



AKONA®

SELF-LEVELING FLOOR UNDERLAYMENT CEMENT

Flowable mortar for producing a flat and level underlayment floor

1. PRODUCT NAME

Akona® Self-Leveling Floor Underlayment Cement

2. MANUFACTURER

TCC Materials®
2025 Centre Pointe Blvd.
Mendota Heights, MN 55120 USA
Phone: 1.651.688.9116
Web: tccmaterials.com

3. PRODUCT DESCRIPTION

Akona Self-Leveling Floor Underlayment Cement is a flowable mortar for use where a flat, level surface is necessary prior to installing floor coverings. It requires minimal labor to produce a smooth, level surface that is ready for installing floor coverings such as ceramic tile, wood, marble, resilient flooring, and carpet. Because the primer is integral within the mix, you do not need to spend time or money adding additional primer. When used to encapsulate radiant heating installations, it helps to increase even heat distribution and protects cables or tubes during the finished flooring installation process. Designed for interior applications from 1/8 in. to 1 in. (3-25 mm). Self-Leveling Floor Underlayment Cement is not designed for use as a final wear surface.

Features and Benefits

- High strength
- Self-leveling and flowable mixture
- Premixed with integral primer
- Provides flat and level floors

When/Where to Use

- Used to prepare plywood or concrete surfaces prior to installation of flooring
- Designed for interior applications from 1/8 in. up to 1 in. thick (3-25 mm)
- Encapsulate radiant heat installations
- Can be used for leveling, smoothing, and repairing interior floors before installation of floor coverings

4. TECHNICAL DATA

Typical Values • Akona Self-Leveling Floor Underlayment Cement	
Flow (ASTM C1708)	140-150 mm
Heal time	20-30 minutes
Final set time (ASTM C191)	25-30 minutes
Compressive Strength (ASTM C109)	
4 hours	> 1,500 psi
24 hours	> 2,500 psi
7 days	> 4,500 psi
28 days	> 5,500 psi
Flexural Strength (ASTM C348)	
24 hours	> 400 psi
28 days	> 600 psi
Length Change, Percentage (ASTM C157)	
28 days in water	< 0.01%
28 days in air	< -0.02%
Bond Strength, Tensile Pull Off, 28 Days (ASTM C1583)	
Concrete	> 300 psi
Ceramic tile	> 140 psi
Exterior grade plywood	> 75 psi

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤
Test results obtained under controlled laboratory conditions at 72°F (22°C) and 50% relative humidity. Reasonable variations can occur due to atmospheric and job site conditions.

Applicable Standards:

- ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. 50 mm Cube Specimens)
- ASTM C348 Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
- ASTM C1708 Standard Test Methods for Self-leveling Mortars Containing Hydraulic Cements

Available Size

- 50 lb. (22.7 kg) bag (BOM # 104623)

Coverage

Each 50 lb. bag covers approximately 50 sq. ft. at 1/8 in. thickness (4.6 m² @ 3 mm)

5. INSTALLATION

Preparation

Read all instructions before starting work. Refer to the Tile Council of North America Handbook for Ceramic, Glass, and Stone Tile Installation method RH140 instructions.

- All surfaces must be stable, solid, structurally sound, and clean.
- This product will not correct or compensate for a structurally

defective substrate, the installer is responsible for ensuring the subfloor is suitable for this underlayment cement and the selected finished flooring.

- Restrict underlayment from moving to unwanted areas by creating small dams constructed of 1" x 2" lumber wrapping their edges with duct tape. Install expansion joints where underlayment cement meets retraining surfaces such as perimeter walls and sharp corners such as column bases, pedestals, supports, etc. using ¼ in. (6 mm) foam tape or caulking.
- Acclimating water and powder to room temperatures of 65-75°F (18-23°C), 24 hours before use is recommended.

Concrete Surfaces:

- Concrete must be fully cured (28 days minimum), free of efflorescence, and not subject to hydrostatic pressure or moisture condensation.
- Remove all unsound concrete, grease, oil, dirt, paint, sealers, curing compounds, waxes, old adhesive residue, gypsum based underlayments, old flooring, and any other foreign materials that will inhibit adhesion. Mechanical removal is recommended, chemicals often serve to drive them deeper into the concrete substrate.
- Smooth troweled or dense concrete surfaces should be roughened to ensure proper bond adhesion. For best results, the surface should be rougher than light broom finished concrete with a concrete surface profile (CSP) texture between CSP 4 to CSP 6 as referenced in the International Concrete Repair Institute (ICRI) Technical Guideline No 310-2. Mechanical methods such as shotblasting, scarifying, grinding, or sanding can be used to create surface texture.

Plywood Surfaces:

- Residential and light commercial applications only.
- All wood subfloors must be structurally sound, securely fastened, and have a maximum deflection of L/360 for ceramic tile, or L/720 for stone (including live, dead, impact, and concentrated loads). The wood must be either ¾ in. (19 mm) tongue and groove, APA rated exterior grade/exposure 1 plywood or OSB underlayment grade equivalent.
- The surface must be clean, free from any contaminants that may act as bond breakers such as dirt, paint, wall compound, varnish, grease, oils, or wax. Refasten any loose boards.
- Allow a ⅛ in. (3 mm) gap between sheets, fill with a flexible sealant or caulk and fill all nail holes or areas where flow could leak.
- Securely fasten every 4-6 in. (10-15 cm) either galvanized metal lath or plastic lath designed for this purpose to the wood surface prior to applying underlayment cement. Overlap lath edges by ¼ in. (6 mm) and secure using a minimum ⅜ in. (9.5 mm) staple with no gaps, keeping lath flat. Be sure to offset lath joints. When installing over plywood surfaces plan to pour no less than ¼" (6 mm) thickness above the surface of the lath.

Refer to:

Tile Council of North America (TCNA) [Handbook for Ceramic, Glass, Stone and Tile Installations](#)
International Residential Building Code (IRC)
International Building Code (IBC)
Marble Institute of America (MIA)

Note: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Mixing

1. Use cool, potable water, clean tools, and clean containers. No bonding additive or primer is needed.
2. Mix a 50 lb. bag of underlayment cement with accurately measured 4½ qt. (4.275 L) of cool, clean water. Add powder to the pre-measured water and mix for a minimum of 2 minutes with a 400-600 RPM heavy-duty drill with a square mortar paddle mixing tool until a lump-free mixture is obtained. A 5 gal. (18.9 L) pail is recommended for mixing. **Do not add additional water** to the product as this will adversely affect the performance of the product. Avoid over watering, over mixing, or moving the mixer up and down during mixing as this will entrap air, lower the strength, and may cause cracking and/or pin-holing. The formation of a white film on the surface is an indication of over watering.
3. At 70°F (21°C), the product has about a 10 minute flow/heal time. Always pour fresh material into existing material within this time frame. Warmer temperatures will reduce the working time. The addition of cold water at high temperatures, or warm water in low temperatures will aid in adjusting the mix temperature.

Application

1. Apply only to surfaces that are frost free and between 50°F (10°C) to 90°F (32°C) within 24 hours of application and 72 hours thereafter. Best flow results are achieved when floor temperature is between 60°-80°F (15.5°-26°C).
2. Once product is mixed, pour material onto floor in a uniform manner to achieve a flat floor. Do not over work material once it is on the floor. Best results are obtained pouring across the shorter distance in the room. A gauge rake designed for underlayments may be helpful for larger areas.
3. If a higher build-up is needed over the first pour, allow 24 hours drying time between pours.
4. Protect new surface from use until material is completely hard and set. Typically at temperatures of 72°F (22°C) or above:
 - Surfaces will accept foot traffic in 2-4 hours
 - Installation of ceramic tile after reaching walkable hardness, typically 12-24 hours or overnight
 - Installation of resilient flooring after 72 hours

Curing

The use of damp curing or the use of curing compounds is not recommended. Protect from excessive drying due to direct sunlight, temperatures, and air movement. Turn off all forced-air ventilation whenever possible for up to 24 hours after installation.

Clean Up

Use soapy water to clean hands and tools immediately after use. Dried material must be mechanically removed. Use a waste water hardener (e.g. Congelz® or similar product) for cementitious waste disposal.

Limitations

- This product is NOT to be used as a final wear surface.
- For interior use only.
- Metal or plastic lath design for this purpose is required when going over plywood subfloors, it is not needed over concrete surfaces.
- When using over lath, install no less than ¼ in. (6 mm) thickness of self-leveling above the lath surface.
- Do not over-water, retemper, or add additional additives.
- Do not install over dimensionally unstable substrates such as gypsum, gypsum based patching compounds, particle board, luan, asbestos, or chip board.
- Do not install over old tacky or pressure sensitive adhesive residue, paints, sealers, curing compounds, old flooring, and other foreign material.
- Do not allow heavy or sharp metal objects to be dragged

directly across the new Self-Leveling Underlayment surface. Protect new surface from use until material is completely hard and set.

- When using to encapsulate radiant heat flooring, cover the highest point of the heat system (cables or tubes) by a minimum of ¼ in. (6 mm). Allow the self-leveling to cure a minimum of 14 days before turning on the heat, and bring heat up slowly during the first use.
- Temperature and humidity may cause the set time to vary slightly. Cooler weather will slightly retard set time – hot weather will slightly accelerate set time.
- Follow all industry standard safety procedures when handling, such as gloves and eye protection. Wear gloves at all times, failure to do so can result in severe burns.

Safety

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: tccmaterials.com

Cautions

Read complete cautionary information printed on product container prior to use.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the covered Akona brand product(s) under normal environmental and working conditions. Because each project is different, TCC Materials cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

6. AVAILABILITY

To locate Akona products in your area, please contact:

Phone: 1.651.688.9116
Email: info@tccmaterials.com

7. WARRANTY

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, expressed or implied, including, but not limited to those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that Seller's liability to the Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

Shelf Life	Best when used within one year in original, unopened bags
Storage Conditions	Store dry, cool, out of direct sunlight. Best to condition material to 65-75°F (18°-23°C) before using.
Color	Gray

WARNING: INJURIOUS TO EYES

KEEP OUT OF REACH OF CHILDREN