



FF105 High Performance Self-Leveling Concrete

High Performance Self-Leveling Overlay
Introducing FF105, our advanced high-strength, cement-based self-leveling compound, expertly formulated for medium and low-load bearing floors. This eco-friendly flooring solution boasts zero VOC emissions and is ideal for a range of environments, from office spaces to retail shops and warehouses.

APPLICATION DEPTH
1/5" - 2"

FOOT TRAFFIC
6
HOURS

INITIAL SET TIME
40 - 60
MINUTES

FINAL STRENGTH
6500
PSI

YIELD / COVERAGE / WATER

Package Size	Thickness	Approx. Coverage	Water Needed
50 lb	1/5"	2.2m ² (23.68 ft ²)	4.76 qts
22.7 kg	1/4"	1.7m ² (18.29ft ²)	4.5 L
	2/5"	1.1 m ² (11.84 ft ²)	

Technical Data

Flow	Final Set Time	Length Change	ASTM CERTIFICATION
120 - 140 mm	40 - 60 min	±0.02%	ASTM C1708 ASTM C191 ASTM C157

Compressive Strength

PSI - 1 Day	PSI - 7 Day	PSI - 28 Day
3000 psi	5000 psi	6500 psi
20.68 MPa	37.9 MPa	41.37 MPa

Flexural Strength

PSI - 7 Day	PSI - 28 Day
900 psi	1000 psi
6.2 MPa	6.89 MPa

ASTM CERTIFICATION
ASTM C109
ASTM C348



Product Description

FF105 High-Strength Cement Self-Leveling is a high-tech, technically complex flooring material specially developed for medium and lighter load floors, and it is a green, environmentally friendly material with no VOC emissions.

FF105 is composed of various functional components proportioned to become a super high-flow state floor material when mixed with water according to the on-site instructions. It is particularly suitable for new construction or renovation of floors in the following areas:

- Business office areas
- Sales exhibition halls
- Commercial shops
- Parking lots
- Warehouses, etc.

FF105 is a fast-setting and early-strength self-leveling material that can reach a compressive strength of 25MPa within 24 hours at normal temperatures (15°C to 25°C), allowing for swift progression to the next construction process.

Product Features

- Easy to lay with excellent fluidity
- Treated base layers do not require the use of an interface agent for sealing and can be directly moistened with water 6 hours before laying, greatly shortening the waiting period for interface sealing
- Volume stable, not prone to cracking
- Strong adhesion to the base layer, not prone to hollow drumming
- Quick-setting and hardening, begins to solidify in about 40 minutes, walkable after 6 hours
- High hardness, wear resistance, and a certain degree of impact resistance
- Class A fire resistance, easy to maintain

The finished FF105 product can be used directly as a surface layer after high polishing, or it can be treated with a liquid hardener and then ground and polished, or used as a base material for various functional surface coating materials.

The recommended construction thickness for FF105 is 5mm to 8mm, with each bag covering an area of 1.5m² to 2.5m². The specific construction thickness should be determined based on the levelness of the base layer, and the recommended single laying width should not exceed 6 meters.

FF105 is packaged in moisture-proof paper bags, with a net weight of 22.7KG per bag, with a shelf life of 6 months in a dry and sealed environment, and the best use period is within 3 months. The regular colors include light gray and dark gray.

Construction Instruction

Original Surface Treatment

- The treatment of the original surface is a critical factor in determining the success of the flooring mortar application. The base concrete strength grade for FF105 spreading should not be less than C25.
- The base must be solid, flat, free of oil contamination, dust, and release agents. Loose and hollow areas must be removed. Oil-contaminated surfaces can be cleaned with a low-solubility alkaline solution (such as a 10% NaOH solution), then thoroughly rinsed with clean water.
- For depressed areas and pre-treated cracks, use this product or the same series of mortar for preliminary repairs to level the surface. The repaired mortar surface should be roughened, and after final setting (no marks when scratched with a finger), proceed to the next construction step; for protruding areas, use planing machinery to level.
- For surfaces with sanding issues, use a steel shot blasting machine or a scarifier to completely remove 1-2mm of the surface, and clean away the dust.
- For substrates with high absorption rates, apply an interface agent (follow the construction method of the interface agent as described in its instructions, and it is not recommended to use interface agents with strong film-forming properties) to fully seal the surface. Other surfaces can be moistened with water for more than 6 hours to achieve saturation. Ensure uniform and sufficient moistening during the wetting period (especially pay attention to areas that are higher and might not be wetted when the base is soaked), and use an interface agent to seal slopes and other areas that cannot be continuously wetted to prevent defects such as bulging and air holes due to insufficient wetting.

Floor Construction

- After the base treatment is complete, proceed with the FF105 application (ensure that the base is in a saturated surface-dry state when applying to avoid low strength, cracking, and air pockets due to absorption).
- The water ratio for FF105 mixture (dry mortar: water = 1:0.180, meaning add 4.5kg water for every 25kg bag of dry material). Use tap water or other water that has been tested to not affect the properties of the powder.
- Use mechanical mixing for 3-5 minutes, the best effect is at 400-500 rpm. FF105 is a quick-setting mortar; after mixing, complete the application within 15 minutes. Clean mixing containers and transport buckets thoroughly every half hour to prevent material from sticking to the walls and solidifying, causing defects on the floor.
- Filter the mixed material through a 10-mesh screen (with openings of about 2mm) to reduce the impact of clumps on the mortar surface.

- Calculate the material needed per square meter based on the construction thickness, spread it step by step, using a trowel according to the thickness, and then use a defoaming roller for bubble removal and leveling (roller pins should be more than 15mm longer than the thickness of the mortar).
- After construction, avoid rapid or uneven drying (take necessary protective measures in areas exposed to light or drafts, and protect for more than 24 hours). No water curing is required under normal indoor humidity conditions (above 50%).
- When using a hardener for polishing, 24 hours after spreading the mortar (extended to 72 hours in winter), upon confirmation, proceed with the surface grinding and polishing. Choose the grinding and polishing sequence and specifications based on the levelness and smoothness requirements to achieve the best effect.
- The expansion joint cutting plan for the product should follow the base layer's joint setup in principle.

Additional Notes and Instructions

- If the product has been stored for over three months, perform a performance test before use to ensure the setting time does not adversely affect the flooring results.
- When spreading the mortar, it is necessary to completely remove any standing water from the substrate to prevent discoloration in that area.
- After spreading, cover any areas that need protection with breathable fabric hung above to prevent condensation from dripping onto the floor, which can cause water stains or color differences.
- This product is a high-flow state cement-based mortar. Due to differences in the density of the material components, slight color variations may occur when using defoaming rollers and other tools for air release and leveling. Such color differences will not affect the floor's functionality, though roller marks may be visible.
- When using this product as a top layer, be cautious of water and liquids. If water or other liquids spill onto the floor, clean them up promptly to prevent water marks or aesthetic damage.
- When processing with high-polish pads, use a vacuum cleaner to accompany the work.
- Inconsistencies in the moisture content of the base layer can cause hydration color differences in the product; areas with higher moisture may appear slightly darker, affecting the visual uniformity.
- Cement-based floors may show marks during use, especially lighter-colored floors, which are not easily removed. In areas with high aesthetic requirements, treat the cement base layer or cover it with an organic coating material before use.
- Before the material sets, construction tools can be washed directly with water; after the material has set, mechanical methods should be used for cleaning.

Safety and Warnings



- This product contains 30% to 50% cement, which may cause eye injury, skin irritation, and respiratory irritation.
- Please wear protective gloves, safety goggles, and face shields when mixing or conducting other construction operations.
- If the product accidentally enters the eyes, carefully rinse with water for several minutes. If you are wearing contact lenses, remove them if it is safe and convenient to do so, and continue rinsing. Seek medical attention promptly if necessary.
- If inhalation causes discomfort, move to an area with fresh air immediately, rest in a comfortable position, and seek medical attention promptly if necessary.



WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

KEEP OUT OF THE REACH OF CHILDREN AND ANIMALS.

For additional information, call Chemtrec at 800-424-9300 or 703-527-3887 outside of USA. Refer to Safety Data Sheet (SDS) for further information.

Product Warranty Limited to One Year

The manufacturer guarantees that this product is free from material and workmanship defects and will function in accordance with the manufacturer's product specifications available at the time of purchase. This warranty lasts for one year from the date of purchase. Any warranties of merchantability or suitability for a specific use are confined to the period of this explicit warranty. This warranty is valid only if the product is utilized precisely as per the manufacturer's published guidelines. The only remedy provided by this warranty is the replacement of the faulty product or a refund of the purchase price, at the discretion of the manufacturer. Under this warranty, recovery of consequential, special, or incidental damages is not possible.