



North American
ADHESIVES®

NA 3800

Magna Flex™

Premium, Non-Sag, Large Tile and Stone Mortar



PRODUCT DESCRIPTION

NA 3800 Magna Flex is a premium, non-sag, medium-bed mortar that is ideal for installing large-format tile and stone on interior/exterior floors, walls and countertops. This mortar has a high content of unique dry polymer, which provides an excellent bond between the substrate and tile or stone.

FEATURES AND BENEFITS

- Polymer-enriched for high performance and deformability
- Non-sag formula for large-format tile and stone in wall applications
- Nonslump for large-format and heavy tile and stone in floor applications
- For thicker bond coats from 3/32" to 1/2" (2.5 to 12 mm)
- Smooth and creamy consistency makes *NA 3800 Magna Flex* easy to apply.

INDUSTRY STANDARDS

- ISO 13007: Classification C2TES1P1
- ANSI: Exceeds ANSI A118.4TE, ANSI A118.11 and A118.15TE requirements

USES

- For interior/exterior residential and commercial installations on floors and walls in dry and wet areas
- For installation of ceramic and porcelain tile; cultured stone; quarry tile; pavers; Saltillo tile; and most types of marble, granite and natural stone. *NA 3800 Magna Flex* can also be used in thin-set applications to install small-format tile and stone.
- For interior/exterior submerged applications such as pools, fountains and water features

SUBSTRATE REQUIREMENTS

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.
- Substrates to receive thin porcelain tiles must be perfectly flat.

Tile Council of North America (TCNA) Maximum Allowable Deflection for Floor Systems and Substrates

Floor systems, whether wood framed or concrete, over which the tile will be installed using the appropriate TCNA method, according to the Floor Tiling Installation Guide, 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 uses of the tile installation, including in-service loads or information to allow a project design professional to calculate such. ... The tile contractor shall not be responsible for problems resulting from any structural subfloor installation not compliant with applicable building codes, unless structural subfloor was designed and installed by tile contractor, nor for problems from overloading.

Please reference the most current version of the TCNA Handbook for more complete substrate requirements.

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

SUITABLE SUBSTRATES (properly prepared)

- Concrete (cured for at least 28 days)
- Masonry cement block, brick, cement mortar beds, render coats and leveling coats
- Cement backer units (CBUs) – see manufacturer's installation guidelines
- Gypsum wallboard and plaster – interior walls in dry areas only (priming may be required)
- APA Group 1 and CANPLY 0121 exterior-grade plywood (interior, residential and light commercial floors and countertops in dry conditions only)



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- Vinyl composition tile (VCT) and cutback residue (interior installations)
- Existing ceramic and porcelain tile, quarry tile and pavers (interior and dry conditions only)
- North American Adhesives (NAA) waterproofing, crack-isolation, sound-reduction and uncoupling membranes

LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Do not use for moisture-sensitive stone (green marble, some limestone and granite), agglomerate tiles, cultured marble or resin-backed tiles. Instead, use suitable epoxy or urethane adhesives. See the respective Technical Data Sheets for more information.
- Do not use over dimensionally unstable substrates such as hardwood flooring, oriented strand board (OSB), substrates containing asbestos, or metal.
- To use directly over gypsum-based patching or leveling substrates, apply a suitable primer/sealer before use.
- Do not use for transparent or translucent glass tile.
- For light-colored and translucent natural stone, a white mortar is recommended.
- Consult building code requirements for use on exterior commercial building facades.
- Installations of tile over nonporous surfaces, such as waterproofing membranes and existing tile, may require extended setting/curing times. Dimensionally weak stone (limestone, travertine) is limited to thin-set applications only.

MIXING

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

1. Pour clean, potable water into a clean mixing container.
 - For non-sag/nonslump applications: Use 6.5 to 7.5 U.S. qts. (6.15 to 7.10 L) of water.
 - Over NAA uncoupling, waterproofing, crack-isolation and sound-reduction membranes: Use 7.5 to 8 U.S. qts. (7.10 to 7.57 L) of water.
2. Gradually add 50 lbs. (22.7 kg) of *NA 3800 Magna Flex* powder while slowly mixing.
3. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-

blade mixer or auger mixer. Mix thoroughly until the mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.

4. Let the mixture stand (“slake”) for 5 minutes.
5. Remix.
6. If the mixture becomes heavy or stiff, remix it without adding more liquid.

APPLICATION

1. Choose a notched trowel (see the “Approximate Coverage” chart) with sufficient depth to achieve greater than 85% mortar contact to both the tile and substrate for all interior applications, and greater 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 parallel to the tile’s shortest dimension with the trowel’s notched side. If thin tile is being installed, it should be placed so that the troweled ridges on its back are oriented in the same parallel direction as the trowel ridges on the substrate.
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 the trowel lines, to collapse the mortar ridges and 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 Method EJ171 or TTMAC Specification Guide 09 30 00, Detail 301MJ. Do not cover expansion joints with mortar.

CLEANUP

- Clean tools and tile while the mortar is fresh, using only water.

PROTECTION

- Do not disturb the floor installation, allow light traffic or grout any tiles for at least 24 to 48 hours.

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- Protect the floor installation from general traffic for at least 72 hours and from heavy traffic for at least 7 days.
- Protect the floor installation from rain for 72 hours and from freezing for 21 days.
- Cure walls and floors for 28 days before water immersion.

Note: When working in cold temperatures, protect tilework for an extended time for this dry-set mortar to cure before grouting and/or allowing traffic.

Product Characteristics	
at 73°F (23°C) and 50% relative humidity	
Colors	Gray, white
Packaging	Bag: 50 lbs. (22.7 kg)
VOCs (Rule #1168 of California's SCAQMD)	0 g per L
Shelf life	1 year when stored in original, unopened packaging
Open time*	30 to 35 minutes
Pot life*	4 hours
Time before grouting walls*	8 to 16 hours
Time before grouting floors*	24 to 48 hours

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

ISO 13007 Classification		
Classification Code	Classification Requirement	Test Characteristic
C2 (cementitious, improved adhesive)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles	Using porcelain tile
T (vertical slip resistance)	≤ 0.019" (0.5 mm)	Using porcelain tile
E (extended open time)	≥ 72.5 psi (0.5 MPa) after 30 minutes	Using glazed ceramic wall tile
S1 (normal deformation of mortar)	≥ 0.1" (2.5 mm)	-----
P1 (normal adhesion to plywood)	≥ 72.5 psi (0.5 MPa)	Using porcelain tile

ANSI Specification**		
Test Method	Specification Standard	Test Results
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa) at 28 days	170 to 310 psi (1.17 to 2.14 MPa)
ANSI A118.15E – extended open time	≥ 72.5 psi (0.5 MPa) at 30 minutes	Pass
ANSI A118.15 – shear strength, impervious ceramic (porcelain) mosaics	> 400 psi (2.76 MPa) at 28 days	Pass
ANSI A118.15 – shear strength, glazed wall tile	> 450 psi (3.10 MPa) at 7 days	570 to 780 psi (3.93 to 5.38 MPa)
ANSI A118.15 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	310 to 450 psi (2.14 to 3.10 MPa)
ANSI A118.15T – sag on vertical surfaces	< 0.02" (0.5 mm) at 20 minutes	Pass

** Anything that meets A118.15 by definition exceeds A118.4.



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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), square-notch		85 to 95 sq. ft. (7.90 to 8.83 m ²)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch		65 to 75 sq. ft. (6.04 to 6.97 m ²)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm), square-notch		40 to 50 sq. ft. (3.72 to 4.65 m ²)
3/4" x 9/16" x 3/8" (19 x 14 x 10 mm), U-notch		35 to 40 sq. ft. (3.25 to 3.72 m ²)

* Coverage shown is for estimating purposes only. Actual coverage depends on substrate profile and porosity, equipment used, thickness applied, temperature and humidity.



MAPEI® Corporation
1144 East Newport Center Drive
Deerfield Beach, FL 33442

U.S. and Puerto Rico

Customer Service: 1-800-747-2722
Technical Services: 1-800-637-7753

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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.

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

PR: 5260 MKT: 18-2285

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. **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.**