. (substrate & ambient)	Minimum 10°C (50°F); Maximum 35°C (95°F)		
Application Thickness	Minimum 1.0 mm (1/25 in); Maximum 25 mm (1 in)		
Density {wet mix} (ASTM C-185)	130 lb/ft ³		
Working Time	25 to 30 minutes at 5 mm (3/16 in) thickness		
Flowability (ASTM C-230)	25 to 35 min. approx.		
Setting Times (ASTM C 266)	Initial Set – 40 -60 min.; Final Set – 60-80 min.		
Flexural Strength 28 days (ASTM C-580)	1500 psi		
Compressive Strength (ASTM C-109), psi			
	50°F* (10°C)	73°F* (23°C)	86°F* (30°C)
16 hour		2,000	
24 hours		2,700	
3 day		3,500	
7 day		4,500	
14 day		5,500	
28 day		6,000	

Pull-Out Strength 3/16 in (5 mm) thickness with Sika Level-01 Primer (ACI 503)

>2.0MPa (290 psi)



How to Use Surface Preparation

All concrete and cement substrates must be primed using Sika Level-01 Primer 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 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 Sika Level-01 Primer, the bond of Sika Level-02 Primer and the adhesion of Sika Level-315.

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.

All loose friable material, including preparation residue, must be completely removed using a vacuum before application of the Sika Level-01 Primer. The compressive strength of the concrete substrate should be at least 20 MPa (>2900 psi) at 28 days with a minimum tensile strength of 1.0 MPa (>145 psi) at the time Sika Level-01 Primer or Sika Level-02 Primer are applied. Moisture vapor emission rates of the substrate should comply and meet the requirements of the proposed floor covering. Please consult the manufacturer of the final floor finish for advice.

Careful consideration should be given to the selection of the method of mechanical surface preparation and the timing of application of primer and underlayment. Immediately following mechanical preparation on some excessively porous substrates, outgassing will increase for a short period of time (approx. 48 hours) until equilibrium in slab vapor pressure and the ambient environment is reached. Before overall installation begins, Sika recommends the application of several small test patches to determine primer application requirements and acceptability of final product performance. In general, a one-coat application of Sika® Level-01 Primer or Sika Level-02 Primer should be sufficient; however, allowance should be made for double priming on excessively porous or profiled substrates. Where multiple coats are required, do not apply excessive material.

Wooden/Plywood Subfloors

Where installing Sika Level-315 underlayment over wooden subfloors, ensure that the subfloor consists of at least two layers of exterior grade plywood, a minimum of 1 ¼ inch (32mm) 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. Consult the manufacturer of the final floor covering with regard to the deflection requirements of the floor finish system.

Mixing

Pour 9-10 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 (avoid over-watering). Cool water 70°F 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-315 to the water, while slowly stirring, adding the complete contents of the 50 lb. sack. Once all the powder has been added, continue mixing until a lump-free and uniform consistency is achieved.

If mixing in a barrel or similar container, employ the water to powder ratio as stated above and use a low speed electric mixer (300 to 450 rpm) and mortar/grout mixing paddle to blend water and powder for a minimum of 3 minutes, until a uniform mix has been produced. Do not overmix or allow the paddle to rise above the level of material as this will introduce and entrap air into the mix, potentially shortening the working life or causing pin-holing in the underlayment. Let the mixed material stand until the majority of air bubbles have dispersed.

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.

Application

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 24 hours 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.

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.

Sika Level-315 must not be applied in such a way that expansion and control joints in the substrate are bridged; such joints must be detailed through the underlayment. Provide for expansion and control joints where specified, including at the perimeter of rooms, columns, and pedestals. Should such joints not exist in the substrate, they should still be provided for in the underlayment. Joints, of at least 6 mm (1/4 in.) can be formed using foam tape at the time of laying or can be cut into Sika Level-315 within 4 hours of application. Quickly and without delay, pour or pump the mixed material onto the primed surface in a ribbon pattern, ensuring that a wet edge is maintained; spread by trowel or pin screed/gauge rake to the required thickness (minimum 1.0 mm, maximum 25 mm) achieving the necessary coverage over high points. Over large areas, application by conventional piston, rotor-stator or underlayment type pumps is more appropriate. Though not necessary because of the high flow properties of the material, spike rolling in two directions (90°) to remove installation marks and any entrapped air can be undertaken, but avoid overworking.

Over Painting	<p>Waiting Time / Overcoating</p> <p>Suitable for overcoating with impermeable moisture sensitive floors after drying (max. 3% humidity); normally reached after 24 hours. Suitable for overcoating with tiles after 4-6 hours. Suitable for wood floor bonding at 1/8 inch (3 mm) thickness after 24 hours. Times are approximate and at 73°F(+23°C) and 50% R.H. and thus will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity. When overcoating Sika Level-315 always ensure the moisture content has achieved the required value for the coating product, as the waiting time will vary with the application thickness and ambient humidity. (Refer to the top coat product data sheet).</p> <p>Typical Moisture content of the product should be <4% prior to overcoating. Other test recommended by floor covering manufacturer should be used as the final decision making tool.</p>
Tooling & Finishing	<p>Applied Product ready for use at +68°F (20°C) and 50% R.H.</p> <p>Foot traffic ~ 2-3 hours</p> <p>Lightly serviceable ~ 16-24 hours</p> <p>Fully serviceable ~3-5 days</p> <p>Note: Times are approximate and will be affected by changing substrate and ambient conditions, particularly the temperature and relative humidity.</p>
Limitations	<ul style="list-style-type: none"> ■ For interior use only. Not suitable for slopes or inclines >0.5% ■ Do not apply Sika Level-315 onto based, chipboard, particle board, hardboard, metal, gypsum-based floors or dimensionally unstable substrates. ■ Engineer-approved wooden (plywood) subfloors must be at least 1.25 in. (3.2 cm) in thickness and must be properly secured, bonded, and prepared and free of contaminants and loose friable material. ■ Always prime concrete and cement substrates with Sika Level Primer-01 primer, and wooden or difficult to bond to substrates with Sika Level Primer-02 primer. ■ Protect Sika Level-315 from excessive heat and moving air by turning off radiant heating and forced air ventilation for 24 hours before installation and while the underlayment is curing. ■ Do not exceed the recommended water dosage and use clean potable water. ■ Temperature variations will affect working time, with low temperatures extending drying times. ■ Protect newly applied Sika Level-315 from condensation and water for at least 24 hours. ■ Prevent contaminants, dust and dirt from coming into contact with the underlayment for at least 4 hours and do not expose to rolling dynamic loads for 2 days (at 73°F, 50% R. H.). ■ When overcoating with Sika Primer MB, mechanical preparation may be required to remove all surface laitance and material which could interfere with adhesion. ■ If subsequent layers of Sika Level-315 are installed on existing, cured Sika Level-315, mechanical preparation and re-priming is required. ■ As the thickness of the underlayment will influence the time at which it can be overcoated with Sika Primer MB or overlaid with stones, tiles, or coverings, the manufacturer of such materials must be consulted for guidance regarding substrate moisture content and other characteristics. ■ Sika Level-315 does not provide an aesthetic finish and is intended to receive a final floor covering. ■ For adhesives other than SikaBond, we recommend a test application prior to use.
Caution	<p>WARNING: CORROSIVE, IRRITANT. Avoid direct contact. Contains Quartz (SiO₂) (CAS 14808-60-7), Alumina Cement (CAS 65997-16-2), Portland Cement (CAS: 65997-15-1), and Magnesium Carbonate (CAS: 546-93-0). Corrosive to eyes/skin/digestive tract. Causes burns to eyes/skin/digestive tract. Causes respiratory irritation. Harmful if swallowed.</p> <p>WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.</p>
Handling & Storage	<p>Avoid direct contact. Wear personal protective equipment (chemical resistant goggles/gloves/clothing) to prevent direct contact with skin and eyes. Use only in well ventilated areas. Open doors and windows during use. Use a properly fitted NIOSH respirator if ventilation is poor. Wash thoroughly with soap and water after use. Remove contaminated clothing and laundry before reuse.</p>
First Aid	<p>Eyes – Hold eyelids apart and flush thoroughly with water for 15 minutes. Skin – Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water. Inhalation – Remove to fresh air. Ingestion – Do not induce vomiting. Dilute with water. Contact physician. In all cases, contact a physician immediately if symptoms persist.</p>
Clean Up	<p>Avoid contact. Wear chemical resistant clothing/gloves/goggles. In absence of adequate ventilation; use a properly fitted NIOSH respirator. Uncured material can be removed with approved solvent. Follow solvent manufacturer's instructions for use and warnings. In case of spill, ventilate area and contain spill. Collect with absorbent material. Dispose of in accordance with current, applicable local, state, and federal regulations.</p>

Construction

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