



North American
ADHESIVES®

NA 3650

Magna Floor™

Large-and-Heavy-Tile Mortar



PRODUCT DESCRIPTION

NA 3650 Magna Floor is a medium-bed, polymer-modified mortar for use under large-format and heavy tile and stone. It also works great under porcelain tile, heavy-ribbed-back tile, brick pavers, dimensional tile, quarry tile, Saltillo tile, marble, granite and natural stone.

FEATURES AND BENEFITS

- Nonslump for large-format and heavy tile and stone
- For thicker bond coats from 3/8" to 1/2" (10 to 12 mm)
- Smooth and creamy consistency makes it easy to apply
- Minimizes back-buttering

USES

- For residential and commercial projects
- For interior and most exterior settings
- For horizontal surfaces (floors, countertops)

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.

SUBSTRATE REQUIREMENTS

Substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion. See North American Adhesive's (NAA) "Surface Preparation Requirements – Tile & Stone" document in the "Customer Tools" section of the NAA Website at www.na-adhesives.com.

SUITABLE SUBSTRATES (properly prepared)

When mixed with water

- Concrete (cured at least 28 days)
- Cement mortar beds and leveling coats
- Cement backer units (CBUs) – see manufacturer's installation guidelines

When mixed with NA 3000 Mortar Additive

- Properly prepared and well-bonded ceramic and porcelain tile, quarry tile and pavers (interior and dry conditions only)
- Vinyl composition tile (VCT), cutback residue and non-cushioned sheet vinyl (interior only)
- APA and CANPLY Group 1 exterior-grade plywood (interior, residential and light commercial floors in dry conditions only)
- Waterproofing, crack-isolation and sound-reduction membranes such as NA 1740 Waterproof Coating and NA 1550 Crack-Isolation Membrane

LIMITATIONS

- Not recommended for:
 - Moisture-sensitive stone (green marble, some limestone and some granite), agglomerate tiles or resin-backed tiles. Instead, use suitable epoxy or urethane adhesives (see the respective Technical Data Sheet for details). For resin-backed tile, contact Technical Services.
 - Installations subjected to prolonged water immersion (e.g., pools and spas).

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- Dimensionally unstable substrates such as hardwood flooring, oriented strand board (OSB), substrates containing asbestos, or metal. See the “Suitable Substrates” section.
- Where the substrate deflection exceeds $L/360$ under live or dead loads.
- Use with *NA 3000* Mortar Additive for areas subject to severe freeze/thaw conditions.
- To use directly over gypsum-based patching and leveling substrates, apply a suitable primer/sealer before use.
- Medium-bed mortars are not designed to correct uneven floors. Substrates must be flat and level before the installation of large-format tile.
- Installations over nonporous surfaces when mixed as required with *NA 3000* Mortar Additive may require extended setting/curing times.
- Use only at temperatures between 40°F and 95°F (4°C and 35°C).

MIXING

Consult the Safety Data Sheet for safe-handling instructions.

1. Into a clean mixing container, pour about 6.5 to 7 U.S. qts. (6,15 to 6,62 L) of clean potable water, or about 2 U.S. gals. (7,57 L) of undiluted *NA 3000* Mortar Additive acrylic additive.
2. Gradually add 50 lbs. (22,7 kg) of *NA 3650 Magna Floor* powder while slowly mixing.
3. Use a low-speed mixing drill (about 300 rpm), with an angled cross-blade mixer or double-box mixer. Mix thoroughly until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
4. Let the mixture stand (“slake”) for 5 to 10 minutes.
5. Remix.
6. If the mixture becomes heavy or stiff, remix without adding more liquid or powder.

APPLICATION

1. Choose a typical notched trowel (see the “Approximate Coverage” chart) with sufficient depth to achieve more than 80% mortar contact to 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 tiles in order to reach 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 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).

EXPANSION AND CONTROL JOINTS

- Provide for expansion and control joints as specified per TCNA Detail EJ171, or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover any expansion joints with mortar.

CLEANUP

- Clean tools and the tile surface while the mortar is fresh.

PROTECTION

- Do not disturb, allow light traffic or grout tiles for at least 24 hours.
- During installation and for at least 21 days after completion, protect from weather and freezing, and do not immerse in water.
- Protect from general traffic for at least 72 hours and heavy traffic for at least 7 days after installation.



Product Characteristics	
at 73°F (23°C) and 50% relative humidity	
Packaging	
Bag: 50 lbs. (22,7 kg), white	Product code #2183723
Bag: 50 lbs. (22,7 kg), gray	Product code #2183823
Shelf life	1 year in a dry place in original, unopened bag
Open time*	30 minutes
Pot life*	> 2 hours
Time before grouting*	24 hours
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Cleanup	With clean water while fresh

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

ISO 13007 Classification	
Classification Code	Classification Requirement
C2 (cementitious, improved 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 A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1,38 MPa) at 28 days	250 to 305 psi (1,72 to 2,10 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2,07 MPa) at 28 days	320 to 435 psi (2,21 to 3 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1,03 MPa) at 28 days	365 to 505 psi (2,52 to 3,48 MPa)

ANSI Specification (when mixed with <i>NA 3000</i> Mortar Additive)		
Test Method	Specification Standard	Test Results
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1,03 MPa) at 28 days	150 to 180 psi (1,03 to 1,24 MPa)

Industry Standards and Approvals	
LEED v3 Points Contribution	LEED Points
MR Credit 5, Regional Materials**	Up to 2 points
IEQ Credit 4.1, Low-Emitting Materials – Adhesives & Sealants	1 point
IEQ Credit 4.3, Low-Emitting Materials – Flooring Systems	1 point

** Using this product may help contribute to LEED certification of projects in the categories shown above. Points are awarded based on contributions of all project materials.

Approximate Coverage*** per 50 lbs. (22,7 kg)	
Typical Trowels	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)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm) 	38 to 45 sq. ft. (3,53 to 4,18 m ²)
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm) 	25 to 30 sq. ft. (2,32 to 2,79 m ²)

*** Trowel dimensions are width/depth/space. Actual coverage will vary according to substrate profile and tile type.

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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.**