

NA 3500

Glass Set™

Polymer Thin-Set Mortar for Glass and Mosaic Tile



North American
ADHESIVES®



PRODUCT DESCRIPTION

NA 3500 Glass Set is a premium-grade, polymer-fortified, multi-purpose thin-set mortar for installing glass tile, porcelain, ceramic and stone mosaics and is also ideal for installing light-colored translucent natural stone. When mixed with *NA 3000* additive (instead of water), *NA 3500 Glass Set* provides greater bond strength and can be used for submerged installations. *NA 3500 Glass Set's* bright white property enhances the color of translucent or transparent glass tile better than ordinary white thin-set mortars.

USES

When mixed with water:

- For most interior/exterior residential installations on floors and walls, most interior/exterior commercial installations on floors and most interior commercial installations on walls
- For setting ceramic and porcelain tile, quarry tile, glass tile, pavers and Saltillo tile and most types of marble, granite and natural stone

When mixed with *NA 3000* additive instead of water:

- For setting all the above, most commercial installations on walls and installations subject to water immersion

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 for at least 28 days)
- Cement mortar beds and leveling coats
- Masonry block and brick
- Cement backer units – see manufacturer's installation guidelines
- Gypsum wallboard and plaster, properly primed (interior walls only in dry areas)

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When mixed with NA 3000 additive:

- All the substrates listed above
- APA and CANPLY Group 1 exterior-grade plywood (interior, residential and light commercial in dry conditions only)
- Properly prepared existing ceramic and porcelain tile, cement terrazzo, quarry tile and pavers (interior and dry conditions only)
- North American Adhesives (NAA) waterproofing, crack-isolation and sound-reduction sheet membranes
- See NAA's "Surface Preparation Requirements" document at www.na-adhesives.com.

Note: Glass tile may not be suitable over some of the above substrates (such as plywood). Consult the recommendations of the TCNA and the glass tile manufacturer regarding glass tile installations over these substrates or membranes.

LIMITATIONS

- Consult the glass tile manufacturer's specifications to verify product suitability for specific installations and installation procedures.
- 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, metal or dimensionally unstable materials.
 - Setting moisture-sensitive stone (green marble, some limestones and granites), agglomerate tiles or resin-backed tiles. Instead, use a suitable epoxy or urethane adhesive.
- To use directly over gypsum-based patching or leveling substrates, apply suitable sealer before use.
- Installations of tile over nonporous surfaces, such as waterproofing membranes and existing tile, may require extended setting/curing times.
- Do not spread more material than can be tiled over before ridges skin over.
- Do not use for setting glass tile larger than 6" x 6" (15 x 15 cm).
- If using NA 3000 additive, do not dilute with any other liquids.
- For light-colored and translucent natural stone, a white mortar is recommended.
- Product has about 2 hours of working time after mixing.
- If glass tile doesn't meet ANSI 137.2 (Specifications for Glass Tile), check with glass tile manufacturer for installation recommendations. Do not use for glass tile with a decorative coating on the backing.

When mixed with water:

- Do not use in areas of prolonged water immersion (swimming pools, spas, steam rooms, gang showers, hot tubs, fountains).
- Not recommended for areas subject to severe freeze/thaw conditions. Instead, mix NA 3500 Glass Set with NA 3000 additive instead of water.

When mixed with NA 3000 additive:

- Consult local building code requirements for use on exterior commercial building facades.

HEALTH AND SAFETY

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

MIXING

1. Note: Choose all appropriate safety equipment before use. See (M)SDS for details.

1.1 For 10 lbs. (4,54 kg) of NA 3500 Glass Set:

Into a clean mixing container, pour about 1.5 to 1.7 U.S. qts. (1,42 to 1,61 L) of clean potable water or NA 3000 additive. Gradually add 10 lbs. (4,54 kg) of powder while slowly mixing.

1.2 For 43 lbs. (19,5 kg) of NA 3500 Glass Set:

Into a clean mixing container, pour about 1.8 U.S. gals. (6,81 L) of clean potable water or NA 3000 additive. Gradually add 43 lbs. (19,5 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 "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 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. For glass tile and mosaics, knock down the trowel ridges to ensure that they do not show through.



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. Follow immediately with a proper beating-in of the tile to flatten ridges or notches. For the installation of sheet-mounted glass and marble mosaics, after using light pressure to establish contact with the fresh mortar, lightly tap the tile with a rubber-faced beating block and mallet.
7. For face-mounted tile, check manufacturer's instructions for proper application and removal of face mounting.
8. 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). Remove all mortar from glass tile face.

GROUTING

- Wait 24 to 48 hours before grouting with an appropriate NAA grout.

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 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.

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 from foot traffic for 24 hours. Protect from heavy traffic for 7 days. Protect from frost and rain for 7 days.
- Glass tile requires at least 21 days of curing time after grouting before being submerged with water.
- Because temperature and humidity (during and after the installation of 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	
Color	White
Packaging	
Bag: 10 lbs. (4,54 kg)	Product code # 11310125
Bag: 43 lbs. (19,5 kg)	Product code # 11343125
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*	20 to 30 minutes
Pot life*	> 2 hours
Time before grouting*	24 to 48 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
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
T (vertical slip resistance)	≤ 0.019" (0,5 mm)
E (extended open time)	≥ 72.5 psi (0,5 MPa) after 20 to 30 minutes

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	210 to 280 psi (1,45 to 1,93 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2,07 MPa) at 28 days	425 to 640 psi (2,93 to 4,41 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1,03 MPa) at 28 days	255 to 425 psi (1,76 to 2,93 MPa)

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ISO 13007 Classification when mixed with NA 3000 additive	
Classification Code	Classification Requirement
C2 (cementitious, improved adhesion)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
T (vertical slip resistance)	≤ 0.019" (0,5 mm)
E (extended open time)	≥ 72.5 psi (0,5 MPa) after 20 to 30 minutes
S1 (normal deformation of mortar)	≥ 0.1" (2,5 mm)
P1 (normal adhesion to plywood)	≥ 72.5 psi (0,5 MPa)

ANSI Specification when mixed with NA 3000 additive		
Test Method	Specification Standard	Test Results
ANSI A118.4 – shear strength, impervious ceramic (porcelain) mosaics	> 200 psi (1,38 MPa) at 28 days	210 to 400 psi (1,38 to 2,76 MPa)
ANSI A118.4 – shear strength, glazed wall tile	> 300 psi (2,07 MPa) at 28 days	490 to 780 psi (3,38 to 5,38 MPa)
ANSI A118.4 – shear strength, quarry tile to quarry tile	> 150 psi (1,03 MPa) at 28 days	425 to 640 psi (2,90 to 4,41 MPa)
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1,03 MPa) at 28 days	150 to 250 psi (1,03 to 1,72 MPa)

Approximate Coverage* per 50 lbs. (22,7 kg)		
Typical Trowel	Coverage per 10 lbs. (4,54 kg)	Coverage per 43 lbs. (19,5 kg)
1/8" x 3/16" x 1/8" (3 x 4,5 x 3 mm) 	18 to 24 sq. ft. (1,67 to 2,23 m ²)	80 to 105 sq. ft. (7,43 to 9,75 m ²)
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) 	16 to 20 sq. ft. (1,49 to 1,86 m ²)	70 to 85 sq. ft. (6,50 to 7,90 m ²)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm) 	11 to 14 sq. ft. (1,02 to 1,30 m ²)	50 to 60 sq. ft. (4,65 to 5,57 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 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.**