



**North American**  
**ADHESIVES®**

**NA 420**

# LP Leveler

**Low-Preparation, Self-Leveling Underlayment**



## PRODUCT DESCRIPTION

NA 420 LP Leveler is a low-preparation, self-leveling, calcium-aluminate-based underlayment and repair mix for interior concrete and engineer-approved floors. Its unique formulation allows for direct application on substrates that are clean, securely bonded and properly primed. NA 420 LP Leveler has high strength and is abrasion-resistant, and is able to accept tile and stone 24 hours after installation and moisture-sensitive floor coverings after 2 to 3 days. NA 420 LP Leveler has a compressive strength of greater than 3,500 psi (24.1 MPa) after 28 days. NA 420 LP Leveler is quite fluid and, once mixed, can be easily installed from featheredge to 1" (2.5 cm) in a single lift.

## USES

- For leveling, smoothing and repairing of interior residential and commercial floors before the installation of flooring systems and coverings
- For interior residential (rental apartments, condominiums and homes)
- For interior commercial (office buildings, hotel rooms/hallways, restaurants and cafeterias)
- For interior heavy commercial (hotel lobbies, convention centers, airports, shopping malls, grocery stores and department stores)
- For interior institutional (hospitals, schools, universities, libraries and government buildings)
- For use over radiant-heated floors, or to encapsulate hydronic or electric radiant-heated floors

## SUBSTRATE REQUIREMENTS

- All substrates must be properly prepared and structurally sound, stable, solid and dry.
- Concrete surfaces must be clean and free of any substance that could interfere with the bond of the installation material, including dust, dirt, paint, tar, asphalt, wax, oil, grease, concrete sealers, curing compounds, form release agents, laitance, loosely bonded toppings, foreign substances and adhesive residues.
- For concrete substrates, fill in deep areas, holes and cracks with an appropriate patching compound or screed. Otherwise, a fluid self-leveler may leak through to a floor below or into unwanted cavities.
- For plywood substrates, fill joints with an acrylic-based caulking compound to prevent NA 420 LP Leveler from leaking into a floor below.
- All substrates must be primed with an appropriate North American Adhesives (NAA) primer — such as NA 310 Self-Leveler Primer or NA 240 Primer Grip™ — before applying a self-leveler.

## Tile Council of North America (TCNA) Statement on Deflection Criteria

Floor systems, including the framing system and subfloor panels, over which tile will be installed shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications, or applicable building codes.

The owner should communicate in writing to the project design professional and general contractor the intended use of the tile installation, in order to enable the project design professional and general contractor to make necessary allowances for the expected live load, concentrated loads, impact loads, and dead loads including weight of the tile and setting bed.

The tile installer shall not be responsible for any floor framing or subfloor installation not compliant with applicable building codes, unless the tile installer or tile contractor designs and installs the floor framing or subfloor.

Consult Technical Services for installation recommendations regarding substrates and conditions not listed.

## SUITABLE SUBSTRATES

- Sound, dimensionally stable, fully cured concrete at least 28 days old and free from hydrostatic pressure
- Well-bonded and dimensionally stable ceramic, porcelain and quarry tile; natural stone; vinyl composition tile (VCT); cement; cement and epoxy terrazzo; and epoxy-based moisture barriers
- Properly installed cement backer units
- Durable, sound, stable and fully cured cement-based mortar beds
- Engineer-approved plywood or oriented strand board (OSB) subfloors in accordance with the most recent edition of the TCNA's F185 specification. Before a NAA underlayment is applied over plywood flooring, ASTM C847 specifications for finished flooring, load, use and/or deflection may require a synthetic lath or an appropriate diamond mesh on top of the primed surface.
- Existing 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 (refer to NAA Technical Bulletin "Gypsum-Based Floors and Walls: Which NAA Products Can Be Applied?" at [www.na-adhesives.com](http://www.na-adhesives.com)).



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### LIMITATIONS

- Not for use in exterior applications
- Do not mix with other self-leveling underlayments.
- Do not install over flooring products, over adhesives or over substrates containing asbestos.
- Do not use as a final wear surface. *NA 420 LP Leveler* must be covered with a finished floor system.
- Install *NA 420 LP Leveler* in temperatures between 50°F and 85°F (10°C and 29°C). If the product must be installed in temperatures above 85°F (29°C), follow American Concrete Institute (ACI) hot-weather application guidelines to ensure a successful installation.
- Do not install over moving control joints (with active cracks) or over expansion joints.
- Do not install *NA 420 LP Leveler* over sheet vinyl or self-stick vinyl tile; luxury vinyl tile (LVT) or luxury vinyl plank (LVP); glue-down wood flooring; particleboard; hardboard (Masonite); Luan panels; crack-isolation or sound-control membranes; gypsum-based patching materials; or any other nondimensionally stable 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 install over standing water.
- Do not use in areas subjected to prolonged exposure to moisture. Contact Technical Services 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 *NA 420 LP Leveler* is installed. Contact Technical Services for recommendations regarding moisture mitigation.

### MIXING

Before product use, take appropriate safety precautions. Consult the Safety Data Sheet for safe-handling instructions.

#### General mixing

1. Mix water and *NA 420 LP Leveler* powder at a mixing ratio of 5 to 5.3 U.S. qts. (4.73 to 5.02 L) of water per 50-lb. (22.7-kg) bag of powder.
2. Measure and pour the required amount of cool, clean potable water for the number of bags to be mixed into a clean mixing vessel (mixing barrel or plastic pail measuring 5 U.S. gals. [18.9 L]). For best results, the water temperature should be at about room temperature (70°F [21°C]). The mixing ratio must remain consistent; do not overwater the *NA 420 LP Leveler* material.
3. Slowly add the *NA 420 LP Leveler* powder into the pre-measured water. Use a high-speed drill and an oval paddle mixer to mix the *NA 420 LP Leveler* to a homogenous, lump-free consistency. Continue to mix accordingly 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.

#### Pump mixing

1. *NA 420 LP Leveler* can be mechanically mixed with a continuous mixer and pump (and at least 140 feet [42.7 m] of hose), or with a batch mixer and pump (and at least 110 feet [33.5 m] of hose). Mix at a ratio of 5 to 5.3 U.S. qts. (4.73 to 5.02 L) of water per 50-lb. (22.7-kg) bag of powder. Periodic cleaning of pumping equipment may be required per the manufacturer's instructions. Use a mesh screen "sock" at the end of the hose to catch any foreign material that may have fallen into the hopper during mixing. To ensure a suitable mix and flow, test the mixed material from the pump hose's end in a small test area before general application.

### APPLICATION

1. Concrete substrates and ambient room temperatures should be maintained between 50°F and 85°F (10°C and 29°C) during application, as well as for 72 hours 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 areas from direct sunlight.
3. Quickly pour or pump *NA 420 LP Leveler* onto the properly prepared and primed surface in a ribbon pattern. Set the width of the pour at a distance that is ideal for maintaining a wet edge throughout placement. If a wet edge cannot be maintained, reduce the width of the pour. 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 the *NA 420 LP Leveler*, 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.
5. If applying a second coat of *NA 420 LP Leveler*, wait 24 hours after the first pour to use an appropriate NAA primer.

### CURING

- *NA 420 LP Leveler* is self-curing; do not use a damp-curing method, or curing and sealing compounds.
- Cool-weather conditions may extend cure and set times. Warmer weather conditions may accelerate working, cure and set times.

### CLEANUP

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

### PROTECTION

- Protect *NA 420 LP Leveler* 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 *NA 420 LP Leveler* is completely cured and final flooring has been installed.
- Do not expose *NA 420 LP Leveler* to rolling dynamic loads, such as fork lifts or scissor lifts, for at least 72 hours after installation.



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Product Characteristics	
Color	Gray
Packaging	Film bag: 50 lbs. (22.7 kg)
Physical state	Powder
Single-lift application range	1/8" to 1" (3 mm to 2.5 cm)
Density when cured	About 128 lbs. per cu. ft. (2.06 kg per L)
pH	11
Pot life	15 minutes
Flow time	Up to 15 minutes
Time before allowing foot traffic	2 to 3 hours
Drying time before installing non-moisture-sensitive floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness*	24 hours
Drying time before installing moisture-sensitive (carpet, vinyl and wood flooring) floor coverings at 70°F (21°C) at 1" (2.5 cm) thickness*	2 to 3 days
VOC content	0 g per L
Shelf life	1 year in original bag at 73°F (23°C) and 50% relative humidity

\* Note that shorter drying times may be obtained with thinner applications.

Laboratory Tests	Results
Compressive strength – ASTM C109 Modified	
7 days	> 3,000 psi (20.7 MPa)
28 days	> 3,500 psi (24.1 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)	
28 days	> 750 psi (5.17 MPa)
Pull-out strength – ASTM C1583	
28 days	> 505 psi (3.48 MPa)

Approximate Coverage** per 50 lbs. (22,7 kg)	
Thickness	Coverage
1/4" (6 mm)	24 sq. ft. (2.23 m <sup>2</sup> )
1/2" (12 mm)	12 sq. ft. (1.11 m <sup>2</sup> )
3/4" (19 mm)	9 sq. ft. (0.83 m <sup>2</sup> )
1" (2.5 cm)	6 sq. ft. (0.56 m <sup>2</sup> )

\*\* 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.

CSI Division Classification	
Cast Underlayment	03 54 00



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Technical Services: 1-800-637-7753

Refer to the Safety Data Sheet for specific data related to health and safety as well as product handling. For the most current product data and warranty information, visit [www.na-adhesives.com](http://www.na-adhesives.com).

For information on sustainability and transparency, as well as product certification programs, contact Technical Services at 1-800-637-7753.

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## LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in effect at the time of the NAA product installation. For the most up-to-date TDS and warranty information, visit our Website at [www.na-adhesives.com](http://www.na-adhesives.com). **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED NAA WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**