

NA 3100

Floor Set™

Floor Tile Mortar



North American
ADHESIVES®



PRODUCT DESCRIPTION

NA 3100 Floor Set is an economical thin-set mortar that, when mixed with water, is for setting ceramic tile, quarry tile and pavers over indoor residential concrete floors. When mixed with *NA 3000* latex additive, *NA 3100 Floor Set* can also be used for setting porcelain, marble, slate and granite in indoor or outdoor residential and light commercial floors, even with freeze/thaw conditions.

USES

- For setting ceramic tile, quarry tile, pavers and Saltillo tiles on floors when mixed with water
- For setting all the above plus porcelain tile, and most types of marble, granite and natural stone on floors when mixed with *NA 3000* additive instead of water
- For residential indoor and outdoor floor installations when mixed with water
- For residential and commercial indoor and outdoor floor installations when mixed with *NA 3000* additive instead of water

SUBSTRATE REQUIREMENTS

Substrates must be in accordance with ANSI A108.5 current standards and recommendations. All supporting surfaces must be structurally sound. The surface area that will receive tile must be dry, clean and free of dust, oil, grease, tar, paint, wax, curing agents, primers, sealers, release agents, existing adhesives and any other substance that can weaken the adhesive's bond to the substrate. If the surface contains these substances, they must be mechanically removed.

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 should be in conformance with the IRC [International Residential Code] for residential applications, the

IBC [International Building Code] for commercial applications, or applicable building codes.

Note: 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 the 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 (properly prepared)

When mixed with water

- Fully cured concrete (cured at least 28 days)
- Cement mortar beds and leveling coats
- Masonry block and brick

When mixed with *NA 3000* additive

- All the substrates listed above
- Cement backer units – see manufacturer's installation guidelines
- APA and CANPLY Group 1 exterior-grade plywood (interior, residential and light commercial in dry conditions only)
- See "Surface Preparation Requirements" document for North American Adhesives (NAA) at www.na-adhesives.com.

NA 3100 Floor Set™

LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Not recommended for:
 - Application over presswood, particleboard, chipboard, oriented strand board (OSB), hardwood flooring, Masonite, Lauan, plastic laminate surfaces, vinyl composition tile (VCT), substrates containing asbestos, cutback adhesive residue, metal or dimensionally unstable materials
 - Setting glass tile or moisture-sensitive stone (green marble, some limestones and granites), agglomerate tiles or resin-backed tiles. Instead, use a suitable epoxy or urethane adhesive.
 - Use in areas of prolonged water immersion (swimming pools, spas, steam rooms, gang showers, hot tubs, fountains)
- Use a typical notched trowel (see "Approximate Coverage" chart) to achieve proper mortar contact on the back of the tiles (80% minimum for interior applications, and 95% minimum for exterior and commercial applications).
- Do not spread more material than can be tiled over before the ridges skin over.
- If using *NA 3000* additive, do not dilute with any other liquids.
- For light-colored and translucent natural stone, a white mortar is recommended.
- This product has about 2 hours of working time after mixing.
- This product is not for areas subject to severe freeze/thaw conditions.

HEALTH AND SAFETY

Consult the (Material) Safety Data Sheet for safe-handling instructions.

MIXING

1. Into a clean mixing container, pour about 6 U.S. qts. (5,68 L) of clean potable water or 2 U.S. gals. (7,57 L) of *NA 3000* additive. Gradually add 50 lbs. (22,7 kg) of powder while slowly mixing.
2. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-blade mixer or double-box mixer. Mix thoroughly for about 3 minutes and until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
3. Let the mixture stand ("slake") for 5 minutes.
4. Remix for 1 minute.

5. If the mixture becomes heavy or stiff, remix without adding more liquid or powder.

APPLICATION

1. Choose a typical notched trowel (see "Approximate Coverage" chart) with sufficient depth to achieve more than 80% mortar contact with both the tile and substrate for all interior applications, and more than 95% for exterior installations, commercial floor and wet applications. It may be necessary to back-butter the tile in order to meet these requirements. (Refer to ANSI A108.5 specifications and TCNA handbook guidelines.)
2. With pressure, apply a coat by using the trowel's flat side to key the mortar into the substrate.
3. Apply additional mortar, combing it in a single direction with the trowel's notched side.
4. Spread only as much mortar as can be tiled before the product skins over. Open time can vary with jobsite conditions.
5. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage.
6. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).

MOVEMENT JOINTS

- Provide for movement joints where specified. Refer to the most current TCNA handbook for ceramic tile installation, Detail EJ-171.
- When necessary, cut tiles along both edges of the expansion joints. Do not allow the tile and mortar to overlap the joints.
- Protect tilework with metal strips (edge metal) along both edges of structural building expansion joints.
- Install the specified compressible backer rod and sealant into all expansion and control joints.

GROUTING

- Wait 24 hours before grouting with an appropriate NAA grout.

CLEANING

- Clean tools, tile and other surfaces with water while the mortar is fresh.

PROTECTION



- Provide for dry, heated storage on site and deliver materials at least 24 hours before tilework begins.
- Protect from foot traffic for 24 hours. Protect from heavy traffic for 7 days. Protect from frost and rain for 7 days.
- Because temperature and humidity (during and after the installation of tile) affect the final curing time, allow for extended periods of cure and protection when temperatures drop below 60°F (16°C) and/or when the relative humidity is higher than 70%.

Technical Quick Reference	
Product Characteristics at 73°F (23°C) and 50% relative humidity	
Colors	Gray; white
Packaging	
Bag: Gray, 50 lbs. (22,7 kg)	Product code #310050000
Bag: White, 50 lbs. (22,7 kg)	Product code #310050001
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Shelf life	1 year when stored in original sealed container at room temperature in a dry, heated area. Protect from moisture, freezing and excessive heat.
Open time*	15 to 20 minutes
Pot life*	> 2 hours
Time before grouting*	24 hours
Cleanup	With clean water while fresh

* *Open time, pot life and time before grouting vary based on jobsite conditions.*



ISO 13007 Classification when mixed with water	
Classification Code	Classification Requirement
C1 (cementitious, normal adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles

ANSI Specification when mixed with water		
Test Method	Specification Standard	Test Results
ANSI A118.1 – shear strength, impervious ceramic (porcelain) mosaics	> 150 psi (1,03 MPa) at 28 days	160 to 190 psi (1,10 to 1,31 MPa)
ANSI A118.1 – shear strength, glazed wall tile	> 250 psi (1,72 MPa) at 28 days	250 to 270 psi (1,72 to 1,86 MPa)
ANSI A118.1 – shear strength, quarry tile to quarry tile	> 100 psi (0,69 MPa) at 28 days	170 to 220 psi (1,17 to 1,52 MPa)

ISO 13007 Classification when mixed with <i>NA 3000</i> additive	
Classification Code	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
S1 (normal deformation of mortar)	≥ 0.1" (2,5 mm)

ANSI Specification when mixed with <i>NA 3000</i> additive		
Test Method	Specification Standard	Test Results
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1,38 MPa) at 28 days	200 to 280 psi (1,38 to 1,93 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2,07 MPa) at 28 days	300 to 550 psi (2,07 to 3,79 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1,03 MPa) at 28 days	250 to 380 psi (1,72 to 2,62 MPa)
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1,03 MPa) at 28 days	150 to 300 psi (1,03 to 2,07 MPa)

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Approximate Coverage* per 50 lbs. (22,7 kg)		
Typical Trowel		Coverage
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm)		75 to 90 sq. ft. (6,97 to 8,36 m ²)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm)		55 to 65 sq. ft. (5,11 to 6,04 m ²)

* Trowel dimensions are width/depth/space. Coverage shown is for estimating purposes only. Actual coverage depends on substrate profile and porosity, equipment used, thickness applied, temperature and humidity. To ensure appropriate contact, proper trowel selection is mandatory (see "Application" section).



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For the most current product data and warranty information, visit www.na-adhesives.com.



Statement of Responsibility

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **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.**