Novoplan HFL

High-Flow, Self-Leveling Compound

DESCRIPTION

Novoplan® HFL is a self-leveling, calcium-aluminate-based underlayment and repair mix for interior concrete and engineer-approved floors with high-flow characteristics.

FEATURES AND BENEFITS

- High-flow properties for easy placement
- Suitable for use under carpet, resilient, wood and ceramic flooring

INDUSTRY STANDARDS AND APPROVALS

- Meets compression and flatness requirements of ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
- Meets compression and flatness requirements of ASTM F2873, Standard Practice for the Installation of Self-Leveling Underlayment, and the Preparation of Surface to Receive Resilient Flooring

Green certifications

- Living Building Challenge (LBC) Red List Free: This product has been verified per the most current Red List on the LBC's Website.

WHERE TO USE

- For leveling, smoothing and repairing of interior, residential and commercial floors before the installation of floor coverings

- For use over radiant-heated floors or to encapsulate hydronic or electric radiant-heated floors

LIMITATIONS

- Do not mix with other self-leveling underlayments.
- Do not install over unprimed surfaces.
- Do not install over flooring products, adhesive residue or substrates containing asbestos.
- Do not use for exterior applications. For interior use only.
- Do not apply *Novoplan HFL* unless the substrate temperature is maintained at between 50°F and 90°F (10°C and 32°C) for 48 hours before, during and after application. Do not allow freshly installed *Novoplan HFL* to freeze.
- Do not use as a final wear surface. Cured *Novoplan HFL* must be covered with a finished floor system or floor covering.
- Do not install over standing water.
- Do not install over dimensionally unstable materials.
- Do not install if the maximum allowable deflection of the supporting surface exceeds L/360 (or L/720 for installations involving natural stone or their agglomerates) when exposed to live or dead loads.
- Do not use in areas subjected to prolonged exposure to moisture. Contact MAPEI's Technical Services Department for waterproofing recommendations.
- Do not use as a moisture mitigation product. Cement-based self-leveling underlayments do not reduce moisture vapor transmissions emanating from high-humidity concrete slabs. If the flooring or installation system requires protection from elevated humidity levels, moisture mitigation must be done before *Novoplan HFL* is installed. Contact MAPEI's Technical Services Department for recommendations regarding moisture mitigation.

SUITABLE SUBSTRATES

- Concrete that is installed in compliance with ASTM F710, that is at least 28 days old, and that is free from hydrostatic pressure, osmotic blistering and alkali silica reaction. Surface profiling of concrete is not required if *Novoplan HFL* will only be exposed to light or moderate traffic conditions. For high traffic, heavy rolling loads and maximum depth of fill conditions, an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #3 to #4 is required beneath the selected primer. Alternatively, a textured primer may be used instead of mechanical profiling. Make sure to follow all written instructions and guidelines found on the Technical Data Sheet and other related documentation for the selected primer.
- Well-bonded and dimensionally stable ceramic tile, porcelain tile, quarry tile, natural stone, vinyl composition tile (VCT), cement, epoxy-based moisture barriers and epoxy terrazzo
- Properly installed cement backer units
- Durable and fully cured cement-based mortar beds
- Engineer-approved plywood or oriented strand board (OSB) subfloors with a maximum of 19.2" (48.77 cm) on center joist placement and that meets requirements of L/360
- Nailed-down wood flooring (including plank wood subfloors, strip wood subfloors and nailed-down solid wood flooring) that has been covered over with at least one layer of 5/8" (16 mm) plywood, glued and screwed
- Gypsum-based underlayments
- *Mapeheat™ Membrane*, *Mapeguard® UM* and similar crack-isolation and uncoupling membranes (these do not require priming)

SURFACE PREPARATION

- All substrates must be properly prepared, structurally sound, stable, solid, dry and primed with an appropriate MAPEI primer unless otherwise noted.
- On concrete substrates, fill in deep areas, holes and cracks with an appropriate MAPEI patching compound or screed. Fluid self-leveler may leak through to a floor below or other unwanted cavities.
- On plywood substrates, fill joints with an acrylic-based caulking compound to prevent the underlayment from leaking into a floor below.

For details on proper surface preparation, see the reference guide “Surface-preparation requirements for self-leveling underlayments” in the Floor Covering Installation Systems section of MAPEI’s Website.

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

1. Based on the number of bags to be mixed, measure and pour the required amount of water (see “Mixing ratio” in the chart below) into a clean mixing vessel such as *MAPEI Self-Leveling Mixing Barrel* or a plastic pail that can hold at least 5 U.S. gals. (18.9 L). For best results, the water temperature should be at about room temperature (70°F or 21°C). The mixing ratio must remain consistent; do not overwater the mixture.
2. Slowly add the powder into the pre-measured water, taking care to not generate excessive dust. Use a high-speed drill and an oval paddle mixer to mix *Novoplan HFL* to a homogenous, lump-free consistency.
3. Continue to mix for 2 to 3 minutes. Do not overmix: Overmixing or moving the mixer up and down during the mixing process could trap air or cause pinholing during the application and curing process.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Substrates and ambient room temperatures should be maintained at between 50°F and 85°F (10°C and 29°C) during application as well as for 3 days before and after application.
2. Before product installation, close doors and windows, and turn off HVAC systems to prevent drafts during application and until the underlayment is cured. Protect installation areas from direct sunlight.
3. Quickly pour or pump mixed self-leveling compound onto the surface in a ribbon pattern. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. For best results, work as a team to provide a continuous flow of wet material, to avoid trapping air or creating a cold joint. Apply enough material to adequately cover all high spots.
4. Shortly after placing *Novoplan HFL*, use a gauge rake to spread the material and assist in gauging it to the desired depth. After achieving the desired depth, use a smoother to obtain an even surface.

CURING

- *Novoplan HFL* is self-curing. Do not use a damp-curing method, or curing and sealing compounds.
- Cool-weather conditions may extend curing or setting times. Warmer weather conditions may accelerate working, curing and setting times.

CLEANUP

- Wash hands and tools with water promptly before the material hardens. Cured material must be mechanically removed.

PROTECTION

- Protect *Novoplan HFL* from direct sunlight, excessive heat and drafty conditions during curing. Turn off all forced ventilation and radiant heating systems, and protect the installation for up to 24 hours after completion.
- Avoid walking on the installed surface for at least 2 to 3 hours after installation, depending upon temperature and humidity conditions.
- Protect the installation from traffic, dirt and dust from other trades until *Novoplan HFL* is completely cured and final flooring has been installed.
- Do not expose *Novoplan HFL* to rolling dynamic loads, such as fork lifts or scissor lifts, for at least 3 days after installation.

Product Performance Properties

at 73°F (23°C) and 50% relative humidity (RH)

Laboratory Tests	Results
Cured density	122 lbs. per cu. ft. (1.95 kg per L)
Wet density	123 lbs. per cu. ft. (1.97 kg per L)
pH (of wet mixture)	11
VOC content	0 g per L
Compressive strength – ASTM C109 Modified	
7 days	> 2,500 psi (17.2 MPa)
28 days	> 4,500 psi (31.0 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	> 870 psi (6 MPa)
Pull-out strength – ASTM C1583	
28 days	> 440 psi (3.03 MPa)

Shelf Life and Product Characteristics

before mixing

Shelf life	1 year in original, unopened packaging stored at 73°F (23°C) and 50% RH
Physical state	Powder
Color	Gray

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Application Properties

Application temperature range	50°F to 85°F (10°C to 29°C)
Mixing ratio	6 to 6.4 U.S. qts. (5.68 to 6.06 L) of room-temperature water per 50 lbs. (22.7 kg) of powder
Mixing time	2 to 3 minutes
Flow time	30 to 45 minutes
Single-lift application range	1/4" to 1" (6 mm to 2.5 cm)
Minimum thickness over highest point in floor	1/8" (3 mm)
Waiting time for secondary applications of primer and self-leveling compounds	24 hours
Drying time before installation of non-moisture-sensitive floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness	12 hours
Drying time before installation of moisture-sensitive floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness	48 hours

CSI Division Classifications

Cast Underlayment	03 54 00

Packaging

Size
Bag: 50 lbs. (22.7 kg)

Approximate Coverage*

per 50 lbs. (22.7 kg)

Thickness	Coverage
1/4" (6 mm)	24 sq. ft. (2.23 m^2)
1/2" (12 mm)	12 sq. ft. (1.11 m^2)

3/4" (19 mm)	9 sq. ft. (0.84 m^2)
1" (2.5 cm)	6 sq. ft. (0.56 m^2)

** Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions, type of equipment, thickness applied, and application methods used.*

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

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