



**North American**  
**ADHESIVES®**

**NA 3220**

# Multi Flex Plus™

**Porcelain Tile Mortar**



## PRODUCT DESCRIPTION

NA 3220 Multi Flex Plus is a polymer-modified mortar for thin-set applications on most interior/exterior residential and commercial floors; interior/exterior residential walls; and interior commercial walls. NA 3220 Multi Flex Plus provides an excellent bond for ceramic, porcelain, quarry, pavers and most marble, granite and natural-stone tile installations.

## USES

- For setting most ceramic, ceramic mosaics, porcelain, quarry, paver and Saltillo tiles, and many types of marble, granite and natural stone
- For residential indoor and outdoor floor, wall and countertop installations
- For commercial indoor floor and wall, and outdoor floor installations
- Higher polymer content allows tile over existing tile installations.

## 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
- 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 only)
- All substrates must be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.

See NAA's "Surface Preparation Requirements" document at [www.na-adhesives.com](http://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 presswood, particleboard, chipboard, oriented strand board (OSB), hardwood flooring, Masonite, Lauan, plastic laminate surfaces, substrates containing asbestos, metal or dimensionally unstable materials

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- Setting moisture-sensitive stone (green marble, some limestones and granites), agglomerate tiles or resin-backed tiles. Instead, use a suitable epoxy or urethane adhesive.
- Setting glass tile
- Use in areas of prolonged water immersion (swimming pools, spas, steam rooms, gang showers, hot tubs, fountains)
- To use directly over gypsum-based patching or leveling substrates, apply suitable sealer before use.
- Use a typical notched trowel (see "Approximate Coverage" chart) to achieve proper mortar contact on the back of 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 ridges skin over.
- For light-colored and translucent natural stone, a white mortar is recommended.
- Product has about 2 hours of working time after mixing.
- For areas subject to severe freeze/thaw conditions, mix *NA 3000* additive with an appropriate thin-set mortar.

## MIXING

Consult the Safety Data Sheet for safe-handling instructions.

1. Into a clean mixing container, pour about 1.25 to 1.5 gals. (4,73 to 5,68 L) of clean potable water. 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 5 minutes and until mixture becomes a smooth, homogenous, lump-free paste. Avoid prolonged mixing.
3. Let mixture stand ("slake") for 10 minutes.
4. Remix for 2 minutes.
5. If 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 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 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 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 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 tiles along both edges of the expansion joints. Do not allow tile or 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 16 to 24 hours before grouting with an appropriate NAA grout.

## CLEANUP

- 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 installation.
- **Floors:** Protect from foot traffic for 24 hours. Protect from heavy traffic for 7 days. Protect from frost and rain for 7 days.
- **Walls:** Protect from impact, vibrations and heavy hammering on adjacent and opposite walls for at least 14 days after installation.
- 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%.



<b>Product Characteristics</b> at 73°F (23°C) and 50% relative humidity	
Colors	Gray; white
Packaging	Product code #322050000 Product code #322050001
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 minutes
Pot life*	> 2 hours
Time before grouting*	16 to 24 hours
Cleanup	With clean water while fresh



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

<b>ISO 13007 Classification</b>	
Classification Code	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
E (extended open time)	≥ 72.5 psi (0,5 MPa) after 30 minutes
P1 (normal adhesion to plywood)	≥ 72.5 psi (0,5 MPa)

<b>ANSI Specification</b>		
Test Method	Specification Standard	Test Results
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1,38 MPa) at 28 days	330 to 425 psi (2,28 to 2,93 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2,07 MPa) at 28 days	400 to 600 psi (2,76 to 4,14 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1,03 MPa) at 28 days	350 to 475 psi (2,41 to 3,28 MPa)
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1,03 MPa) at 28 days	150 to 200 psi (1,03 to 1,38 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), square-notched		75 to 90 sq. ft. (6,97 to 8,36 m <sup>2</sup> )
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notched		55 to 65 sq. ft. (5,11 to 6,04 m <sup>2</sup> )

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

Industry Standards and Approvals	
LEED v3 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](http://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.**