



SL-1 151

**HIGH PERFORMANCE | PROFESSIONAL GRADE
QUICK SETTING SELF-LEVELING UNDERLAYMENT**



Description

SL-1 is a high-performance quick-setting self-levelling underlayment. It is used to level floors prior to the installation of ceramic tile, natural stone, resilient flooring, carpet, wood and other floor coverings. It is a high compressive strength underlayment and it can be applied from feather-edge to 75 mm (3") thick in a single pour. It is a self-leveling and self-drying underlayment and repair mix for interior concrete and engineer-approved floors. It offers high compressive strength, is abrasion-resistant and has a long heal time. Light foot traffic can begin after 2 to 3 hours and vehicular rubber-wheel traffic after 3 days. The benefits associated with the use of this product are:

- High Compressive Strength
- Self-Drying
- Can be applied from featheredge to 75 mm (3") thick in a single pour
- Reduces bond failure and crumbling of resilient flooring
- Cures fast and develops high early strength for quick installation of final floor coverings
- Rated for extra heavy use on wood subfloors with joists to 61 cm (24") per ASTM C627
- Long heal times for extended workability
- Water resistant, non-shrinking
- Pumpable, free-flowing, eliminates sanding and troweling
- Compatible with most adhesives
- Provides a smooth, level and uniform surface

Uses, Suitable Surfaces And Substrates

SL-1 is suited for quick-turnaround leveling, smoothing and repairing of interior floors before the installation of floor coverings. Ceramic tile and natural stone can be installed as soon as 3 to 4 hours after application. Other floor coverings, such as carpet, vinyl sheet goods, vinyl tile, vinyl composition tile (VCT), homogenous PVC, rubber and engineered wood plank, can typically be

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installed 16 to 24 hours after application. It can be applied on the following surfaces:

- Concrete and existing mortar beds that are, sound, dry, dimensionally stable, and fully cured for at least 28 days old.
- Cement backer boards
- Exterior grade plywood (interior) with floor joists up to 61 cm (24") o.c. Subfloors must be properly prepared, bonded, and free from dirt and dust.
- Existing ceramic tile, pavers, brick
- Natural stone
- Concrete terrazzo
- Well bonded sheet vinyl and resilient flooring
- Cutback adhesive (non-water soluble)
- Properly prepared OSB
- Radiant heating systems

Suitable Floor Coverings

- Ceramic tile, pavers, brick, thin brick
- Impervious porcelain and glass tile
- Natural and dimensional stone, terrazzo
- Carpet
- Wood, parquet
- Vinyl composition tile (VCT)
- Sheet vinyl flooring
- Laminated flooring

Standards, Approvals and Test Methods

- ASTM C109 for Compressive Strength
- ASTM C348 Flexural Strength
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
- ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
- ANSI A108.01 & A108.02 of the American National Standards for the Installation of Ceramic Tile Resilient Floor Covering Institute (RFCI) — Recommended Work Practices for Removal of Resilient Floor Coverings
- Tile Council of North America (TCNA) — TCNA Handbook for Ceramic Tile Installation, TCNA Method EJ171
- LEED Points Contribution LEED Points Available
MR Credit 5..... 2 Points

Limitations

- Do not use over gypsum underlayment.
- Do not use when the temperature is below 4°C (40°F). In cooler conditions, use indirect auxiliary heaters to maintain an ambient substrate temperature. Maintain this minimum temperature for at least 72 hours after applying.
- Do not use on sloped surfaces that require drainage.
- *SL-1* is for dry, interior use only. For exterior use or for areas subject to prolonged exposure to moisture or water, use an exterior rated **DYNA** brand of underlayment, topping or screed.
- Not for use in submerged applications.
- Do not install *SL-1* over particleboard, chipboard, Masonite®, luan panels, metal, asbestos, gypsum-based patching materials or any other unstable materials.
- Do not exceed recommended mixing ratio as indicated in mixing instructions. Over watering will weaken product properties.
- Never mix with cement or other admixtures.
- Do not apply *SL-1* over waterproofing or crack isolation membranes.

Surface Preparation

Surfaces must be structurally sound, clean, dry and free from grease, oil, paint, tar, asphalt, wax, sealers, curing compounds, release agents, laitance, dirt and other contaminants that would prevent good adhesion. Maintain ambient room temperature. Surfaces and materials should be maintained at higher than 10°C (50°F). Moisture vapor transmission should be less than 2,23 kg (5 lbs.) per 92,9 m² (1000 ft²) per day in accordance with ASTM F1869 or equivalent. If vapor transmission exceeds the recommended maximum, contact **DYNA** Technical Services for further assistance.

Always prime the prepared surface with a **DYNA** brand of primer before applying *SL-1*. Do not apply primer over wet surfaces. Apply the primer with a paint brush, short nap roller or soft push broom. Apply a thin even coat and allow to dry approximately 2 hours to a clear film.

Concrete surfaces must be fully cured and must accept water penetration. New concrete surfaces must be at least 28 days old. Contaminants should be mechanically removed before installation. Concrete must be free of efflorescence and not subject to hydrostatic pressure. It is recommended to mechanically roughen concrete to ensure a good bond. Concrete surfaces can be mechanically profiled and prepared by shot-blasting, sandblasting, water-jetting, scarifying, or diamond-grinding.

Plywood floors, including those under resilient flooring, must be structurally sound and must meet all the ANSI standards. The maximum allowable deflection of the supporting surface must not exceed L/360 (or L/720 for installations involving natural stone or their agglomerates) when exposed to live or dead loads. *SL-1* can be used over subfloors of engineer-approved plywood or OSB subfloors. When applying **DYNA** underlayments to plywood flooring, installation requirements (finished flooring, load, use, and/or deflection) may require the utilization of a metal lath or diamond mesh on top of the primed surface prior to the application of the underlayment. In all cases one can anticipate better performance when utilizing a lath, particularly over OSB. Differential or excessive movement within plywood substrate may lead to hairline cracks at plywood joints. For a metal lath, fasten every 15–20 cm (6"–8") with fasteners that have a galvanized or corrosion resistant coating. For a 18,2 mm (23/32") plywood subfloor with 61 cm (24") o.c. joists, the metal lath must be a minimum of 1,13 kg/m² (2,5 lb/yd²). All plywood seams should be gapped 3 mm (1/8") and protected by placing a minimum 38 mm (1,5") bond breaker tape over the gaps.

Provide for expansion and control joints where specified, including the perimeter of the room, columns, supports and equipment pedestals. Where control or expansion joints do not exist in the substrate, provide for them in the system.

Mixing

Small Content Mixes

Use a clean mixing vessel 18,9 L (5 U.S. gals.) and pour the required amount of cool, clean, potable water. Use a heavy duty 13 mm (1/2") electric drill and mixing paddle at 500 R.P.M. Add *SL-1* powder while slowly mixing. Mix water and *SL-1* powder to a mixing ratio of 4,55 to 5,0 L (4,81 to 5,28 U.S. qts.) of water per 22,7 kg. (50 lb.) bag of *SL-1*. Upon combining all of the water and the entire contents of *SL-1*, begin mixing material together to a homogenous and lump-free consistency. This takes from 90 to 120 seconds. This mixing ratio must remain consistent. Do not overwater material.

Drum Mixing

Use the same mixing ratio as described above and use a high-speed mixer (at about 1200 rpm) with a mixing paddle. Typically, this mixing procedure involves two bags of *SL-1* with the correct water ratio as described above. Mix to a homogenous, lump-free consistency for about 90 to 120 seconds. Do not overmix. Overmixing can cause air entrapment, which will shorten the pot life

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or cause pinholing during application and curing.

Pump Mixing

SL-1 can be mechanically mixed, using the appropriate mixing ratio above, with a continuous mixer, pump and hose or a batch mixer, pump and hose.

Application

Ensure that doors and windows are closed, and turn off HVAC systems to prevent drafts during application and until floor is cured. Turn off all radiant heating systems. Protect areas from direct sunlight.

When working in large areas it can be made easier and more efficient by using conventional piston, rotor-stator or underlayment-type pumps. For best results a team may be required. Work as a team to provide a continuous flow of wet material, to avoid trapping air or creating a cold joint.

Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. Quickly pour or pump *SL-1* onto the properly prepared and primed surface in a ribbon pattern. If a wet edge cannot be maintained, reduce the width of the pour.

SL-1 has an approximate working time of 15 minutes at 23°C (73°F). It should be noted that temperature and humidity will affect working time, flowability and setting time.

After placing the *SL-1*, spread the material with a gauge spreader to assist in gauging out the *SL-1* to the desired depth. *SL-1* will seek its own level during the first 10 to 15 minutes. For featheredging and touch up, use a smoothing tool. *SL-1* can be applied to 75 mm (3") thick in one application; if a second layer is required, install immediately after the first layer has set to a walkable hardness. If the first layer has dried over 12 hours, re-prime before the second application. All of the above statements are subject to real-time jobsite temperatures and humidity conditions.

Installation Over Existing Ceramic Tile, Stone or Cement Terrazzo

- Skim coat existing ceramic tile, cement terrazzo or natural stone with *DYNAFLEX RS* (min. 3 mm [1/8"]) thick and allow to dry.
- Prime surface according to the priming instructions and install *SL-1*.

Curing

- *SL-1* cures to a walkable hardness in about 3 hours. Do not use a damp-curing method or curing and sealing compounds as this product is self-curing.
- For ceramic tile and stone, allow 4 hours; for impervious floor coverings, allow 16 to 24 hours. Test for moisture content before applying vinyl or wood flooring.
- Protect installation from traffic, dirt and dust from other trades until *SL-1* has completely cured and before the final floor surface has been installed.
- Do not subject *SL-1* to dynamic loads for at least 72 hours after installation.

Technical Services

Information is available by calling the **DYNA** Technical Service

Toll Free: **1-866-861-6424**

Telephone: **905-761-3309**

Fax: **905-761-2114**

To acquire technical and safety literature, please visit our website at www.dyna.ca

Clean-Up

Wash hands and tools with water promptly before material hardens.

Caution

Consult and read the SDS thoroughly for this product for more safety information. This product is corrosive as it contains Portland cement. Portland cement when mixed with water results in a solution of calcium hydroxide and is therefore injurious to the eyes and can cause skin irritation. Therefore, avoid eye contact and prolonged contact with the skin. Protect eyes with goggles and skin with waterproof gloves. If splashed in eyes, flush thoroughly for at least 15 minutes and consult a physician immediately. In case of ingestion consult a physician immediately. **KEEP OUT OF REACH OF CHILDREN**

Notice

DYNA shall not be liable for incidental and consequential damages, indirectly or directly sustained, nor for any loss by application of these goods not in accordance with the printed instructions or for other than the intended use. Before using the user shall determine the suitability of the product for its intended use and the user will assume all risks and liabilities that may arise in connection therewith. Our liability is expressly limited to the replacement of defective goods. Any claim shall be deemed waived unless the claim is made in writing to us within 15 days from the date it was, or reasonably should have been, discovered that the product was defective.

Technical Data

Test Procedures / Characteristics	Typical Values Obtained
Physical state	Powder
Color	Light gray
Flammability	Flame spread: 0 Fuel contribution: 0 Smoke development: 0
VOCs (Rule #1168 of California's SCAQMD)	0 g/L
Mixing ratio Water to SL-1 (powder) per 50 lbs	4,55 to 5,0 L per 22,7 kg (4,81 to 5,28 U.S. qts. per 50 lb.)
Density	2,0 kg per L (124 lbs. per cu. ft.)
pH	11 when wet
Application temperature range	10°C to 35°C (50°F to 95°F)
Working time	Approx. 15-20 minutes
Heal time	Approx. 10-15 minutes
Final set	Typically 3 hours
Time required before installation of tile and stone	3 to 6 hours, depending on temperature and humidity
Time required before installation of floor covering or coating	16 to 24 hours, depending on temperature and humidity
<i>Compressive strength ASTM C109</i>	
1 day	> 18,5 MPa (2 650 psi)
7 days	> 27,2 MPa (3 950 psi)
28 days	> 34,45 MPa (5 000 psi)
<i>Flexural strength ASTM C348</i>	
1 day	> 4,14 MPa (600 psi)
7 days	> 6,07 MPa (880 psi)
28 days	> 7,93 MPa (1 150 psi)
<i>Pullout strength (rupture of concrete) ASTM C1583</i>	
28 days	> 2,76 MPa (400 psi)
Shelf Life and Storage	
Shelf life	1 year if stored off the ground in dry areas at 18-27°C (65-80°F) with 50% relative humidity.
Storage	Do not double stack pallets of product, use industrial shelving.
Packaging	
Size	Bag: 22,7 kg (50 lbs.)
Approximate Product Coverage* per thickness for a 22.7 kg (50-lb.) bag	
<i>Thickness</i>	<i>Yield</i>
3 mm (1/8")	4,46 m ² (48 sq. ft.)
6 mm (1/4")	2,23 m ² (24 sq. ft.)
13 mm (1/2")	1,11 m ² (12 sq. ft.)
25 mm (1")	0,6 m ² (6,4 sq. ft.)
38 mm (1 1/2")	0.4 m ² (4,27 sq. ft.)
CSI Division Classifications	
Cast Underlayment	03 54 00

DYNA[®]

ADVANCED BUILDING SYSTEMS

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