

NA 3800

Magna Flex™

Premium Nonsag Large Tile and Stone Mortar



**North American
ADHESIVES®**



PRODUCT DESCRIPTION

NA 3800 Magna Flex is a premium, nonsag medium-bed mortar that is ideal for installing large-format tile and stone on interior/exterior floors, walls and countertops. *NA 3800 Magna Flex* can also be used in thin-set applications to install smaller-format tile and stone. This mortar has a high content of unique dry polymer, which provides excellent bond between the substrate and tile or stone.

USES

- For setting ceramic and porcelain tiles, cultured stone, quarry tiles, pavers, Saltillo tiles, and most types of marble, granite and natural stone
- For interior/exterior residential and commercial installations on floors and walls in dry and wet areas
- For interior/exterior submerged applications such as pools, fountains and water features
- Polymer-fortified for high performance and deformability
- Nonsag formula is ideal for installing large-format tile and stone on walls
- Nonslump formula is ideal for installing large-format tile and stone on floors to minimize lippage (uneven or mismatched edges between tiles)
- For use as a medium-bed mortar up to 3/4" (19 mm) thick for setting large-format and ungauged tile and stone
- For use as a thin-set mortar (3/32" to 1/4" [2,5 to 6 mm] thick) for setting small-format tile and stone
- Smooth, creamy consistency; easy to apply

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)

- Fully cured concrete (cured for at least 28 days)
- Cement backer units – see manufacturer's installation guidelines
- Cement mortar beds and leveling coats
- Masonry block and brick

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- Gypsum wallboard, properly primed (interior only)
- APA and CANPLY Group 1 exterior-grade plywood (interior, residential and light commercial in dry conditions only)
- North American Adhesives (NAA) waterproofing, crack-isolation and sound-reduction membranes over recommended substrates
- Properly prepared vinyl composition tile (VCT) and old, dry cutback adhesive residue (interior only)
- Properly prepared existing ceramic and porcelain tile, quarry tile and pavers (interior and dry conditions only)

See NAA's "Surface Preparation Requirements" document at www.na-adhesives.com.

LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Not recommended for:
 - Application over wood planking, presswood, particleboard, chipboard, oriented strand board (OSB), treated plywood, hardwood flooring, Masonite, Lauan, plastic laminate surfaces, fiberglass, poured epoxy floors, self-stick tile, non-cushioned sheet vinyl, substrates containing asbestos, metal or dimensionally unstable materials
 - Setting moisture-sensitive stone (green marble, some limestones and granites), agglomerate tiles, cultured marble or resin-backed tiles. Instead, use a suitable epoxy or urethane adhesive.
- To use directly over gypsum-based patching or leveling substrates, apply a suitable sealer before use.
- Do not spread more material than can be tiled over before the ridges skin over.
- For light-colored and translucent natural stone, a white mortar is recommended.
- This product has about 4 hours of working time after mixing.
- For areas subject to severe freeze/thaw conditions, mix *NA 3000* additive with an appropriate thin-set mortar.
- Consult local building code requirements for use on exterior commercial building facades (such as shopping malls, high-rise residential and office buildings).
- 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.

- Allow the tile or stone to cure for at least 28 days before the final installation is submerged in water.

HEALTH AND SAFETY

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

MIXING

1. Before starting, take appropriate safety precautions. See the (M)SDS for details.
2. Into a clean mixing container, pour about 6 to 6.5 U.S. qts. (5,68 to 6,15 L) of clean potable water. Gradually add 50 lbs. (22,7 kg) of powder while slowly mixing.
3. 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.
4. Let the mixture stand ("slake") for 5 minutes.
5. Remix for 2 minutes.
6. 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 the 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 expansion and control joints where specified. Refer to the most current TCNA handbook for ceramic tile installation, Detail EJ-171.
- When necessary, cut the 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 bead 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 mortar is fresh.

PROTECTION

- Provide for dry, heated storage on site and deliver materials at least 24 hours before tilework begins.
- Protect tilework from adverse weather for at least 21 days after the installation.
- Floors: Protect from foot traffic and wait 24 hours before grouting. Protect from heavy traffic for 7 days. Protect from frost and rain for 7 days.
- Walls: Wait 8 to 16 hours before grouting. Protect from impact, vibrations and heavy hammering on adjacent and opposite walls for at least 14 days after the installation.
- Because temperature and humidity (during and after the installation of the tile) affect the final curing time, allow for extended periods of curing 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) Bag: White, 50 lbs. (22,7 kg)	Product code #11250125 Product code #11350125
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*	30 to 35 minutes
Pot life*	4 hours
Time before grouting*	Wall joints: 8 to 16 hours Floor joints: 24 hours
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	Test Characteristic
C2 (cementitious, improved adhesion)	≥ 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 20 to 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

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ANSI Specification		
Test Method	Specification Standard	Test Results
ANSI A118.4 – impervious ceramic (porcelain) mosaics, shear strength	> 200 psi (1,38 MPa) at 28 days	310 to 450 psi (2,14 to 3,10 MPa)
ANSI A118.4 – glazed wall tile, shear strength	> 300 psi (2,07 MPa) at 28 days	570 to 780 psi (3,93 to 5,38 MPa)
ANSI A118.4 – quarry tile to quarry tile, shear strength	> 150 psi (1,03 MPa) at 28 days	310 to 450 psi (2,14 to 3,10 MPa)
ANSI A118.11 – quarry tile to plywood, shear strength	>150 psi (1,03 MPa) at 28 days	170 to 310 psi (1,17 to 2,14 MPa)

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)		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)		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)		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)		35 to 40 sq. ft. (3,25 to 3,72 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).

Industry Standards and Approvals	
LEED Points Contribution	LEED Points
MR Credit 5, Regional Materials**	Up to 2 points
IEQ Credit 3.2, Construction IAQ Management Plan – Before Occupancy	1 point
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.



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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.**