

# MOVEMENT JOINTS

Every substrate presents unique challenges



## DISCUSSION

Movement joints are an integral part of any tile assembly. The various components of a tile assembly (tile, mortar, substrate, etc.) have unique physical characteristics that affect their behavior. Specifically, these components will expand and contract at different rates, according to each component's intrinsic physical properties, with changes in moisture, temperature, and loading (both dead and live loads). This differential expansion/contraction of attached components results in internal stresses. Furthermore, structures that restrain overall expansion of the tile field (walls, columns, etc.) cause stress buildup within the system. If the aforementioned movements are not accommodated through the use of movement joints in the tile field and at restraining structures, the resulting stresses can cause cracking of the grout and tile and delamination of the tile from the substrate. Thus, movement joints are an essential component of any durable tile assembly.

## SOLUTIONS

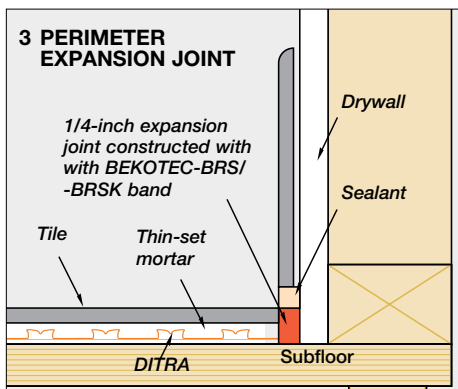
Movement joints must be incorporated within the tile field, at doorsills, and at transitions to walls and other restraining structures to allow movement of the assembly and prevent stresses that can damage the system. Schluter®-Systems' prefabricated movement joint profiles protect tile edges and prevent sound bridges and surface water penetration, resulting in a permanent, maintenance-free installation. The family of **Schluter®-DILEX** prefabricated movement profiles includes a variety of shapes, sizes, and materials to suit different applications. Please see Schluter®-Systems' Illustrated Price List and visit [www.schluter.com](http://www.schluter.com) for more detailed information on DILEX movement profiles.

## TECHNICAL NOTES

The Tile Council of North America (TCNA) and the Terrazzo, Tile, and Marble Association of Canada (TTMAC) provide guidelines (EJ171 and 301MJ, respectively) for the placement and construction of movement joints in and around the tile field. Schluter®-Systems accepts these guidelines. However, given the increased use of larger tiles, smaller grout joints, and lighter building materials, which are more susceptible to movement, Schluter®-Systems recommends that movement joints within the tile field be placed at more frequent intervals, as indicated below.

### Guidelines for the placement of movement joints

- Field size not to exceed 400 ft<sup>2</sup> (37.0 m<sup>2</sup>)
- Interior applications: 16' - 20' (4.9 m - 6.1 m) in each direction
- Interior areas exposed to direct sunlight, moisture, or heated floors: 12' - 16' (3.7 m - 4.9 m) in each direction
- Place around the perimeter of any size floor and/or against all restraining surfaces
- Fields should be as square as possible. The ratio between length and width should not exceed 1:1.5



## Typical movement joint applications

### Perimeter Joints

Perimeter joints are provided at the outer edges of any tile installation to accommodate movements attributable to changes in moisture, temperature, and loading. See figures 1, 2, and 3.

If Schluter®-DILEX corner movement profiles will not be used, Schluter®-Systems recommends the use of BEKOTEC-BRS/-BRSK edge strip or sill seal (a compressible polyethylene gasket used to seal the gap between foundations and sill plates) as a quality control measure when providing perimeter movement joints. The edge strip/sill seal band is placed against perimeter structures before any component of the tile assembly is installed, (e.g., Schluter®-DITRA, Schluter®-DITRA-XL, additional underlayments including self-leveling materials, mortar beds, etc. See figures 2 and 3). After the tile is installed and grouted, any excess edge strip/sill seal material is cut away, leaving a movement joint with uniform width that is void of any mortar, grout, or other restraining materials that would render the joint ineffectual.

### Surface Joints

Surface joints must be placed within the tiled surface regardless of substrate conditions. They provide for stress relief from movements in the tile field due to thermal and moisture expansion/contraction and loading. See figure 4.

### Expansion Joints

Expansion joints permit both horizontal and vertical differential movements attributable to thermal and moisture expansion/contraction by providing a complete separation for the full depth of the slab to allow for free movement between adjoining parts of a structure or abutting surfaces. They are typically placed at columns, walls, and any other restraining surfaces. Expansion joints must be continued through the tile covering.

DITRA and DITRA-XL are separated at expansion joints and the joint is continued through the tile covering using DILEX surface movement profiles. When DITRA and DITRA-XL are used as waterproofing, the abutted sections must be covered with Schluter®-KERDI-FLEX or Schluter®-KERDI-BAND.

### Cold Joints

Cold (construction) joints occur where two successive placements of concrete meet. True cold joints bond the new concrete to the old and do not allow movement. However, it takes extra care to accomplish this, so they are usually designed to act as expansion or control/contraction joints. Cold joints are treated in the same manner as expansion joints. See above.

### Control/Contraction Joints

Control/contraction joints are designed to induce controlled cracking caused by drying and chemical shrinkage at preselected locations. They are typically formed by saw cutting, tooling, or through the use of inserts. DITRA and DITRA-XL are not separated at control/contraction joints; however, surface movement joints must be provided in the tile covering in accordance with the aforementioned guidelines. See also Surface Joints.

### Structural or Seismic Joints

Regarding structural and seismic expansion joints, please contact Schluter®-Systems at 800-472-4588 (USA) or 800-667-8746 (Canada) for proper installation guidelines.

# INSTALLATION

## Schluter®-DITRA and Schluter®-DITRA-XL

### Preparation

- The substrate must be clean, even, and load bearing. Any leveling of the subfloor must be done prior to installing DITRA and DITRA-XL.
- For wood substrates, verify that panels are properly fastened. Tightly butted and/or tented plywood or OSB seams must be addressed prior to installing DITRA and DITRA-XL. If a plywood/OSB underlayment is to be installed, follow the Wood Underlayment guidelines on page 18.
- For vinyl substrates, ensure that the structure beneath is sound and adequate and that the vinyl is well adhered. Remove any wax and clean the surface. For vinyl over wood structures, nail off floor with ring shank flooring nails every 4" (102 mm) o.c. - fasteners must pass through entire thickness of assembly with minimal penetration into joists.
- For concrete substrates, remove any waxy or oily films and curing compounds (if present) by mechanical scarification. When bonding DITRA and DITRA-XL to particularly dry, porous concrete, the slab should be moistened to saturate the concrete and help prevent premature drying or skinning of the bond coat. Excess or standing surface water must be removed prior to installation.
- For gypsum substrates, residual moisture in gypsum screed must be 2.0% or less before installing DITRA and DITRA-XL. Follow gypsum manufacturer's directions for additional substrate preparation.

### Easy Step-by-Step Installation

A step-by-step installation video is available. E-mail us at [info@schluter.com](mailto:info@schluter.com) or call us at 800-472-4588 (USA) or 800-667-8746 (Canada). To see a video clip, go to [www.schluter.com](http://www.schluter.com).



Using a thin-set mortar that is suitable for the substrate, apply the thin-set mortar (**mixed to a fairly fluid consistency, but still able to hold a notch**).

- For DITRA use a 1/4" x 3/16" (6 mm x 5 mm) V-notched trowel, 5/16" x 5/16" (8 mm x 8 mm) V-notched trowel, or the DITRA trowel which features a 11/64" x 11/64" (4.5 mm x 4.5 mm) square-notched design.
- For DITRA-XL use a 1/4" x 1/4" (6 mm x 6 mm) square-notched trowel or the DITRA-XL trowel, which features a 1/4" x 1/4" (6 mm x 6 mm) square-notched design.



Apply DITRA or DITRA-XL to the floor, fleece side down. Solidly embed the matting into the bonding mortar using a float, screed trowel, or Schluter®-DITRA-ROLLER (please observe the open time of the bonding mortar).

When using the DITRA-ROLLER, place a weight (e.g., bag(s) of mortar/grout or box of tile) not to exceed 75 lbs on the DITRA-ROLLER shelf. Slowly move the roller from one end of the matting to the other, slightly overlapping successive passes.



Lift up a corner of the matting to check coverage. Proper installation results in full contact between the fleece webbing and the thin-set mortar. Simply abut end and side sections of adjacent sheets.

**Note:** Coverage may vary with mortar consistency, angle at which the trowel is held, substrate flatness, etc. If full coverage is not achieved, remove and reapply, making sure to verify proper mortar consistency and application.

#### ESTIMATED THIN-SET COVERAGE

**To bond DITRA to the substrate, using the DITRA trowel:** Use one 50 lb. (22.68 kg) bag of mortar per 150 ft<sup>2</sup> (10.7 m<sup>2</sup>).

**To bond DITRA-XL to the substrate, using the DITRA-XL trowel:** Use one 50 lb. (22.68 kg) bag of mortar per 100 ft<sup>2</sup> (9.3 m<sup>2</sup>).

**To bond the tile to the DITRA, using a 1/4" x 3/8" (6 mm x 10 mm) square- or U-notched trowel:** Use one 50 lb (22.68 kg) bag of mortar per 40 - 50 ft<sup>2</sup> (3.7 - 4.6 m<sup>2</sup>).

**To bond the tile to the DITRA-XL, using a 1/4" x 3/8" (6 mm x 10 mm) square- or U-notched trowel:** Use one 50 lb (22.68 kg) bag of mortar per 35 - 45 ft<sup>2</sup> (3.3 - 4.2 m<sup>2</sup>).

## Waterproofing

The following steps are required for waterproofing only:



At the joints, fill the cut-back cavities with Schluter SET®, Schluter ALL-SET®, Schluter FAST-SET®, or unmodified thin-set mortar, approximately 8" (203 mm) wide, centered over the joint.



Comb additional Schluter SET®, Schluter ALL-SET®, Schluter FAST-SET®, or unmodified thin-set mortar over the joint using a 1/4" x 3/16" (6 mm x 5 mm) V-notched trowel or the Schluter®-KERDI trowel, which features a 1/8" x 1/8" (3 mm x 3 mm) square-notched design. Using the flat side of the trowel, firmly press the 5" (127 mm)-wide Schluter®-KERDI-BAND into the mortar to ensure 100% coverage and to remove excess mortar and air pockets.



At all wall junctions, apply KERDI-BAND as described in steps 1-3, ensuring a minimum of 2" overlap on to DITRA/DITRA-XL.

### Notes

- KERDI-BAND must lap DITRA and DITRA-XL at seams and at floor/wall transitions by a minimum of 2" (50 mm) in order to maintain waterproof integrity.
- In some applications, the vertical section of the floor/wall transition will not accept a bond to unmodified thin-set mortar. Connections to such elements can be achieved using Schluter®-KERDI-FIX or suitable trowel-applied waterproofing materials, such as those that require atmospheric moisture to cure (e.g., urethane sealant).

## Tile Installation



Tile can be installed over DITRA and DITRA-XL immediately; no need to wait for the mortar to cure. Fill the cut-back cavities with Schluter SET®, Schluter ALL-SET®, Schluter FAST-SET®, or unmodified thin-set mortar and comb additional mortar over the matting using a trowel that is appropriate for the size of the tile. Be sure the trowel grooves in the thin-set are all going in the same direction, as shown in the photo above.



Solidly embed the tiles in the setting material, sliding the tile back and forth perpendicular to the tile ridges underneath. This will help collapse the mortar ridges and improve contact between the mortar and the tile. Make sure to observe the open time of the bonding mortar. If the mortar skins over prior to tile installation, remove and reapply.



Periodically remove and check a tile to ensure that full coverage is being attained.

### Note

- Coverage may vary with mortar consistency, angle at which the trowel is held, substrate flatness, etc. If full coverage is not achieved, remove and reapply, making sure to verify proper mortar consistency and application. For large-format tiles, e.g., 12" x 12" (305 mm x 305 mm) and larger, back-buttering the tiles with a skim coat of thin-set mortar is a useful way to help ensure proper coverage. The skim coat can fill in the concave area on the back of the tile (ceramic tiles are not perfectly flat) and improve contact with the mortar combed on the substrate.

# THIN-SET FACTS

## Discussion of thin-set mortars and Schluter®-DITRA installations

Schluter®-Systems offers thin-set mortars designed for use with Schluter® membranes and boards. All Schluter®-Systems' thin-set mortars, including the Schluter ALL-SET® and Schluter FAST-SET® modified varieties, can be used to set tile over Schluter®-DITRA, DITRA-HEAT, KERDI, KERDI-BOARD non absorptive substrates. If Schluter® thin-set mortars are not used, we require unmodified thin-set mortar when setting ceramic or porcelain tile over DITRA.

**QUESTION: Can ceramic tile, including porcelain tile, be set on DITRA with unmodified thin-set mortar?**

**ANSWER: YES. In fact, we recommend it. Here's why:**

Portland cement-based unmodified thin-set mortars are dependent on the presence of moisture for hydration in order to gain strength. Since DITRA is impervious, it does not deprive the mortar of its moisture. This allows the cement to properly hydrate, resulting in a strong, dense bond coat. In fact, after the mortar has reached final set (usually within 24 hours), unmodified thin-set mortars achieve higher strengths when cured in continually moist conditions.

**QUESTION: Can ceramic tile, including porcelain tile, be set on DITRA with latex-modified thin-set mortar?**

**ANSWER: No.**

Latex-modified mortars must dry for the polymers to coalesce and form a hard film in order to gain strength. When sandwiched between two impervious materials such as DITRA and ceramic tile, including porcelain tile, drying takes place very slowly through the open joints in the tile covering. [According to the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation, this drying period can fluctuate from 14 days to over 60 days, depending on the geographic location, the climatic conditions, etc.]. Therefore, extended cure times could be required before grouting if using modified thin-set mortars between DITRA and ceramic tile, including porcelain tile. If extended cure times were not observed, the results could be unpredictable.

**QUESTION: Can Schluter ALL-SET® and Schluter FAST-SET® modified thin-set mortars be used to set tile over Schluter boards and membranes?**

**ANSWER: Yes.**

All Schluter® thin-set mortars, including the Schluter ALL-SET® and Schluter FAST-SET® modified varieties can be used to set tile over DITRA, DITRA-HEAT, KERDI, KERDI-BOARD, etc. non absorptive substrates.

**QUESTION: How is this possible?**

**ANSWER: The key is predictability.**

Schluter Systems' modified thin-set mortars have been specifically formulated to set and gain strength in a timeframe that fits typical installation practice, even when sandwiched between Schluter® membranes or boards and porcelain tile. The proportions of cement, water-retention agents, polymers, and other components in the mixtures were balanced to ensure that extended dry times are not required. This was validated through both laboratory and practical testing. Now, the installer can select from either unmodified or modified thin-set mortar to install tiles within our systems according to his or her preference.

**QUESTION: Why did Schluter Systems change its position on thin-set mortar?**

**ANSWER: We haven't changed our position on thin-set mortar use within our systems.**

Developing our own setting materials has given us the ability to guarantee consistently positive results. And since we control the formulas, we can be sure no changes will be made that have a negative impact on setting times and strength gain in these environments.

**QUESTION: Does this mean I can use other manufacturers' modified thin-set mortars to install tile over Schluter boards and membranes?**

**ANSWER: No.**

Our position on thin-set mortar use within our systems in general has not changed. We have no control over the formulation of other manufacturers' products, and therefore, we cannot guarantee consistently positive results with their modified thin-set mortars.

**QUESTION: Can I still use other manufacturers' unmodified thin-set mortars to install tile over Schluter boards and membranes?**

**ANSWER: Yes.**

We still warrant the use of unmodified thin-set mortar meeting ANSI A118.1 to install tile within our systems because we have confidence in the performance of this product category. This is based on the science of cement hydration and years of positive testing and field experience.

Please note, if Schluter® thin-set mortars are used with Schluter membranes, an extended system warranty is available.

### ADDITIONAL NOTES

Pre-mixed thin-set mortars and mastics are not suitable for use in conjunction with DITRA and DITRA-XL.

Remember, the type of mortar used to apply DITRA depends on the type of substrate. The mortar must bond to the substrate and mechanically anchor the fleece on the underside of the DITRA. For example, bonding DITRA to wood requires latex-modified thin-set mortar. When bonding DITRA to particularly dry, porous concrete with unmodified thin-set mortar, the slab should be moistened to saturate the concrete and help prevent premature drying of the mortar. Excess or standing surface water must be removed prior to installation. Additionally, all mortars (modified and unmodified) have an acceptable temperature range that must be observed during application and curing.

# THIN-SET DISCUSSION

## Evaluation of mortar types used with Schluter®-DITRA

As stated previously in this Handbook, Schluter®-Systems recommends the use of unmodified thin-set mortar between **DITRA** and the ceramic or porcelain tile covering. In this section, we will address concerns regarding the use of unmodified mortar over DITRA and provide insight into the overall function of the tile assembly using experimental data. The Tile Council of North America was contracted to perform independent testing of all experimental setups described hereafter.

A popular misconception in the tile industry is that porcelain tile cannot be bonded using unmodified mortar. To show that unmodified mortar will provide the necessary performance in DITRA installation systems, the following tests were performed. First, unmodified mortars from two different manufacturers were used to bond porcelain tile to DITRA over a single layer of 3/4" plywood with joists spaced at 19.2" o.c. The two installations were tested according to the ASTM C627 "Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson Type Floor Tester" and produced ratings of *heavy* and *light*. *Heavy* indicates a performance level acceptable for shopping malls, stores, commercial kitchens, work areas, laboratories, auto showrooms and service areas, shipping/receiving, and exterior decks, while *light* indicates a performance level acceptable for light commercial use in office space, reception areas, kitchens, and bathrooms. Given that the test assemblies only utilized a single layer of plywood, these high-performance ratings demonstrate that unmodified mortar can provide a secure bond even over a bending and deflecting substrate. Tiles were removed from each of the ASTM C627 specimens after the Robinson test was complete, and then used to evaluate shear bond strength between the unmodified mortar and the tile. Test results are summarized in the table below.

Mortar Type (Applicable ANSI Standard)	Test Report Number	ASTM C627 Test Rating*	Test Report Number	Shear Test Results† (psi)	
				Specimens:	Average:
Manufacturer 1 Unmodified (A118.1)	TCA-046-03 (B)	Heavy (13 cycles)	TCA-073-03	Specimens:	327, 267, 267, 246
				Average:	277
Manufacturer 2 Unmodified (A118.1)	TCA-126-03 (A)	Light (9 cycles)	TCA-186-03	Specimens:	425, 381, 275, 377
				Average:	365

### \*Test Setup:

1. 2" x 2" joists spaced 19.2" o.c.
2. APA-rated "Exposure 1" tongue-and-groove plywood subfloor; 3/4" thickness
3. Spray-dried latex-modified mortar in Test TCA-046-03 and liquid-emulsion latex-modified mortar in Test TCA-126-03 (ANSI A118.4)
4. Schluter®-DITRA mat
5. Unmodified mortar, as indicated in table above (ANSI A118.1)
6. 12" x 12" porcelain tile; 3/8" nominal thickness
7. Sanded, spray-dried latex-modified portland cement grout (ANSI A118.7)

† Tile samples removed from ASTM C627 test specimens and evaluated for shear bond strength between mortar and tile

Tests were also performed on DITRA assemblies using unmodified thin-set mortar over concrete according to ASTM C627. The two assemblies produced ratings of *Extra Heavy*, indicating a performance level acceptable for extra heavy and high impact use in food plants, dairies, breweries, and kitchens, and *Light*, indicating a performance level suitable for light commercial use in office space, reception areas, kitchens, and bathrooms. Variation in the performance levels achieved is attributable to the different tile used. Test results are summarized in the table below.

Substrate	Mortar Type (Applicable ANSI Standard)	Tile	Grout (Applicable ANSI Standard)	ASTM C627 Test Rating	Test Report Number
Concrete	Unmodified (A118.1)	12" x 12" porcelain; 5/16" nominal thickness	Polymer Modified Cement Grout (A118.7)	Extra Heavy (14 cycles)	TCNA-039-06
Concrete	Unmodified (A118.1)	2" x 2" porcelain; 1/4" nominal thickness	Polymer Modified Cement Grout (A118.7)	Light (6 cycles)	TCNA-057-06

Given concern over freeze/thaw performance of unmodified mortar, the next set of tests included shear bond tests of porcelain tile bonded to concrete with and without DITRA after exposure to freeze-thaw cycles in accordance with ANSI A118.4 (F5.2.6). An unmodified mortar was used in one installation, while a liquid-emulsion latex-modified mortar from the same manufacturer was used in the other. It should be noted that when used between two impervious materials, such as porcelain tile and DITRA, latex-modified mortars must be afforded extended drying times. According to the *TCNA Handbook for Ceramic, Glass, and Stone Tile Installation*, the necessary drying period can fluctuate from 14 days to over 60 days when using latex-modified mortar. Since unmodified mortars do not require a drying period (and actually benefit from continued water presence), they allow for normal use of the tile installation in a fraction of the time and, as shown in the test data in the table below, provide more than adequate performance.

Mortar Type (Applicable ANSI Standard)	Shear Test Results‡ (psi) Test Report TCA-145-03		
	Tile Bonded to Concrete (ANSI A118.4)⁻	Tile and DITRA Bonded to Concrete (ANSI A118.10)°	
Manufacturer 1 Unmodified (A118.1)	208	Specimens:	66, 61, 70, 62
		Average:	65
Manufacturer 1 Liquid-Emulsion Latex-modified (A118.4)	199	Specimens:	53, 57, 58, 75
		Average:	61

‡ All specimens subjected to freeze/thaw cycles in accordance with ANSI A118.4 (F5.2.6)

⁻ ANSI A118.4 requires minimum shear bond strength of 175 psi

° ANSI A118.10 requires minimum shear bond strength of 50 psi

# TESTING & CERTIFICATIONS

## Product Evaluation

Schluter®-Systems is committed to providing reliable installation systems for ceramic and stone tile. As part of this commitment, we have invested considerable resources in testing our products and obtaining certifications where applicable to provide our customers and local code officials with relevant data that supports the efficacy of our systems. All the testing referenced below was performed by independent laboratories.

### Uncoupling and Support/Load Distribution

The method used to establish the overall performance of a tile assembly under loading is the ASTM C627 "Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson Type Floor Tester." The assembly is tested in cycles using a loaded, revolving carriage. Load, wheel hardness, and number of revolutions vary with each cycle. Once a specified level of damage is exceeded, the test is stopped. The Tile Council of North America (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation assigns performance levels to an assembly based on the number of cycles successfully completed. The ratings include residential, light, moderate, heavy, and extra heavy, in order of improving performance.

Report Number	Substrate	Joist Spacing	Tile	Rating
<b>Schluter®-DITRA</b>				
TCNA-0709-21	OSB	19.2" o.c.	12" x 12" porcelain	Heavy (12 cycles)
TCNA-0709-21	Concrete	N/A	12" x 12" porcelain	Extra Heavy (14 cycles)
TCNA-0709-21	Concrete	N/A	2" x 2" porcelain	Light (7 cycles)
TCNA-0709-21	Concrete	N/A	Gauged porcelain panels	Moderate (11 cycles)
<b>Schluter®-DITRA-XL</b>				
TCNA-153-08	Plywood	24" o.c.	6" x 6" porcelain	Extra Heavy (14 cycles)
TCNA-303-06	Plywood	24" o.c.	12" x 12" porcelain	Heavy (12 cycles)

### Assembly Notes:

1. All plywood and OSB subfloors were 23/32" (3/4" nom.) -thick
2. DITRA and DITRA-XL bonded to plywood/OSB with modified thin-set mortar (ANSI A118.11)
3. DITRA bonded to concrete with modified thin-set mortar (ANSI A118.11)
4. Tile bonded to DITRA with modified thin-set mortar (ANSI A118.11)
5. Tile bonded to DITRA-XL with unmodified thin-set mortar (ANSI A118.1)
6. Polymer-modified cement grout (ANSI A118.7)
7. Gauged porcelain panel assembly featured epoxy grout (ANSI A118.3)

The test results above demonstrate that Schluter®-DITRA and -DITRA-XL perform extremely well under load while at the same time providing flexibility within the shear plane.

### Waterproofing

DITRA and DITRA-XL provide reliable waterproofing in interior applications. The products have been found to meet or exceed the requirements of the American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-set Ceramic Tile and Dimension Stone Installation A118.10. Schluter®-DITRA and DITRA-XL are also listed by cUPC® and have been evaluated by ICC-ES (Report No. ESR-2467 and PMG-1204).

### Vapor Management

The free space under the DITRA matting allows the substrate to breathe, while the material composition provides for a very low water vapor permeance, which prevents any significant vapor intrusion in the tile assembly from below.

Property	Test Method	Performance
Water vapor permeance	ASTM E96-15 (Procedure E Desiccant Method at 100 deg F and 90% RH)	0.0037 perms

The result is that DITRA and DITRA-XL effectively manage vapor and prevent damage to the tile covering as a result.

### Green Building

DITRA and DITRA-XL were evaluated according to the "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1" for California Specification 01350 and found to comply with the VOC requirements. California Specification 01350 is referenced by various green building standards and rating systems.

# HOW DOES IT WORK?

## Explanation of how Schluter®-DITRA functions

To understand how the DITRA system works, it is important to first understand what a tile assembly is, how it functions, and how stresses occur within the assembly. A tile installation is a composite assembly that consists of layered components (underlayments, bonding mortars, tile, etc.). The primary sources of stress in this composite system are movements due to loading, changes in temperature, and changes in moisture content (either in the substructure or in the components of the tile assembly, including the tile itself). When an installation is subjected to these movements, compressive and tensile stresses develop within the assembly and interact to produce shear stresses at the interfaces between the layered components. Therefore, a tile assembly must be able to perform well under load and, at the same time, provide flexibility within the shear plane.

The method used to establish the overall performance of a tile assembly under loading is the ASTM C627 “Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson Type Floor Tester.” The assembly is tested in cycles using a loaded, revolving carriage. Load, wheel hardness, and number of revolutions vary with each cycle. Once a specified level of damage is exceeded, the test is stopped. The Tile Council of North America (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation assigns performance levels to an assembly based on the number of cycles successfully completed. The ratings include *residential*, *light*, *moderate*, *heavy*, and *extra heavy*, in order of improving performance.

The TCNA conducted the tests shown below, which included a single layer of plywood (3/4" thick) over joists spaced at 19.2" o.c., DITRA bonded using modified thin-set mortar (ANSI A118.11), 12" x 12" porcelain tile (3/8" thick) bonded using modified thin-set mortar (ANSI A118.4), and modified portland cement grout (ANSI A118.7).

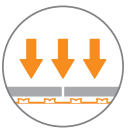
Test Report Number	Number of Cycles Passed	Rating
TCNA-0709-21	12	Heavy

The installation produced a rating of *heavy*, according to the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation. “Heavy” indicates a performance level acceptable for shopping malls, stores, commercial kitchens, work areas, laboratories, auto showrooms and service areas, shipping/receiving, and exterior decks.

Given that the test assemblies consisted of only a single layer of plywood over joists spaced at 19.2" o.c. (a bending and deflecting substrate), these ratings demonstrate that DITRA performs extremely well under load while at the same time providing flexibility within the shear plane.



DITRA provides uncoupling (geometric flexibility) through its open rib structure, which allows for in-plane movement that effectively neutralizes the differential movement stresses between the substrate and the tile.



When placed on a solid foundation, columns or pillars can support tremendous loads. The same physical principle applies to DITRA installations. Column-like mortar structures are formed in the cutback cavities of the matting. Loads are transferred from the tile covering through these column-like mortar structures to the substrate. Since mortar has a very high compressive strength, DITRA becomes virtually incompressible within the tile assembly and, therefore, doesn't sacrifice load-distribution capabilities of the system.

This flexibility is readily apparent when the overall DITRA assembly is subjected to shear testing. In the tests shown below, porcelain tile was bonded to concrete using unmodified thin-set mortar meeting ANSI A118.1. One specimen included DITRA, while the other did not. The results show that the amount of stress developed in the system when the tile layer is displaced is significantly reduced through the inclusion of DITRA, which is due to the product's flexibility in the shear plane.

Assembly	Average Maximum Shear Stress (psi)
Tile over concrete	208
Tile and DITRA over concrete	65

Tile has been successfully installed for thousands of years by incorporating an uncoupling layer, or forgiving shear interface, between the tile assembly and the substrate. This practice has evolved from the method of setting tile in mortar over a layer of tamped sand to the unbonded mortar bed method (tile set in mortar over a cleavage membrane). However, this alone does not ensure a high-performance tile installation. The tile covering must be well supported so that loads can be distributed through the assembly to the substructure without damaging the tile covering. Therefore, a viable tile assembly must be designed to incorporate both support/load distribution of the tile layer and flexibility within the shear plane (e.g., a traditional unbonded mortar bed allows for flexibility at the shear plane through a cleavage membrane, but still provides a solid base for the tile layer).

Since DITRA utilizes geometric flexibility in the shear plane rather than material flexibility, the advantages of uncoupling are achieved without sacrificing load-distribution capabilities of the tile assembly. Thus, it is the combination of geometric flexibility in the shear plane and support in the normal direction that allows DITRA to protect the tile layer from stresses due to loading and changes in temperature and moisture.



# PRODUCT SELECTION

## Choosing between Schluter®-DITRA and DITRA-XL



### How Do I Choose Between DITRA and DITRA-XL?

Schluter uncoupling membranes provide the four essential functions for successful tile installation over a wide range of substrates, including plywood/OSB, concrete, gypsum, heated floors, etc. The choice between using DITRA or DITRA-XL depends on the nature of the particular project or application. The following points will help differentiate between the two products.

#### DITRA

- Minimizes tile assembly thickness and reduces transitions to lower surface coverings (e.g., carpet, engineered wood, and vinyl)
- Only 1/8" (3.5 mm)-thick – provides the thinnest possible assembly without sacrificing performance

#### DITRA-XL

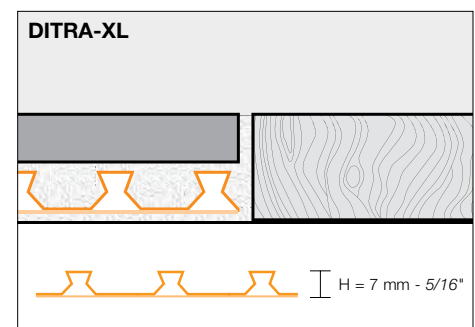
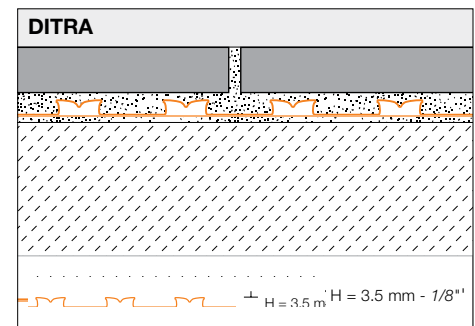
- Allows for ceramic tile application over single layer plywood/OSB subfloors on joists spaced at 24" (610 mm) o.c.
- 5/16" (7 mm)-thick – creates an even transition between typical 5/16" (7 mm)-thick tile and 3/4" (19 mm)-thick hardwood flooring.

### Even Transitions to Hardwood Flooring

In many thin-set ceramic tile applications, one of the goals is to minimize the thickness of the assembly to reduce height transitions from the tile to other floor coverings such as carpet, engineered wood, or vinyl. At 1/8" (3.5 mm)-thick, DITRA accomplishes this goal while providing the four essential functions for successful tile installations. Schluter floor profiles finish and protect tile edges at these transitions to complete the installation. However, where ceramic tile meets 3/4" (19 mm)-thick hardwood, minimizing the thickness of the tile assembly can result in a height transition up to the hardwood. On various projects, our customers began using two layers of DITRA to solve this problem. However, they requested a better solution.

### Research and Development

Since the uncoupling function is based on the geometric configuration of the product, we recognized that increasing the thickness of DITRA would result in increased movement accommodation. When the new product was tested, it became clear that the increase was significant. For results of the DITRA-XL ASTM C627 testing, please see page 22.



# WARRANTIES

## Schluter®-DITRA & Schluter®-DITRA-XL Uncoupling Membrane 10-Year Limited Warranty

**LIMITED WARRANTY COVERAGE:** Subject to the conditions and limitations as stated in this **Schluter®-DITRA and Schluter-DITRA-XL Uncoupling Membrane 10-Year Limited Warranty** (the “**Limited Warranty**”), Schluter Systems warrants that its Schluter®-DITRA and Schluter-DITRA-XL uncoupling membranes (the “**Products**”) will be free from manufacturing defects and will perform as described in the Schluter®-DITRA Installation Handbook and Schluter®-Uncoupling Membranes Technical Data Sheet (collectively, the “**Written Materials**”) for a period of ten (10) years from the date of purchase when installed and used in accordance with the terms and conditions of the Written Materials and industry standard guidelines that are not in conflict with the Written Materials in effect at the time of installation.

For the purposes of this Limited Warranty, “**Owner**” is defined as the original end user of the property in which the Products are installed; and “**Floor Covering Assembly**” is defined to include the Products, non-reusable flooring surfaces, and applicable setting and grouting materials.

This Limited Warranty is only applicable to installations in the United States of America and Canada. Schluter Systems is not responsible or liable under any circumstances for determining the suitability of the Products for the Owner’s intended purpose. It is the responsibility of the Owner to consult with an experienced and professional installer to ensure the suitability of the Products, subfloor/substrate and all building materials in the installation and that the Written Materials are followed properly.

**RESOLUTION:** If the Products are installed and used in accordance with the terms and conditions as described hereinabove and such Products are proven defective within the applicable warranty term, the Owner’s exclusive remedy and the sole obligation of Schluter Systems, at its election, shall be to (a) reinstall or replace the failed portion of the Floor Covering Assembly or (b) pay an amount not to exceed the original square foot cost of the installation of the Floor Covering Assembly verified to be defective. Due to conditions beyond the control of Schluter Systems (e.g., color and shade availability, discontinuation, normal wear and tear), Schluter Systems cannot guarantee or warrant an exact match to the specific tile, stone, or other flooring materials used in the original installation. In such event, substantially similar materials may be substituted.

**EXCLUSIONS FROM COVERAGE:** This Limited Warranty excludes and in no event shall Schluter Systems have any liability for any indirect, special, incidental, punitive, exemplary, or consequential damages, including lost profits, arising out of or otherwise connected to the failure of the Products or Floor Covering Assembly, regardless of any strict liability or active or passive negligence of Schluter Systems, and regardless of legal theory, whether in contract, tort, extra-contractual or other. This Limited Warranty further excludes any loss or damage arising out of or otherwise connected to: acts of war, terrorism, fire, explosion, natural disaster, acts of God, any failure to comply with the Written Materials, inadequate subfloor/substrate, improper preparation or other failure of subfloor/substrate, faulty or negligent penetration of the Products or subfloor/substrate, intentional acts of destruction, structural failure, misuse of or failure to maintain the Products, normal wear and tear, scratches, dents, corrosion or discoloration (whether caused by excessive heat, chemical cleaning products, abrasive agents or otherwise), efflorescence and shading which are a natural occurrence with cementitious materials and are not considered a defective condition for the purposes of this Limited Warranty, variations of texture, color or shade from those on product samples, packaging materials or other marketing materials, or other causes unrelated to the Products (e.g. floor covering failure, excess point loading, overvoltage). This Limited Warranty excludes exterior applications and applications utilizing glass tile or other non-approved floor coverings, unless specifically approved in writing on a case by case basis by the Schluter Systems Technical Services Director.

This Limited Warranty is conditioned and will be considered null and void and Schluter Systems will have the right to refuse any claims if: (a) the Products have been improperly stored or installed, or (b) the Products are subject to abusive or abnormal use, lack of maintenance, or used in a manner other than that for which the Products were designed or in any way contrary to the Written Materials.

**DISCLAIMER:** There are no warranties beyond this expressed warranty as stated herein. To the extent permitted by law, all other warranties, representations or conditions, expressed or implied, are hereby disclaimed and excluded, including but not limited to the implied warranties of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE** (as limited to such purposes as described in the Written Materials) or arising from a course of dealing, usage of trade or otherwise by law. ANY IMPLIED WARRANTIES ARISING BY OPERATION OF LAW ARE LIMITED IN DURATION TO THE TERM OF THIS LIMITED WARRANTY. NO REPRESENTATION, PROMISE, AFFIRMATION OR STATEMENT BY ANY EMPLOYEE OR AGENT OF SCHLUTER SYSTEMS WILL BE ENFORCEABLE AGAINST SCHLUTER SYSTEMS UNLESS IT IS SPECIFICALLY INCLUDED IN THIS LIMITED WARRANTY OR AUTHORIZED IN WRITING BY THE SCHLUTER SYSTEMS TECHNICAL SERVICES DIRECTOR. This Limited Warranty is given in lieu of any other warranty, whether expressed or implied. The remedies contained herein are the only remedies available for breach of this Limited Warranty. This Limited Warranty extends only to the Owner and is not transferable or assignable unless authorized by written agreement and signed by the Schluter Systems Technical Services Director or otherwise prohibited by specific state or provincial law. This Limited Warranty gives you specific legal rights; some states and provinces do not allow disclaimers or other restrictions of implied warranties; some of the above disclaimers may not apply to you. **No changes or modifications of any terms or conditions of this Limited Warranty are permitted unless duly authorized in writing by the Schluter Systems Technical Services Director.** This Limited Warranty shall supersede and replace any and all prior oral or written warranties, agreements, or other representations made by or on behalf of Schluter Systems relative to the Products or the application of the Products and shall apply to any installation occurring on or after March 13, 2019. If the Schluter®-DITRA or Schluter®-DITRA-XL uncoupling membrane are used in conjunction with other Schluter products, a different Schluter warranty may apply. For the most current information and materials regarding Schluter Systems warranties and programs, please visit [https://www.schluter.com/schluter-us/en\\_US/downloadfiles](https://www.schluter.com/schluter-us/en_US/downloadfiles).

**MAKING A CLAIM:** To make a claim under this Limited Warranty, the Owner must provide Schluter Systems<sup>2</sup> with written notice within thirty (30) days of any alleged defect in the Products covered by this Limited Warranty, together with date and proof of purchase of such Products and/or all of its components and name and address of all installers and all invoices related to the original installation, failing which this Limited Warranty shall have no legal effect<sup>3</sup>. Schluter Systems reserves the right at its election and as a condition of this Limited Warranty to inspect the alleged failed and/or defective Products.

**All U.S. Claims shall be sent to:**

Schluter Systems L.P.  
Attn: Warranty Claims Dept.  
194 Pleasant Ridge Road  
Plattsburgh, NY 12901-5841

**All Canadian Claims shall be sent to:**

Schluter Systems (Canada), Inc.  
Attn: Warranty Claims Dept.  
21100 chemin Ste-Marie  
Ste-Anne-de-Bellevue, QC H9X 3Y8

<sup>1</sup>If there are any conflicting terms between any Written Materials, the most recently updated document shall be deemed to control.

<sup>2</sup>This Limited Warranty is limited to sales of the Products made in and intended for use in the United States and Canada. For the purposes of this Limited Warranty, Schluter Systems L.P. shall offer warranty coverage to Owners located in the United States, and Schluter Systems (Canada) Inc. shall offer warranty coverage to Owners located in Canada.

<sup>3</sup>In the event that Owner fails to provide such required invoices relating to the original installation, Schluter Systems shall pay Owner an amount equal to the average, reasonable costs of a comparable installation. If the parties fail to agree on such amount, such dispute shall promptly, and in the first instance, be submitted: (a) if a U.S. claim, to arbitration in Clinton County, New York, in accordance with the rules of the American Arbitration Association, or (b) if a Canadian claim, in the Province of Quebec, Canada, in accordance with the ADPIC Arbitration Rules. Any outcome of such arbitration proceeding shall be final and binding upon the parties hereto.

# Schluter®-Systems Lifetime Thin-Set System Extended Limited Warranty

**LIMITED WARRANTY COVERAGE:** Subject to the conditions and limitations as stated in this **Lifetime Thin-Set System Extended Limited Warranty** (the "**Limited Warranty**"), Schluter Systems warrants that a Thin-Set System (defined hereafter) will be free from manufacturing defects and will perform as described in the applicable installation handbook(s) and/or technical data sheet(s) (collectively, the "**Written Materials**") for the lifetime (defined hereafter) of such Thin-Set System when installed in a Residential or Commercial application (defined hereafter) and used in accordance with the terms and conditions of the Written Materials and industry standard guidelines that are not in conflict with the Written Materials in effect at the time of installation. In order to extend warranty coverage for Schluter® DITRA® or DITRA®-XL uncoupling membranes, Schluter®-Shower System, Schluter® KERDI® or KERDI®-DS waterproofing membranes, or Schluter® DITRA-HEAT™ or Schluter® DITRA-HEAT-DUO™ uncoupling membrane to lifetime coverage under this Lifetime Thin-Set System Extended Limited Warranty, Owner must complete and submit the Thin-Set System Registration to Schluter Systems, available at [www.schluter.com](http://www.schluter.com), or submit proof of purchase and installation information (including installation date, installer's name and address) to Schluter Systems at the address provided hereafter within ninety (90) days of installation. Note: Please retain Schluter® Thin-set Mortar Lot/Batch Number(s) for Lifetime Warranty Registration. These numbers are required for completion of the warranty registration process.

For the purposes of this Limited Warranty, a "**Thin-Set System**" is defined as Schluter® DITRA® or DITRA®-XL uncoupling membranes, Schluter®-Shower System, Schluter®-KERDI®-BOARD within a Schluter®-Shower System, Schluter® KERDI® or KERDI®-DS waterproofing membranes, or Schluter® DITRA-HEAT™ or Schluter® DITRA-HEAT-DUO™ uncoupling membrane installed with Schluter SET®, Schluter ALL-SET®, or Schluter FAST-SET® thin-set mortar and Schluter®-PRIMER-U primer (as specified pursuant to applicable Written Materials); "**Owner**" is defined as the original end user of the property in which a Thin-Set System is installed; "**Lifetime**" is defined as that period of time that the original Thin-Set System installation remains unchanged and under the ownership of the Owner; "**Residential**" applications are defined to include Thin-Set System installations in single family detached residential dwellings; and "**Commercial**" applications are defined to include Thin-Set System installations in multi-family residential dwellings (e.g., apartments, condominiums, cooperatives, and timeshares). Thin-Set System installations in public places, commercial establishments and other applications may be afforded lifetime coverage under this Limited Warranty on a case by case basis as determined by the Schluter Systems Technical Services Director.

This Limited Warranty is only applicable to installations in the United States of America and Canada. Schluter Systems is not responsible or liable under any circumstances for determining the suitability of a Thin-Set System for the Owner's intended purpose. It is the responsibility of the Owner to consult with an experienced and professional installer to ensure the suitability of a Thin-Set System, subfloor/substrate and all building materials in the installation and that the Written Materials are followed properly.

**RESOLUTION:** If a Thin-Set System is installed and used in accordance with the terms and conditions as described hereinabove and such Thin-Set System is proven defective within the applicable warranty term, the Owner's exclusive remedy and the sole obligation of Schluter Systems, at its election, shall be to (a) reinstall or replace the failed portion of the Thin-Set System or (b) pay an amount not to exceed the original square foot cost of the installation of the Thin-Set System verified to be defective. Due to conditions beyond the control of Schluter Systems (e.g., color and shade availability, discontinuation, normal wear and tear), Schluter Systems cannot guarantee or warrant an exact match to the specific tile, stone, or other flooring materials used in the original installation. In such event, substantially similar materials may be substituted.

**EXCLUSIONS FROM COVERAGE:** This Limited Warranty excludes and in no event shall Schluter Systems have any liability for any indirect, special, incidental, punitive, exemplary, or consequential damages, including lost profits, arising out of or otherwise connected to the failure of a Thin-Set System, regardless of any strict liability or active or passive negligence of Schluter Systems, and regardless of legal theory, whether in contract, tort, extra-contractual or other. This Limited Warranty further excludes any loss or damage arising out of or otherwise connected to: acts of war, terrorism, fire, explosion, natural disaster, acts of God, any failure to comply with the Written Materials, inadequate subfloor/substrate, improper preparation or other failure of subfloor/substrate, faulty or negligent penetration of a Thin-Set System or subfloor/substrate, intentional acts of destruction, structural failure, misuse of or failure to maintain a Thin-Set System, normal wear and tear, scratches, dents, corrosion or discoloration (whether caused by excessive heat, chemical cleaning products, abrasive agents or otherwise), efflorescence and shading which are a natural occurrence with cementitious materials and are not considered a defective condition for the purposes of this Limited Warranty, variations of texture, color or shade from those on product samples, packaging materials or other marketing materials, or other causes unrelated to a Thin-Set System (e.g. surface covering failure, excess point loading, overvoltage). This Limited Warranty excludes exterior, submerged and steam room applications and further excludes applications using glass tile, moisture sensitive stone, or other non-approved surface coverings, unless specifically approved in writing on a case by case basis by the Schluter Systems Technical Services Director. Schluter® DITRA-HEAT™-E-HK heating cables and Schluter® DITRA-HEAT™-E thermostats are specifically excluded from coverage under this Limited Warranty. Any substitution of a non-Schluter Systems product for a Schluter Systems component in a Thin-Set System voids this Limited Warranty.

**DISCLAIMER:** There are no warranties beyond this expressed warranty as stated herein. To the extent permitted by law, all other warranties, representations or conditions, expressed or implied, are hereby disclaimed and excluded, including but not limited to the implied warranties of **MERCHANTABILITY** or **FITNESS FOR A PARTICULAR PURPOSE** (as limited to such purposes as described in the Written Materials) or arising from a course of dealing, usage of trade or otherwise by law. ANY IMPLIED WARRANTIES ARISING BY OPERATION OF LAW ARE LIMITED IN DURATION TO THE TERM OF THIS LIMITED WARRANTY. NO REPRESENTATION, PROMISE, AFFIRMATION OR STATEMENT BY ANY EMPLOYEE OR AGENT OF SCHLUTER SYSTEMS WILL BE ENFORCEABLE AGAINST SCHLUTER SYSTEMS UNLESS IT IS SPECIFICALLY INCLUDED IN THIS LIMITED WARRANTY OR AUTHORIZED IN WRITING BY THE SCHLUTER SYSTEMS TECHNICAL SERVICES DIRECTOR. This Limited Warranty is given in lieu of any other warranty, whether expressed or implied. The remedies contained herein are the only remedies available for breach of this Limited Warranty. Schluter Systems excludes and in no event shall have any liability for any indirect, special, incidental, punitive, exemplary, or consequential damages, including lost profits, arising out of or otherwise connected to failure of a Thin-Set System. This Limited Warranty extends only to the Owner and is not transferable or assignable unless authorized by written agreement and signed by the Schluter Systems Technical Services Director or otherwise prohibited by specific state or provincial law. This Limited Warranty gives you specific legal rights; some states and provinces do not allow disclaimers or other restrictions of implied warranties; some of the above disclaimers may not apply to you. **No changes or modifications of any terms or conditions of this Limited Warranty are permitted unless duly authorized in writing by the Schluter Systems Technical Services Director.** This Limited Warranty shall supersede and replace any and all prior oral or written warranties, agreements, or other representations made by or on behalf of Schluter Systems relative to a Thin-Set System or the application of a Thin-Set System and shall apply to any installation occurring on or after March 13, 2019. For the most current information and materials regarding Schluter Systems warranties and programs, please visit [https://www.schluter.com/schluter-us/en\\_US/downloadfiles](https://www.schluter.com/schluter-us/en_US/downloadfiles).

**MAKING A CLAIM:** To make a claim under this Limited Warranty, the Owner must provide Schluter Systems with written notice within thirty (30) days of any alleged defect in a Thin-Set System covered by this Limited Warranty, together with date and proof of purchase of such Thin-Set System and/or all of its components and name and address of all installers and all invoices related to the original installation, failing which this Limited Warranty shall have no legal effect. Schluter Systems reserves the right at its election and as a condition of this Limited Warranty to inspect the alleged failed and/or defective Thin-Set System.

All U.S. Claims shall be sent to:  
Schluter Systems L.P.  
Attn: Warranty Claims Dept.  
194 Pleasant Ridge Road  
Plattsburgh, NY 12901-5841

All Canadian Claims shall be sent to:  
Schluter Systems (Canada), Inc.  
Attn: Warranty Claims Dept.  
21100 chemin Ste-Marie  
Ste-Anne-de-Bellevue, QC H9X 3Y8

<sup>1</sup>If there are any conflicting terms between any Written Materials, the most recently updated document shall be deemed to control.

<sup>2</sup>In the event that Owner fails to provide such required invoices relating to the original installation, Schluter Systems shall pay Owner an amount equal to the average, reasonable costs of a comparable installation. If the parties fail to agree on such amount, such dispute shall promptly, and in the first instance, be submitted: (a) if a U.S. claim, to arbitration in Clinton County, New York, in accordance with the rules of the American Arbitration Association, or (b) if a Canadian claim, in the Province of Quebec, Canada, in accordance with the ADRIC Arbitration Rules. Any outcome of such arbitration proceeding shall be final and binding upon the parties hereto.

# Porcelain Tile Professional Thin-Set Mortar

## 1 Product Name

Porcelain Tile Professional Thin-Set Mortar

## 2 Manufacturer

Custom Building Products  
Technical Services  
10400 Pioneer Boulevard, Unit 3  
Santa Fe Springs, CA 90670  
Customer Support: 800-272-8786  
Technical Services: 800-282-8786  
Fax: 800-200-7765  
Email: [contactus@cbpmail.net](mailto:contactus@cbpmail.net)  
[custombuildingproducts.com](http://custombuildingproducts.com)

## 3 Product Description

Designed to provide superior bonding of porcelain tile to concrete surfaces, backerboards and self-leveling underlayment. Polymer-modified Porcelain Tile Fortified Thin-Set Mortar can also be used with radiant heating system installations. Use it for interior or exterior floors, walls or countertops.

### Key Features

- High bond strength for porcelain tile
- Use for radiant heating system installations

### Suitable Tile Types

- Vitreous, semi-vitreous or non-vitreous tile: ceramic, mosaic, quarry, cement body tile
- Impervious porcelain and glass tile
- Brick and thin brick
- Cement-based precast terrazzo
- Natural stone tile

### Suitable Substrates

- Concrete, mortar beds, masonry, Portland cement plaster
- [WonderBoard® Lite cement backerboard](#)
- Liquid applied waterproofing membranes such as [RedGard®](#) and [Custom® 9240](#)
- Crack prevention sheet membranes such as [Crack Buster® Pro](#)
- Uncoupling membranes such as [RedGard® Uncoupling Mat](#)
- Surfaces treated with [MBP Multi-Surface Bonding Primer](#)
- Exterior Grade Plywood (interior residential and light commercial dry areas)
- Gypsum wallboard (interior dry areas)
- Existing ceramic tile (scarified)
- Fully-bonded sheet vinyl flooring (scarified)
- Plastic laminates (scarified)
- Cutback adhesive (see preparation instructions)

### Composition of Product

Porcelain Tile Fortified Thin-Set Mortar is a dry, proprietary Portland cement based mixture that includes vinyl copolymers, inorganic aggregates and chemicals.



### Benefits of Product in the Installation

- Superior bonding of porcelain to concrete, backerboard, and cement self-leveling underlayment
- Excellent for glass tile
- Excellent for radiant heating system installations
- Approved for industry-recommended interior and exterior applications
- Exceeds ANSI A118.4, A118.15 and A118.11 standards without the need for additives

### Limitations to the Product

- Do not bond directly to hardwood, Luan plywood, particle board, parquet, cushion or sponge-back vinyl flooring, metal, fiberglass, plastic or OSB panels.
- Not recommended for interior and exterior pools and water features. CUSTOM recommends [MegaLite® Crack Prevention Mortar](#), [MegaFlex® Crack Prevention Mortar](#) and [ProLite® Large Tile and Stone Mortar](#) for the installation of ceramic and porcelain tile in submerged applications. For additional information, contact Custom Technical Services.
- When setting moisture sensitive natural stone, cement or agglomerate tile use [EBM-Lite™ Epoxy Bonding Mortar 100% Solids](#) or [CEG-Lite™ 100% Solids Commercial Epoxy Grout](#).
- Do not use to install resin-backed stone; use [EBM-Lite™ Epoxy Bonding Mortar 100% Solids](#), [CEG-Lite™ 100% Solids Commercial Epoxy Grout](#) or contact Custom's® Technical Services for recommendations.
- For clear or translucent glass, CUSTOM recommends [Glass Tile Premium Thin-Set Mortar](#). When setting glass tile larger than 6" x 6" (15 x 15 cm), contact Custom's® Technical Services for recommendations.
- When setting dimensional stone larger than 12" x 12" (30 x 30 cm), contact Custom's® Technical Services for recommendations regarding subfloor deflection requirements.

### Packaging

- 50 lb (22.68 kg) bag
- Gray or white



# CUSTOM®

# Porcelain Tile Professional Thin-Set Mortar

## 4 Technical Data

### Applicable Standards

American National Standards Institute (ANSI) — ANSI A108.5, A118.4, A118.15 and A118.11 of the American National Standards for the Installation of Ceramic Tile ASTM International (ASTM)

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or [50-mm] Cube Specimens)
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester

Resilient Floor Covering Institute - (RFCI) Recommended Work Practices for Removal of Resilient Floor Coverings  
Tile Council of North America (TCNA) - TCNA Handbook for Ceramic Tile Installation, TCNA Method EJ171  
ISO 13007-2

### Technical Chart

Property	Test Method	Requirement	Typical Results
Pot Life			2 Hours
Open Time (E)	A118.15 Section 5.3	E = 30 Minutes	Pass
4 Week Shear Bond Strength			
Glazed Wall Tile	A118.15 Section 7.1.2	> 450 psi	500 - 600 psi (35.2 - 42.2 kg/cm <sup>2</sup> )
Porcelain Tile	A118.15 Section 7.2.5	> 400 psi	400 - 500 psi (28.1 - 35.2 kg/cm <sup>2</sup> )
Quarry Tile to Plywood	A118.11 Section 4.1.2	> 150 psi	200 - 300 psi (14.1 - 21.1 kg/cm <sup>2</sup> )
Sag on Walls	A118.15 Section 6.0	< 0.02 mm	Pass

### Environmental Consideration

Custom® Building Products is committed to environmental responsibility in both products produced and in manufacturing practices. Use of this product can contribute towards LEED® v3 certification:

- Up to 2 points towards MR Credit 5, Regional Materials
- Up to 2 points towards MR Credit 4, Recycled Content
- Up to 1 point towards IEQ Credit 4.1, Low-Emitting Materials – Adhesives & Sealants

## 5 Instructions

### General Surface Prep

**USE CHEMICAL-RESISTANT GLOVES, such as nitrile, when handling product.**

Surfaces must be structurally sound. Remove all grease, oil, dirt, curing compounds, sealers, adhesives or any other contaminant that would prevent a good bond. Glossy or painted surfaces must be sanded, or abraded, and stripped of all contaminants. Concrete must be cured 28 days and accept water penetration. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a coarse finish to enhance the bond. Plywood flooring including those under resilient flooring must be structurally sound and meet all ANSI and deflection requirements. For questions about proper subfloor installation, call Technical Services. Smooth concrete surfaces, existing glazed tile, terrazzo, or polished stone should be scarified. Sheet vinyl must be well bonded and stripped of old finish. Roughen the surface by sanding or abrading, then rinse and allow to dry. Expansion joints should never be bridged with setting material. Do not sand flooring materials containing asbestos. **Ambient temperature should be maintained above 50° F (10° C) or below 100° F (38° C) for 72 hours to achieve proper bond.**

### Bonding to Concrete Surfaces

Concrete or plaster must be fully cured and must accept water penetration. Test by sprinkling water on various areas of the substrate. If water penetrates, then a good bond can be achieved; if water beads, surface contaminants are present, and loss of adhesion may occur. Contaminants should be mechanically removed before installation. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a coarse finish to enhance the bond. Smooth concrete slabs must be mechanically abraded to achieve proper bond.

### Bonding to Lightweight Cement and Gypsum Surfaces

Lightweight or gypsum based underlayments must obtain a minimum 2000 psi (13.8 MP) compressive strength. The underlayment must be sufficiently dry and properly cured to the manufacturer's specifications for permanent, non-moisture permeable coverings. Surfaces to be tiled must be structurally sound and subject to deflection not to exceed the current ANSI Standards. Surfaces shall be free of all grease, oil, dirt, dust, curing compounds, waxes, sealers, efflorescence, or any other foreign matter.

All Lightweight cement or Gypsum surfaces should be primed with a properly applied sealer or a primer coat of [RedGard](#), consisting of 1 part RedGard diluted with 4 parts clean, cool water. Mix in a clean bucket at low speed to obtain a lump free solution. The primer can be brushed, rolled or sprayed to achieve an even coat. Apply the primer coat to the floor at a rate of 300 sq. ft./l (7.5 sq. m/L). Drying time depends on site conditions, but is normally less than 1 hour. Extremely porous surfaces may require 2 coats. At this point, RedGard can be applied to the primed lightweight or gypsum based surface. Refer to the individual product data sheet or packaging directions for application instructions. Expansion joints must be installed in accordance with local building codes and ANSI/TCNA guidelines. Refer to TCNA EJ171.

### Bonding to Plywood Surfaces

Plywood floors, including those under resilient flooring, must be structurally sound and must meet all ANSI A108.01 Part 3.4 requirements. Maximum allowable deflection: L/360 tile L/720 stone. See TCNA F150-13 Tile Installations, TCNA F141-13 and F250-13 for Stone. For questions about proper subfloor installation requirements, call Custom technical services.



# Porcelain Tile Professional Thin-Set Mortar

## Bonding to Backerboards

As an alternative to an additional layer of plywood, WonderBoard backerboard may be installed over plywood subfloors for ceramic tile installations. Refer to TCNA F144-13 tile installations, TCNA F250-13 stone installations. Call Custom technical services when installing natural stone over plywood subfloor.

## Bonding to Existing Surfacing Material

Existing Ceramic Tile, Resilient Flooring or Plastic Laminates: Resilient flooring or plastic laminates must be well bonded, as well as clean and free of all contaminants. Roughen the surface by sanding or scarifying; rinse and allow to dry. Do not sand flooring that contains asbestos. For existing well bonded ceramic tile, mechanically abrade the surface. Rinse and allow to dry. When sanding, an approved respirator should be used.

## Bonding to Cutback Adhesive

Adhesive layers must be removed, as they reduce mortar bond strength to cement surfaces. Use extreme caution; adhesives may contain asbestos fibers. Do not sand or grind adhesive residue, as harmful dust may result. Never use adhesive removers or solvents, as they soften the adhesive and may cause it to penetrate into the concrete. Adhesive residue must be wet scraped to the finished surface of the concrete, leaving only the transparent staining from the glue. To determine desirable results, do a test bond area before starting. Refer to the RFCI Pamphlet, "Recommended Work Practices for Removal of Resilient Floor Coverings" for further information.

## Movement Joint Placement

Movement joints are required for perimeters and other changes of plane in all installations. Expansion joints and cold joints, as described in ANSI A108.01, should never be bridged with setting material. They must be brought through the tile work and filled with an appropriate elastomeric sealant, such as [Custom's 100% Silicone](#). Contact Custom's Technical Services for the proper treatment of control or saw cut joints. Refer to TCNA EJ171, F125 & F125A.

## Mixing Ratios

Mix 6 qts (5.67 L) clean water per 50 lb (22.68 kg) bag of mortar.

## Mixing Procedures

Mix by hand or use a low 150 – 200 rpm speed 1/2" (13 mm) drill to achieve a smooth, paste-like consistency. Let the mixture slake or stand 5 – 10 minutes; stir again and use. Stir occasionally, but do not add more water. When properly mixed, troweled ridges will stand without slump.

## Application of Product

Installation must conform to ANSI A108.5. Use a properly-sized notch trowel to ensure proper coverage under tiles. Using the flat side of the trowel, apply a skim coat of mortar to the surface. With the notch side of the trowel held at a 45° angle, apply additional mortar to the surface, combing in one direction. Press the tile firmly into place in a perpendicular motion across ridges, moving back and forth. The perpendicular motion flattens ridges and closes valleys, allowing maximum coverage. With some tile, back-buttering is advisable. Adjust the tile promptly and beat it in with a beating block and rubber mallet. Mortar can be applied up to 1/4" (6 mm) thick after beat in. For thicker applications, use a medium bed mortar; periodically pull up a tile and check the back to ensure proper adhesive coverage. If the material has skinned over (not sticky to the touch), recomb with the notch trowel; if too dry, remove and replace the dry material with fresh material.

## Curing of Product

Curing time is affected by ambient and surface temperatures and humidity. Use the following as a guideline. Allow 24 hours before grouting and light traffic, and 7-10 days before heavy or vehicular traffic. Before exposure to heavy or vehicular traffic, assure assembly is rated "Heavy or Extra Heavy" per TCNA Service Requirements. As necessary, use plywood or other load distributing protection when moving heavy equipment across tiled assembly.

## Cleaning of equipment

Clean with water before the material dries.

## Storage

Store in a cool dry area.

## Health Precautions

This product contains Portland cement and free silica. Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. If eye contact occurs, flush with water for 15 minutes and consult a physician. Do not breathe dust; wear a NIOSH approved respirator

## Conformance to Building Codes

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

## 6 Availability & Cost

Location	Item Code	Size	Color	Package
USA	PMG50	50 lb (22.68 kg)	Gray	Bag
USA	PMW50	50 lb (22.68 kg)	White	Bag
Canada	CPMG50	50 lb (22.68 kg)	Gray	Bag

## 7 Product Warranty

Obtain the applicable **LIMITED PRODUCT WARRANTY** at [www.custombuildingproducts.com/product-warranty](http://www.custombuildingproducts.com/product-warranty) or send a written request to Custom Building Products, Inc., Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured under the authority of Custom Building Products, Inc. © 2017 Quikrete International, Inc.

When Porcelain Tile Fortified Thin-Set Mortar is used as a part of a qualifying full installation system of CUSTOM products, the installation can qualify for up to a 15 year system warranty. CUSTOM will repair and/or replace, at its discretion, the affected area of the system. For more information, find details and limitations to this warranty at [custombuildingproducts.com](http://custombuildingproducts.com).

## 8 Product Maintenance

Properly installed product requires no special maintenance.

## 9 Technical Services Information

For technical assistance, contact Custom technical services at 800-282-8786 or visit [custombuildingproducts.com](http://custombuildingproducts.com).



# Porcelain Tile Professional Thin-Set Mortar

---

## 10 Filing System

Additional product information is available from the manufacturer upon request.

---

### Expected Wear

Properly installed tile will last for more than 60 years.

### Related Products

Polyblend® Sanded Grout

# Porcelain Tile Professional Thin-Set Mortar

---

## Coverage

SQUARE FOOT COVERAGE PER 50 LB BAG (SQUARE METER PER 22.68 KG)

Trowel Size	Min Coverage	Max Coverage
Longest side of tile less than 8" use 1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) Square-Notch	90 sq. ft. (8.4 M <sup>2</sup> )	100 sq. ft. (9.3 M <sup>2</sup> )
Longest side of tile 8" to 15" use 1/4" x 3/8" x 1/4" (6 x 9.5 x 6 mm) Square-Notch	63 sq. ft. (5.9 M <sup>2</sup> )	70 sq. ft. (6.5 M <sup>2</sup> )

Recommended minimum coverage (80% for dry areas and 95% for wet areas and exteriors). Back buttering may be necessary.

Note that mortar coverage does not include backbuttering tiles. When backbuttering, consider the tile underside pattern and depth to estimate thickness and usage to add to your estimate.

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions. For more sizes, use the material calculator at [CustomBuildingProducts.com](http://CustomBuildingProducts.com) or contact CUSTOM Technical Services at 800-282-8786.



# CUSTOM<sup>®</sup>



# Polyblend®Plus Sanded Grout

**9-06 - Tile Grout**

## 1 Product Name

Polyblend®Plus Sanded Grout

## 2 Manufacturer

Custom Building Products  
 Technical Services  
 10400 Pioneer Boulevard, Unit 3  
 Santa Fe Springs, CA 90670  
 Customer Support: 800-272-8786  
 Technical Services: 800-282-8786  
 Fax: 800- 200-7765  
 Email: [contactus@cbpmail.net](mailto:contactus@cbpmail.net)  
[custombuildingproducts.com](http://custombuildingproducts.com)



## 3 Product Description

Polyblend Plus has all of the great features of original Polyblend, plus some new value-added enhancements to improve performance, finished color, and color consistency. It is now an ANSI A118.7 polymer-modified, cement-based sanded grout that produces hard, dense joints that resist shrinking, cracking, and wear. Formulated for durability, Polyblend Plus Sanded Grout accommodates 1/8"-1/2" (3.1-12.7 mm) joints for interior or exterior installations, including floors, countertops, walls, ceilings, showers, fountains, and pools.

### Key Features

- Brighter, more vivid finished color
- Enhanced color consistency
- Better resistance to efflorescence
- Meets ANSI 118.7 High Performance Grout Standard without additive
- Easy to use - Just mix with water
- Polymer fortified for hard, durable, professional results

### Uses

- Use to fill joint widths 1/8" to 1/2" (3.1 to 12.7 mm)
- May be used for both floor and wall installations
- Interior and exterior applications
- Residential and commercial applications
- Countertops, tub surrounds, showers and high traffic areas
- Submerged conditions (swimming pools, spas, water features and fountains)

### Suitable Tile Types

- Vitreous, semi-vitreous or non-vitreous tile: ceramic, mosaic, quarry, cement body tiles
- Impervious porcelain and glass tile
- Brick and stone veneer
- Cement-based precast terrazzo
- Natural stone tile

### Composition of Product

Polyblend® Plus Sanded Grout is a dry, Portland cement based grout with silica sand, inorganic aggregates and chemicals.

### Benefits of Product in the Installation

- Hard, durable grout joints
- Resists shrinking, cracking, powdering and wear

### Limitations to the Product

- Should not be installed when ambient or surface temperature is lower than 50°F (10°C) or higher than 100°F (38°C).
- Some ceramic, glass, metal, marble or stone tiles can be scratched or damaged by the silica aggregate filler. Perform a test on a small area prior to use. Polyblend® Plus NonSanded Grout may be appropriate for joints up to 1/8" or for tile not suited for sanded grout.
- Tile or stone with high absorption, surfaces that are porous or rough, textured surfaces and some types of porcelain tile may require sealing prior to grouting to prevent possible staining. Use Aqua Mix® Grout Release or TileLab® SurfaceGard® Sealer to prevent staining when required.
- Color variation can occur due to tile type, tile porosity, jobsite and climatic conditions, application and cleaning techniques. Variation can be minimized by following directions and using as little water as possible for cleanup.
- A CUSTOM grout color card is truest representation of the grout formula. Refer to the latest CUSTOM grout color card to choose a color. Perform a mockup to determine suitability. Various lighting types and conditions will affect the final grout and tile colors' appearance.
- Not for use in either industrial applications or in areas subjected to harsh or continuous chemicals, high heat or high-pressure cleaning. For heavy industrial tile installations, use CEG-IG 100% Solids Epoxy Grout.
- Chemicals in salt-based pool filtration systems can cause a reaction with blue, green and red grouts. Contact Technical Services for recommendations.
- Not for use in movement joints or changes of plane in the tile installation. In these areas, use an appropriate caulk or sealant such as Commercial 100% Silicone Sealant or Ceramic Tile Caulk.

### Packaging

Available in 2 sizes:

- 7 lb (3.17 kg) box
- 25 lb (11.34 kg) bag

25 lb bag available in 40 colors. 7 lb box available in 15 colors. Color matching is available.



# Polyblend®Plus Sanded Grout

## 4 Technical Data

### Applicable Standards

American National Standards Institute (ANSI) ANSI A108.10, A118.6 & A118.7 of the American National Standards for the Installation of Ceramic Tile ASTM International (ASTM)

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens)
- ASTM C531 Standard Test Method for Linear Shrinkage
- ASTM C580 Standard Test method for Flexural Strength
- ISO 13007-3

### Approvals

Polyblend® Plus Sanded Grout exceeds ANSI A118.6 & A118.7 standards.

### Technical Chart

Property	Test Method	Requirement	Typical Results
Pot Life	ANSI A118.7		1 - 2 Hours
28 Day Shrinkage	Section 3.3	< 0.20%	< 0.20%
28 Day Water Absorption	Section 3.4	< 5%	< 5%
1 Day Compressive Strength	Section 3.5	> 500 psi (35.2 kg/cm sq)	> 500 psi (35.2 kg/cm sq)
28 Day Compressive Strength	Section 3.5	> 3000 psi (210.9 kg/cm sq) > 3000 psi	> 3000 psi (210.9 kg/cm sq)
28 Day Tensile Strength	Section 3.6	> 500psi (35.2 kg/cm sq)	> 500psi (35.2 kg/cm sq)
28 Day Flexural Strength	Section 3.7	> 1000psi (70.3 kg/cm sq)	> 1000psi (70.3 kg/cm sq)

### Environmental Consideration

Custom® Building Products is committed to environmental responsibility in both products produced and in manufacturing practices. Use of this product can contribute towards LEED® v3 certification:

- Up to 2 points towards MR Credit 5, Regional Materials
- Up to 1 point towards IEQ Credit 4.1, Low-Emitting Materials – Adhesives & Sealants

## 5 Instructions

### General Surface Prep

**USE CHEMICAL-RESISTANT GLOVES, such as nitrile, when handling product.**

Tile or stone must be firmly bonded to a sound substrate, and setting material must be cured a minimum 24-48 hours before cement grout is applied, unless rapid-setting mortars are used. See the corresponding data sheet for the bonding mortars used in your application. Remove spacers and ensure that the grout joints are uniform in depth and width and free of loose debris, contaminants and excess mortar. Use [TileLab® SurfaceGard® Sealer](#) or [Aqua Mix® Grout Release](#) to seal tile or stone subject to staining or when using a grout that contrasts with the color of the tile.

### Mixing Ratios

- Mix 2 qt (1.89 L) clean water to 25 lb (11.34 kg) grout.
- Mix 1 pt (.473 L) clean water to 7 lb (3.17 kg) grout.

### Mixing Procedures

When installing more than 1 container of grout at a time, blend dry powders prior to mixing with water. Mix with a trowel or low speed mixer (less than 300 rpm) to achieve a smooth, lump-free consistency (approximately 3 minutes). Let the mixture stand (slake) for 5 minutes, and then remix and use. Periodically remix to keep the mixture workable, but do not add water, which can weaken the grout, cause color variation and possible cause shrinkage, cracks and pinholes. Discard grout when it becomes too stiff to work.

### Application of Product

Installation must conform to ANSI A108.10. Lightly dampen absorptive, highly porous tile with clean, cool water, but leave no standing water in the joints. Holding a rubber grout float at a 45° angle, completely fill the joints. Holding the edge of the float at a 90° angle, remove excess grout. At 70° F, do not spread more grout than can be cleaned within 30 minutes of the grout firming and use as little water as possible for grout clean-up (higher temperatures may shorten this time frame).

Using a damp, small pore grout sponge in a circular motion, smooth and level joints and remove excess grout. Change the water and rinse the sponge frequently. Haze can be removed after 3 hours with cheesecloth or wrung-out sponge. If haze persists, the installation can be washed after three days with Aqua Mix NanoScrub or after ten days with Aqua Mix® Sulfamic Acid Crystals, TileLab® Sulfamic Acid Cleaner or Aqua Mix® Cement Grout Haze Remover. Perform a test in an inconspicuous area prior to complete application. Movement joints are required for perimeters and other changes of plane in all installations. See TCNA Detail EJ171 for recommendations.

### Curing of Product

Curing time is affected by ambient and surface temperatures and humidity. For exterior applications, it is recommended that the installation is misted periodically with clean, cool water for 3 days.

Exterior applications must be protected from rain, snow and other wet conditions for at least 7 days with temperature above 50° F (10° C). If inclement weather is expected, protect the work area with tenting at least 1 foot (30 cm) above the finished surface to allow air flow.

Enclose and protect installations and maintain >50° F (10° C) temperatures for at least 72 hours for proper cure.

### Sealing of Grout



# CUSTOM®

# Polyblend®Plus Sanded Grout

---

If the use of a sealer is desired for extra protection, apply a pH-neutral, water-based, penetrating sealer such as AquaMix Sealer's Choice Gold or TileLab Surface Guard. Cleaning of equipment Clean tools and hands with water before the material dries.

## **Cleaning of equipment**

Clean tools and hands with water before the material dries.

## **Health Precautions**

This product contains Portland cement. Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. If eye contact occurs, flush with water for 15 minutes and consult a physician. Use with adequate ventilation; do not breathe dust and wear a NIOSH approved respirator. If ingested, do not induce vomiting; call a physician immediately.

## **Conformance to Building Codes**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**FINAL COLOR SELECTION TO BE DONE ON SITE WITH  
CMC & DESIGN TEAM - SUGGESTIONS FOR PRICING  
SHOWN BELOW**

# CUSTOM's 40 color palette complements and supports today's trends in tile and design.

**#640 Arctic White**

**#381 Bright White**

**#11 Snow White**

**#641 Cool White**

**#642 Ash**

**#545 Bleached Wood**

**#333 Alabaster**

**#10 Antique White**

**#382 Bone**

**#643 Warm Gray**

**#544 Rolling Fog**



**#115 Platinum**



**#546 Cape Gray**



**#386 Oyster Gray**



**#543 Driftwood**



**#542 Graystone**



**#165 Delorean Gray**



**#335 Winter Gray**



**#09 Natural Gray**



**#19 Pewter**



**#644 Shadow**



**#370 Dove Gray**



**#645 Steel Blue**



**#122 Linen**



**#183 Chateau**



**#172 Urban Putty**



**#380 Haystack**



**#186 Khaki**



**#135 Mushroom**



**#145 Light Smoke**



**#541 Walnut**



**#185 New Taupe**



**#105 Earth**



**#59 Saddle Brown**



**#52 Tobacco Brown**



**#646 Coffee Bean**



**#95 Sable Brown**

**#647 Brown Velvet**

**#540 Truffle**

**#60 Charcoal**

**All colors available in all grout types.**

---

**Sample colors shown approximate grout color. Final installed shade may vary with the tile type, color and porosity as well as jobsite conditions and finishing techniques.**

---

## Color Selection Tips

### Complementary

Pick a grout color similar to your tile color to create a uniform look to your floor.



### Contrast

When a contrasting grout color is used, your tile grout lines stand out highlighting tile shapes and patterns creating a checkerboard effect.



Use a qualifying system of eligible surface prep and tile setting products from CUSTOM and we'll warrant the entire tile installation for life, including materials, tile and labor to repair in the event of a defect. See [CustomBuildingProducts.com](http://CustomBuildingProducts.com) for more details.

# Polyblend®Plus Sanded Grout

---

## 7 Product Warranty

Obtain the applicable **LIMITED PRODUCT WARRANTY** at [www.custombuildingproducts.com/product-warranty](http://www.custombuildingproducts.com/product-warranty) or send a written request to Custom Building Products, Inc., Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured under the authority of Custom Building Products, Inc. © 2017 Quikrete International, Inc.

## 8 Product Maintenance

Clean with a pH-neutral cleaner such as [Aqua Mix AquaKleen](#), [Aqua Mix Concentrated Tile & Stone Cleaner](#) or [TileLab Grout & Tile Cleaner](#).

## 9 Technical Services Information

For technical assistance, contact Custom® technical services at 800-272-8786 or visit [custombuildingproducts.com](http://custombuildingproducts.com).

## 10 Filing System

Additional product information is available from the manufacturer upon request.

---

### Related Products

Ceramic Tile Caulk

Commercial 100% Silicone Sealant

TileLab® SurfaceGard® Sealer

StainBlocker for Grout

Polyblend® Non-Sanded Grout



# Polyblend®Plus Sanded Grout

## Coverage

For 25 lb. bag of Polyblend in ft<sup>2</sup> (m<sup>2</sup>) per bag

Tile Size	Joint Width				
	1/8" (3 mm)	3/16" (4.8 mm)	1/4" (6.3 mm)	3/8" (9.5 mm)	1/2" (13 mm)
Width x Length x Thickness					
1" x 1" x 1/4" (2.5 x 2.5 x .64 cm)	54 ft <sup>2</sup> (5 m <sup>2</sup> )	40 ft <sup>2</sup> (3.7 m <sup>2</sup> )	33 ft <sup>2</sup> (3.1 m <sup>2</sup> )	27 ft <sup>2</sup> (2.5 m <sup>2</sup> )	24 ft <sup>2</sup> (2.2 m <sup>2</sup> )
2" x 2" x 1/4" (5 x 5 x .64 cm)	96 ft <sup>2</sup> (8.9 m <sup>2</sup> )	68 ft <sup>2</sup> (6.3 m <sup>2</sup> )	54 ft <sup>2</sup> (5.0 m <sup>2</sup> )	40 ft <sup>2</sup> (3.7 m <sup>2</sup> )	33 ft <sup>2</sup> (3.1 m <sup>2</sup> )
3" x 3" x 1/4" (7.6 x 7.6 x .64 cm)	138 ft <sup>2</sup> (12.9 m <sup>2</sup> )	96 ft <sup>2</sup> (8.9 m <sup>2</sup> )	74 ft <sup>2</sup> (7 m <sup>2</sup> )	54 ft <sup>2</sup> (5 m <sup>2</sup> )	43 ft <sup>2</sup> (4 m <sup>2</sup> )
4.25" x 4.25" x 1/4" (10.8 x 10.8 x .64 cm)	192 ft <sup>2</sup> (17.8 m <sup>2</sup> )	131 ft <sup>2</sup> (12.2 m <sup>2</sup> )	101 ft <sup>2</sup> (9.4 m <sup>2</sup> )	71 ft <sup>2</sup> (6.6 m <sup>2</sup> )	56 ft <sup>2</sup> (5.2 m <sup>2</sup> )
6" x 6" x 1/4" (15.2 x 15.2 x .64 cm)	266 ft <sup>2</sup> (24.7 m <sup>2</sup> )	181 ft <sup>2</sup> (16.8 m <sup>2</sup> )	139 ft <sup>2</sup> (12.9 m <sup>2</sup> )	96 ft <sup>2</sup> (8.9 m <sup>2</sup> )	75 ft <sup>2</sup> (7.0 m <sup>2</sup> )
8" x 8" x 3/8" (20.3 x 20.3 x 1 cm)	234 ft <sup>2</sup> (21.7 m <sup>2</sup> )	158 ft <sup>2</sup> (14.7 m <sup>2</sup> )	121 ft <sup>2</sup> (11.2 m <sup>2</sup> )	83 ft <sup>2</sup> (7.7 m <sup>2</sup> )	64 ft <sup>2</sup> (6 m <sup>2</sup> )
12" x 12" x 3/8" (30.5 x 30.5 x 1 cm)	348 ft <sup>2</sup> (32.3 m <sup>2</sup> )	234 ft <sup>2</sup> (21.7 m <sup>2</sup> )	177 ft <sup>2</sup> (16.5 m <sup>2</sup> )	121 ft <sup>2</sup> (11.2 m <sup>2</sup> )	92 ft <sup>2</sup> (8.6 m <sup>2</sup> )
16" x 16" x 3/8" (40.6 x 40.6 x 1 cm)	462 ft <sup>2</sup> (42.8 m <sup>2</sup> )	310 ft <sup>2</sup> (28.8 m <sup>2</sup> )	234 ft <sup>2</sup> (21.7 m <sup>2</sup> )	158 ft <sup>2</sup> (14.7 m <sup>2</sup> )	121 ft <sup>2</sup> (11.2 m <sup>2</sup> )
18" x 18" x 3/8" (45.7 x 45.7 x 1 cm)	518 ft <sup>2</sup> (48.1 m <sup>2</sup> )	348 ft <sup>2</sup> (32.3 m <sup>2</sup> )	262 ft <sup>2</sup> (24.4 m <sup>2</sup> )	177 ft <sup>2</sup> (16.5 m <sup>2</sup> )	135 ft <sup>2</sup> (12.5 m <sup>2</sup> )
20" x 20" x 3/8" (50.8 x 50.8 x 1 cm)	574 ft <sup>2</sup> (53.4 m <sup>2</sup> )	385 ft <sup>2</sup> (35.8 m <sup>2</sup> )	291 ft <sup>2</sup> (27 m <sup>2</sup> )	196 ft <sup>2</sup> (18.2 m <sup>2</sup> )	149 ft <sup>2</sup> (13.8 m <sup>2</sup> )
24" x 24" x 3/8" (61 x 61 x 1 cm)	688 ft <sup>2</sup> (63.9 m <sup>2</sup> )	461 ft <sup>2</sup> (42.8 m <sup>2</sup> )	348 ft <sup>2</sup> (32.3 m <sup>2</sup> )	234 ft <sup>2</sup> (21.7 m <sup>2</sup> )	177 ft <sup>2</sup> (16.5 m <sup>2</sup> )
6" x 24" x 3/8" (15.2 x 61 x 1 cm)	279 ft <sup>2</sup> (26 m <sup>2</sup> )	189 ft <sup>2</sup> (17.5 m <sup>2</sup> )	143 ft <sup>2</sup> (13.3 m <sup>2</sup> )	98 ft <sup>2</sup> (9.1 m <sup>2</sup> )	75 ft <sup>2</sup> (7 m <sup>2</sup> )
12" x 24" x 3/8" (30.5 x 61 x 1 cm)	461 ft <sup>2</sup> (42.8 m <sup>2</sup> )	310 ft <sup>2</sup> (28.8 m <sup>2</sup> )	234 ft <sup>2</sup> (21.7 m <sup>2</sup> )	158 ft <sup>2</sup> (14.7 m <sup>2</sup> )	121 ft <sup>2</sup> (11.2 m <sup>2</sup> )
6" x 36" x 3/8" (15.2 x 91.4 x 1 cm)	299 ft <sup>2</sup> (27.8 m <sup>2</sup> )	202 ft <sup>2</sup> (18.7 m <sup>2</sup> )	153 ft <sup>2</sup> (14.2 m <sup>2</sup> )	104 ft <sup>2</sup> (9.7 m <sup>2</sup> )	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )
9 x 36" x 3/8" (22.9 x 91.4 x 1 cm)	416 ft <sup>2</sup> (38.6 m <sup>2</sup> )	279 ft <sup>2</sup> (26 m <sup>2</sup> )	211 ft <sup>2</sup> (19.6 m <sup>2</sup> )	143 ft <sup>2</sup> (13.3 m <sup>2</sup> )	109 ft <sup>2</sup> (10.2 m <sup>2</sup> )
12" x 48" x 3/8" (30.5 x 122 x 1 cm)	552 ft <sup>2</sup> (51.3 m <sup>2</sup> )	370 ft <sup>2</sup> (34.4 m <sup>2</sup> )	279 ft <sup>2</sup> (26 m <sup>2</sup> )	189 ft <sup>2</sup> (17.5 m <sup>2</sup> )	143 ft <sup>2</sup> (13.3 m <sup>2</sup> )

For 7 lb bag of Polyblend (sq ft/sq m per bag)

Tile Size	Joint Width				
	1/8" (3 mm)	3/16" (4.8 mm)	1/4" (6.3 mm)	3/8" (9.5 mm)	1/2" (13 mm)
Width x Length x Thickness					
1" x 1" x 1/4" (2.5 x 2.5 x .64 cm)	15 ft <sup>2</sup> (1.4 m <sup>2</sup> )	11 ft <sup>2</sup> (1 m <sup>2</sup> )	9 ft <sup>2</sup> (.9 m <sup>2</sup> )	8 ft <sup>2</sup> (.7 m <sup>2</sup> )	7 ft <sup>2</sup> (.6 m <sup>2</sup> )
2" x 2" x 1/4" (5 x 5 x .64 cm)	27 ft <sup>2</sup> (2.5 m <sup>2</sup> )	19 ft <sup>2</sup> (1.8 m <sup>2</sup> )	15 ft <sup>2</sup> (1.4 m <sup>2</sup> )	11 ft <sup>2</sup> (1 m <sup>2</sup> )	9 ft <sup>2</sup> (.9 m <sup>2</sup> )
3" x 3" x 1/4" (7.6 x 7.6 x .64 cm)	39 ft <sup>2</sup> (3.6 m <sup>2</sup> )	27 ft <sup>2</sup> (2.5 m <sup>2</sup> )	21 ft <sup>2</sup> (1.9 m <sup>2</sup> )	15 ft <sup>2</sup> (1.4 m <sup>2</sup> )	12 ft <sup>2</sup> (1.1 m <sup>2</sup> )
4.25" x 4.25" x 1/4" (10.8 x 10.8 x .64 cm)	54 ft <sup>2</sup> (5 m <sup>2</sup> )	37 ft <sup>2</sup> (3.4 m <sup>2</sup> )	28 ft <sup>2</sup> (2.6 m <sup>2</sup> )	20 ft <sup>2</sup> (1.9 m <sup>2</sup> )	16 ft <sup>2</sup> (1.5 m <sup>2</sup> )
6" x 6" x 1/4" (15.2 x 15.2 x .64 cm)	74 ft <sup>2</sup> (6.9 m <sup>2</sup> )	51 ft <sup>2</sup> (4.7 m <sup>2</sup> )	39 ft <sup>2</sup> (3.6 m <sup>2</sup> )	27 ft <sup>2</sup> (2.5 m <sup>2</sup> )	21 ft <sup>2</sup> (1.9 m <sup>2</sup> )
8" x 8" x 3/8" (20.3 x 20.3 x 1 cm)	66 ft <sup>2</sup> (6.1 m <sup>2</sup> )	44 ft <sup>2</sup> (4.1 m <sup>2</sup> )	34 ft <sup>2</sup> (3.1 m <sup>2</sup> )	23 ft <sup>2</sup> (2.2 m <sup>2</sup> )	18 ft <sup>2</sup> (1.7 m <sup>2</sup> )
12" x 12" x 3/8" (30.5 x 30.5 x 1 cm)	97 ft <sup>2</sup> (9 m <sup>2</sup> )	66 ft <sup>2</sup> (6.1 m <sup>2</sup> )	50 ft <sup>2</sup> (4.6 m <sup>2</sup> )	34 ft <sup>2</sup> (3.1 m <sup>2</sup> )	26 ft <sup>2</sup> (2.4 m <sup>2</sup> )
16" x 16" x 3/8" (40.6 x 40.6 x 1 cm)	129 ft <sup>2</sup> (12 m <sup>2</sup> )	87 ft <sup>2</sup> (8.1 m <sup>2</sup> )	66 ft <sup>2</sup> (6.1 m <sup>2</sup> )	44 ft <sup>2</sup> (4.1 m <sup>2</sup> )	34 ft <sup>2</sup> (3.1 m <sup>2</sup> )
18" x 18" x 3/8" (45.7 x 45.7 x 1 cm)	145 ft <sup>2</sup> (13.5 m <sup>2</sup> )	97 ft <sup>2</sup> (9 m <sup>2</sup> )	73 ft <sup>2</sup> (6.8 m <sup>2</sup> )	50 ft <sup>2</sup> (4.6 m <sup>2</sup> )	38 ft <sup>2</sup> (3.5 m <sup>2</sup> )
20" x 20" x 3/8" (50.8 x 50.8 x 1 cm)	161 ft <sup>2</sup> (14.9 m <sup>2</sup> )	108 ft <sup>2</sup> (10 m <sup>2</sup> )	81 ft <sup>2</sup> (7.6 m <sup>2</sup> )	55 ft <sup>2</sup> (5.1 m <sup>2</sup> )	42 ft <sup>2</sup> (3.9 m <sup>2</sup> )
24" x 24" x 3/8" (61 x 61 x 1 cm)	193 ft <sup>2</sup> (17.9 m <sup>2</sup> )	129 ft <sup>2</sup> (12 m <sup>2</sup> )	97 ft <sup>2</sup> (9 m <sup>2</sup> )	66 ft <sup>2</sup> (6.1 m <sup>2</sup> )	50 ft <sup>2</sup> (4.6 m <sup>2</sup> )
6" x 24" x 3/8" (15.2 x 61 x 1 cm)	78 ft <sup>2</sup> (7.3 m <sup>2</sup> )	53 ft <sup>2</sup> (4.9 m <sup>2</sup> )	40 ft <sup>2</sup> (3.7 m <sup>2</sup> )	27 ft <sup>2</sup> (2.5 m <sup>2</sup> )	21 ft <sup>2</sup> (2.0 m <sup>2</sup> )
12" x 24" x 3/8" (30.5 x 61 x 1 cm)	129 ft <sup>2</sup> (12 m <sup>2</sup> )	87 ft <sup>2</sup> (8.1 m <sup>2</sup> )	66 ft <sup>2</sup> (6.1 m <sup>2</sup> )	44 ft <sup>2</sup> (4.1 m <sup>2</sup> )	34 ft <sup>2</sup> (3.1 m <sup>2</sup> )
6" x 36" x 3/8" (15.2 x 91.4 x 1 cm)	84 ft <sup>2</sup> (7.8 m <sup>2</sup> )	56 ft <sup>2</sup> (5.2 m <sup>2</sup> )	43 ft <sup>2</sup> (4 m <sup>2</sup> )	29 ft <sup>2</sup> (2.7 m <sup>2</sup> )	22 ft <sup>2</sup> (2.1 m <sup>2</sup> )
9 x 36" x 3/8" (22.9 x 91.4 x 1 cm)	116 ft <sup>2</sup> (10.8 m <sup>2</sup> )	78 ft <sup>2</sup> (7.3 m <sup>2</sup> )	59 ft <sup>2</sup> (5.5 m <sup>2</sup> )	40 ft <sup>2</sup> (3.7 m <sup>2</sup> )	31 ft <sup>2</sup> (2.8 m <sup>2</sup> )
12" x 48" x 3/8" (30.5 x 122 x 1 cm)	155 ft <sup>2</sup> (14.4 m <sup>2</sup> )	104 ft <sup>2</sup> (9.6 m <sup>2</sup> )	78 ft <sup>2</sup> (7.3 m <sup>2</sup> )	53 ft <sup>2</sup> (4.9 m <sup>2</sup> )	40 ft <sup>2</sup> (3.7 m <sup>2</sup> )

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions. For more tile and joint sizes, use the [Material Calculator](#) at CustomBuildingProducts.com or contact CUSTOM Technical Services at 800-282-8786.



# OmniGrip® Premium Lightweight Tile Adhesive

## 1 Product Name

OmniGrip® Premium Lightweight Tile Adhesive

## 2 Manufacturer

Custom Building Products  
 Technical Services 10400 Pioneer Boulevard, Unit 3  
 Santa Fe Springs, CA 90670  
 Customer Support: 800-272-8786  
 Technical Services: 800-282-8786  
 Fax: 800- 200-7765  
 Email: [contactus@cbpmail.net](mailto:contactus@cbpmail.net)  
[custombuildingproducts.com](http://custombuildingproducts.com)

## 3 Product Description

A flexible, lightweight, high-polymer adhesive for tile and stone installation. Designed to resist intermittent water exposure and has 33% less shrinkage than traditional adhesives, as well as sag resistance. Ideal for small format for ceramic, mosaic, quarry, pavers, gauged slate, porcelain and gauged stone tile installations on walls, floors or countertops. Recommended for tile up to 12" (30.5 cm) on any side. Can be used with tile up to 15" (38.1 cm) on any side but dry time significantly increases. For tile with any side greater than 15" (38.1 cm) CUSTOM recommends using a polymer modified cement mortar specifically for large format tile.

### Key Features

- High flexibility and bond strength
- 33% less shrinkage than traditional adhesives
- Sag and slip resistant - immediately holds wall tiles in place
- Ideal for small format tile
- Great for tub surrounds or shower walls

### Suitable Tile Types

Vitreous, semi-vitreous or non-vitreous tile: ceramic and impervious porcelain, mosaic, quarry tile, slate and stone.

### Suitable Substrates

- Concrete, mortar beds, masonry, Portland cement plaster
- [WonderBoard® Lite](#), cement backerboards
- Exterior Grade Plywood (EGP) interior residential and light commercial dry areas
- Gypsum wallboard (interior dry areas)
- Existing ceramic tile
- Fully-bonded sheet vinyl flooring
- Plastic laminates
- Cutback adhesive (see preparation instructions)

### Composition of Product

Proprietary blend of acrylic copolymers, calcium carbonate and inorganic materials.

### Benefits of Product in the Installation

- 33% less shrinkage than traditional adhesives for maximum coverage and bond
- Lightweight Weighs 33% less than traditional adhesives
- Exceeds ANSI A136.1, Type 1 standards for prolonged water exposure
- Flexible for increased crack resistance



### Limitations to the Product

- If dry time is a concern due to tile size or other limitations noted, use a traditional polymer modified thinsset mortar
- Do not use over non-porous surfaces such as waterproofing membranes, coated tile backer board and vinyl flooring.
- Do not bond directly to hardwood, Luan plywood, particle board, parquet, cushion or sponge-back vinyl flooring, metal, fiberglass, plastic or OSB panels.
- When setting moisture sensitive natural stone, cement or agglomerate tile, check with Custom Technical Services; use [EBM-Lite™ Epoxy Bonding Mortar 100% Solids](#) or [CEG-Lite™ 100% Solids Commercial Epoxy Grout](#).
- Do not use to install resin-backed marble or stone; use [EBM-Lite™ Epoxy Bonding Mortar 100% Solids](#) or [CEG-Lite™ 100% Solids Commercial Epoxy Grout](#).
- Recommended for interior use only. Do not use for steam rooms, shower floors or underwater. For those installations, use CUSTOM® Polymer-Modified Mortar Systems.
- Not for use over radiant heat systems.
- Installation dry time varies depending on tile size and density, substrate porosity and ambient conditions.
- Do not use to install fixtures, ungauged natural stone, gauged stone thicker than 3/8" (9.5 mm), transparent glass tile, translucent stone, Saltillo pavers or lug back tile on floors.

### Packaging

- 1 gal (3.78 L) pail
- 3.5 gal (13.25 L) pail
- 1 qt (0.95 L) pail Canada only
- Color: White

## 4 Technical Data

### Applicable Standards

American National Standards Institute (ANSI) ANSI A108.4 and A136.1, Type 1 American National Standards for the Installation of Ceramic Tile

Tile Council of North America (TCNA) TCNA Handbook for Ceramic Tile Installation, TCNA Method EJ171



# OmniGrip® Premium Lightweight Tile Adhesive

## Technical Chart

Property	Test Method	Requirement	Typical Results
Open Time			> 60 Minutes
Adjustment Time			> 60 Minutes
Freeze-Thaw Stability			Stable
Shear Bond Strength			
7 Day Dry	A136.1 Section 6.2.3.1	> 50 psi	Pass
28 Day Dry	A136.1 Section 6.2.3.3	> 50 psi	Pass
Type I After Water Immersion	A136.1 Section 6.2.3.2	> 50 psi	Exceeds
Heat Resistance	A136.1 Section 6.2.3.5	> 10 lbs. per tile	Pass
Impact Resistance	A136.1 Section 6.2.3.6	Tile Remain Bonded	Pass
Staining	A136.1 Section 6.3	< 70% Penetration	Pass
Resistance to Mold Growth	A136.1 Section 6.4	No Growth	Pass

## Environmental Consideration

Custom® Building Products is committed to environmental responsibility in both products produced and in manufacturing practices. Use of this product can contribute towards LEED® v3 certification:

- Up to 2 points towards MR Credit 5, Regional Materials
- Up to 1 point towards IEQ Credit 4.1, Low-Emitting Materials – Adhesives & Sealants

## 5 Instructions

### General Surface Prep

**USE CHEMICAL-RESISTANT GLOVES, such as nitrile, when handling product.**

Surfaces must be structurally sound, clean, dry and free from grease, oil, dirt, curing compounds, sealers, adhesives or any other contaminant that would prevent a good bond. Glossy or painted surfaces must be sanded, stripped and cleaned of waxes, dirt or any contaminants. Concrete must be cured 28 days and accept water penetration. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a broomed or brushed finish to enhance the bond. Plywood flooring including those under resilient flooring must be structurally sound and meet all ANSI and deflection requirements. For questions about proper subfloor installation, call Technical Services. Smooth concrete surfaces, existing glazed tile, terrazzo, or polished stone should be roughened or scarified. Sheet vinyl must be well-bonded and stripped of old finish. Roughen the surface by sanding or scarifying, rinse and allow to dry. Expansion joints should never be bridged with setting material. Do not sand flooring materials containing asbestos. Ambient temperature, surfaces and materials should be maintained at a temperature above 50° F (10° C) or below 100° F (38° C) for 72 hours.

## Bonding to Concrete Surfaces

Concrete or plaster must be fully cured and accept water penetration. Test by sprinkling water on various areas of the substrate. If water penetrates, then a good bond can be achieved; if water beads, surface contaminants are present, and loss of adhesion may occur. Contaminants should be mechanically removed before installation. Concrete must be free of efflorescence and not subject to hydrostatic pressure. Concrete slabs should have a broomed or brushed finish to enhance the bond. Smooth concrete slabs must be mechanically abraded to ensure a good bond.

For residential service rating, see TCNA F1160.

## Bonding to Plywood Surfaces

Plywood floors must be structurally sound and must meet all ANSI A108.01 Part 3.4 requirements. See TCNA F142. For questions about proper subfloor installation, call Custom technical services.

## Bonding to Backerboards

As an alternative to an additional layer of plywood, WonderBoard® Backerboard may be installed over non-deflecting plywood subfloors. Refer to TCNA F144 and W244.

## Bonding to Existing Surfacing Material

Resilient flooring or plastic laminates must be well-bonded, as well as clean and free of all contaminants. Roughen the surface by sanding or scarifying; rinse and allow to dry. Do not sand flooring that contains asbestos. For existing well-bonded ceramic tile, mechanically abrade the surface. Rinse and allow to dry. When sanding, an approved respirator should be used.

## Bonding to Cutback Adhesive

Adhesive layers must be removed, as they reduce mortar bond strength to cement surfaces. Use extreme caution; adhesives may contain asbestos fibers. Do not sand or grind adhesive residue, as harmful dust may result. Never use adhesive removers or solvents, as they soften the adhesive and may cause it to penetrate into the concrete. Adhesive residue must be wet-scraped to the finished surface of the concrete, leaving only the transparent staining from the glue. To determine bond strength, do a test bond area before starting. Refer to the RFCI Pamphlet, "Recommended Work Practices for Removal of Resilient Floor Coverings", for further information.

## Movement Joint Placement

Expansion joints and cold joints, as described in ANSI A108.01, should never be bridged with setting material. They must be brought through the tile work and filled with an appropriate elastomeric sealant, such as Custom's® 100% Silicone. Contact Custom's® Technical Services for the proper treatment of control or saw cut joints. Refer to TCNA EJ171 for perimeter and field movement joints.

## Mixing Procedures

Product is Ready-to-Use. Reseal remaining product in original container for future use.



# OmniGrip® Premium Lightweight Tile Adhesive

## Application of Product

INSTALLATION TO CONFORM TO ANSI A108.4. Use a properly-sized notch trowel to ensure proper coverage under tiles. Using flat side of trowel, apply skim coat of adhesive with appropriate size trowel. Apply additional adhesive with notch side of trowel held at a 45° angle to the surface, combing in one direction. Press tile firmly into place in a perpendicular motion across ridges, moving back and forth. Perpendicular pressing flattens ridges and closes valleys allowing maximum coverage. With some tile, back-buttering is advisable. Adjust tile promptly and beat in with a beating block and rubber mallet. Periodically pull up a tile and check the back to ensure complete coverage with the adhesive. Do not apply more adhesive than can be covered with tile in 30 minutes. If adhesive starts to skin over (not sticky), retrowel before setting tile. Do not apply more adhesive than is necessary to achieve a sufficient bond.

## Curing of Product

Minimum dry time for 8" x 8" (20.3 cm x 20.3 cm) tile is 24-72 hours before applying grout. Dry time will be extended if using larger tiles, bonding to non-porous surfaces, in high humidity, or if temperature is below 60 degrees F (15 degrees C). Do NOT apply excess adhesive.

## Cleaning of equipment

Remove fresh adhesive from tile surfaces with a damp cloth. Clean tools in warm soapy water.

## Storage

Store in a cool, dry area.

## Health Precautions

This product contains petroleum distillates. Avoid eye contact or prolonged contact with skin. If ingested, do not induce vomiting; call a physician immediately. Use with adequate ventilation.

## Conformance to Building Codes

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

## 6 Availability & Cost

Location	Item Code	Size	Color	Package
USA	OGA1-2	1 gal (3.78 L)	White	Pail
USA	OGA3	3 1/2 gal (13.25 L)	White	Pail
Canada	COGAQT	1 qt (.946 L)	White	Pail
Canada	COGA1-2	1 gal (3.78 L)	White	Pail
Canada	COGA3	3 1/2 gal (13.25 L)	White	Pail

## 7 Product Warranty

Obtain the applicable **LIMITED PRODUCT WARRANTY** at [www.custombuildingproducts.com/product-warranty](http://www.custombuildingproducts.com/product-warranty) or send a written request to Custom Building Products, Inc., Five Concourse Parkway, Atlanta, GA 30328, USA. Manufactured under the authority of Custom Building Products, Inc. © 2017 Quikrete International, Inc.

When OmniGrip® Maximum Strength Adhesive is used as a part of a qualifying full installation system of CUSTOM products, the installation can qualify for up to a 15 year system warranty. CUSTOM will repair and/or replace, at its discretion, the affected area of the system. For more information, find details and limitations to this warranty at [custombuildingproducts.com](http://custombuildingproducts.com).

## 8 Product Maintenance

Properly installed product requires no special maintenance.

## 9 Technical Services Information

For technical assistance, contact Custom technical services at 800-282-8786 or visit [custombuildingproducts.com](http://custombuildingproducts.com).

## 10 Filing System

Additional product information is available from the manufacturer upon request.

## Expected Wear

Properly installed tile will last for more than 60 years.

## Related Products

Polyblend® Sanded Grout

Fusion Pro® Single Component® Grout

CEG-Lite™ 100% Solids Commercial Epoxy Grout

Prism® Ultimate Performance Grout

CEG-IG 100% Solids Industrial Grade Epoxy Grout



# CUSTOM®

# OmniGrip® Premium Lightweight Tile Adhesive

---

## Coverage

SQUARE FOOT COVERAGE PER GALLON (SQUARE METER PER 3.78 L)

Trowel Size	Min Coverage	Max Coverage
3/16" x 5/32" (5 x 4 mm) V-notch for tile up to 6" (15 cm) on any one side	40 sq. ft. (3.7 M <sup>2</sup> )	60 sq. ft. (5.6 M <sup>2</sup> )
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) Sq notch for tiles up to 12" (30 cm) on any one side	15 sq. ft. (1.4 M <sup>2</sup> )	25 sq. ft. (2.3 M <sup>2</sup> )
1/4" x 3/8" x 1/4" Sq notch for tiles up to 15" (38.1 cm) on any one side	10 sq. ft. (.93 M <sup>2</sup> )	14 sq. ft. (1.4 M <sup>2</sup> )

Recommended minimum coverage (80% for dry areas and 95% for wet areas and exteriors. Back buttering may be necessary. For any tile with the longest side 15" +, use a medium bed mortar from CUSTOM designed for large format and heavy tile.

Chart for estimating purposes. Coverage may vary based on installation practices and jobsite conditions. For more sizes, use the material calculator at [CustomBuildingProducts.com](http://CustomBuildingProducts.com) or contact CUSTOM Technical Services at 800-282-8786.



# CUSTOM®



A part of ReStart® program



TVOC ≤ 10 µg/m<sup>3</sup>



Cradle to Cradle certified

Rapidly Renewable Resources

All profiles 2.3%

# 9-08 - Rubber Cove Base

3 standard heights: 2.5" (64 mm),  
4" (102 mm) or 6" (153 mm)

Thermoset rubber (type TS) 1/8" (3.175 mm)

Standard heights available in toe or toeless

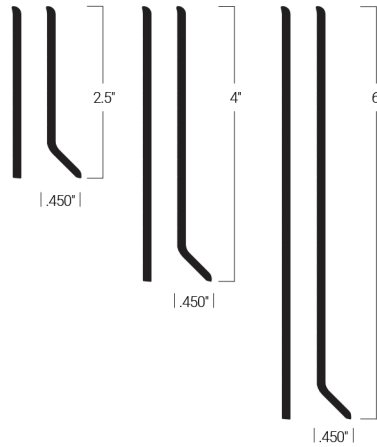
4' sections and coils available

Manufactured inside and outside corners available

**Match existing color and profile , TYP.**

## BaseWorks® Thermoset Rubber Wall Base.

A natural fusion of aesthetics, performance and sustainability, BaseWorks® rubber wall base delivers pure, uniform color and an attractive matte finish. Its flexibility makes installation quick, easy and inexpensive. Plus, it won't fade, crack or separate from the wall.



**color palette availability**  
See Color Guide for Availability  
\*Not available in metallic colors

## Tarkett Wall Bases. Tie it together.

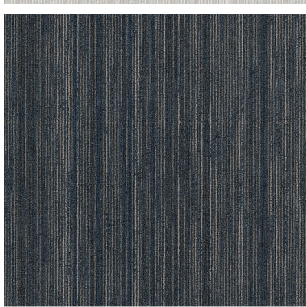
The connecting space between wall and floor presents an opportunity to add color, pattern, clean lines, lasting protection—or all of the above. With the most comprehensive collection of wall borders in the country, we make it easy to unify your space with the perfect finishing touch.

	TV Thermoplastic Vinyl*	TP Thermoplastic Rubber	TS Thermoset Rubber*
Phthalate Free	✓	✓	✓
Bio-Based Content			✓
100% Recyclable	✓	✓	✓
10%+ Recycled Content	✓	✓	
Material Assessment Cradle to Cradle Certified <sup>CM</sup> V.3 Silver			✓
ColorMatch®	✓	✓	✓
No Dye Lots	✓	✓	✓

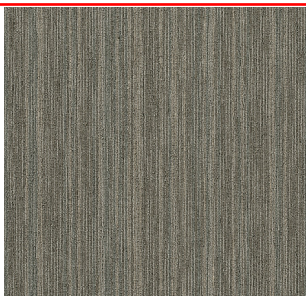
\*Not available in Metallics



45100 Brilliant



45405 Cleverish



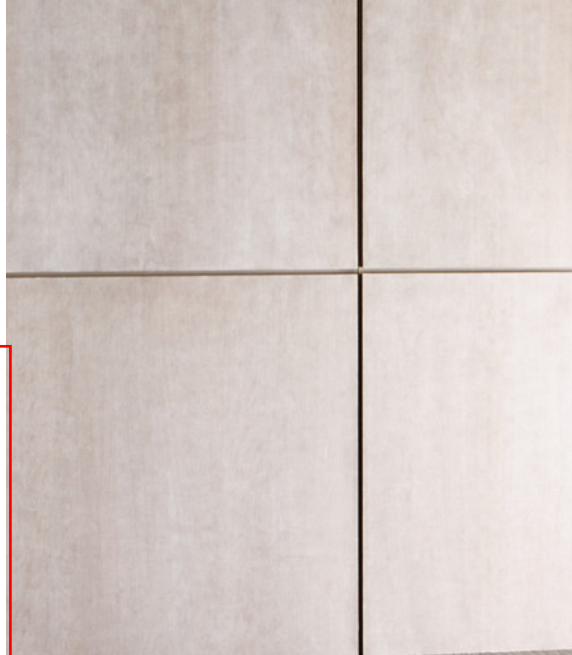
45505 Masterful



45705 Scholarly



45710 Smarts

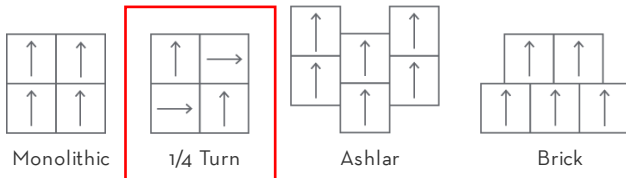


45515 Sharp

Style Name	<b>INTELLECT</b>	
Collection Name	<b>Design Smart</b>	
Style Number	<b>54845</b>	
Product Type	<b>Carpet Tile</b>	
Dye Method	<b>Solution Dyed</b>	
Primary Backing	<b>Synthetic</b>	
Traffic Rating	<b>Heavy</b>	
Protective Treatments	<b>SSP Shaw Soil Protection</b>	
	U.S.	Metric
Product Size	<b>24 in x 24 in</b>	<b>6096 cm x 6096 cm</b>
Area Per Carton	<b>80 ft<sup>2</sup></b>	<b>743 m<sup>2</sup></b>
Pieces Per Carton	<b>20</b>	
Gauge	<b>1/10 in</b>	<b>3937 per 10 cm</b>
Stitches	<b>9 per in</b>	<b>37 per 10 cm</b>
Finished Pile Thickness	<b>0.082 in</b>	<b>2.08 mm</b>
Average Density	<b>6146 oz/yd<sup>3</sup></b>	
Total Thickness	<b>0.249 in</b>	<b>6.32 mm</b>
Tufted Weight	<b>14 oz/yd<sup>2</sup></b>	<b>474.7 g/m<sup>2</sup></b>



## Recommended Installation Methods



## Performance Testing

Pill Test	<b>Pass</b>
Radiant Panel	<b>Class I</b>
NBS Smoke	<b>Less than 450</b>
Electrostatic Propensity	<b>Less than 3.5 kv</b>
CRI Greenlabel Plus	<b>GLP2671</b>

Test Reports may be included or listed by the manufacturing/inventory style number as opposed to the noted selling style number.

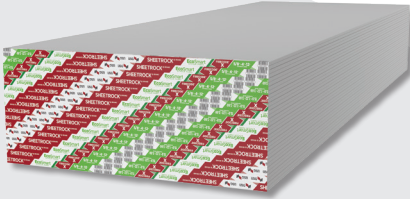
## Warranties

**Carpet Tile 15 year Commercial Limited Warranty with Stain and Color for StrataWorx**

Specifications are subject to nominal manufacturing variance. Material supply and/or manufacturing processes may necessitate changes without notice.



# USG SHEETROCK® BRAND ECOSMART PANELS FIRECODE® X



## Sustainable and ultralightweight 5/8 in. (15.9 mm) enhanced proprietary Type X panels for interior wall and ceiling applications

- Meet Architecture 2030 Challenge for Products
  - Up to 21% less global warming potential (GWP)<sup>1</sup>
  - Up to 22% less weight reduces transportation fuel energy by up to 20%
- Living Building Challenge™ Red List Free
- Contain 100% USDA certified biobased content
- Up to 94.6% recycled content (regionally available)
- Achieved GREENGUARD Gold Certification and qualifies as a low VOC emitting material (meets CA 01350)
- USGBC® LEED® v4—may assist in achieving additional credits
- Underwriters Laboratories Inc. (UL) Classification as to fire resistance, surface-burning characteristics and noncombustibility
- Comply with ASTM C1396, *Standard Specification for Gypsum Board*, for 5/8 in. (15.9 mm) and Type X gypsum wallboard
- Offer comparable sound, strength and sag resistance to standard 5/8 in. (15.9 mm) Type X
- Listed by UL in the most widely specified wall, column, floor- and roof-ceiling assemblies and horizontal membranes (refer to published designs for complete details)

### Note:

1. Compared to standard 5/8 in. (15.9 mm) Type X gypsum panels as presented in the Gypsum Association's *5/8 in. (15.9 mm) Type X Conventional Gypsum Board Environmental Product Declaration* (EPD 10270).

## DESCRIPTION

USG Sheetrock® Brand EcoSmart Panels Firecode® X (UL Type ULIX™) are lightweight 5/8 in. (15.9 mm) enhanced proprietary Type X gypsum panels that have been formulated to achieve all of the same strength and performance characteristics as standard 5/8 in. (15.9 mm) USG Sheetrock® Brand Firecode® X Panels at a lower environmental impact and reduced weight. The panels feature an innovative noncombustible gypsum core that is encased in 100% recycled face and back papers that form a high strength-to-weight ratio composite design. The face paper is folded around the long edges to reinforce and protect the core, and the ends are cut square and even. The long edges of the panels are tapered, allowing joints to be reinforced and concealed with USG Sheetrock® Brand joint treatment systems. The panels are UL Classified for fire resistance and can be used in any UL Design in which UltraLight Innovation Type X (ULIX™) panels are listed. On the face along the long edge of each panel, the UL Type Designation is printed for easy identification by building inspectors.

## INTENDED FOR

- Commercial or residential applications where 5/8 in. (15.9 mm) Type X or enhanced proprietary Type X panels are required
- New or repair and remodel construction
- Load-bearing and nonload-bearing wood- or steel-framed fire-rated walls and ceilings
- Wall, column, floor- and roof-ceiling assemblies and horizontal membranes (refer to published designs for complete details)

## LIMITATIONS

1. Avoid exposure to sustained temperatures exceeding 125°F (52°C).
2. Avoid exposure to excessive, repetitive or continuous moisture before, during and after installation. Eliminate sources of moisture immediately.
3. Must be stored off the ground and under cover in accordance with Gypsum Association's GA-801, *Handling and Storage of Gypsum Panel Products*.

## INTERIOR INSTALLATION, FINISHING AND DECORATING INSTALLATION

For maximum framing spacing in non-fire-resistance-rated applications of gypsum panel products, refer to Gypsum Association's GA-216, *Specifications for the Application and Finishing of Gypsum Panel Products* or ASTM C840, *Standard Specification for Application and Finishing of Gypsum Board*. For fire-resistance-rated applications, refer to the published UL Design or GA File Number.

### Maximum Framing Spacing for Single-Layer Application

Location	Gypsum Panel Thickness	Gypsum Panel Orientation to Framing	Maximum Framing Spacing OC
Ceilings <sup>2</sup>	5/8 in. (15.9 mm)	Parallel	16 in. (406 mm)
		Perpendicular	24 in. (610 mm)
Walls	5/8 in. (15.9 mm)	Parallel	24 in. (610 mm)
		Perpendicular	24 in. (610 mm)

### Maximum Framing Spacing for Multi-Layer Application Without Adhesive Between Layers

Location	Gypsum Panel Thickness	Gypsum Panel Orientation to Framing	Maximum Framing Spacing OC
Ceilings <sup>2</sup>	5/8 in. (15.9 mm)	Parallel	16 in. (406 mm)
		Perpendicular	24 in. (610 mm)
Walls	5/8 in. (15.9 mm)	Parallel	24 in. (610 mm)
		Perpendicular	24 in. (610 mm)

#### Note:

2. On ceilings to receive water-based texture material, 5/8 in. (15.9 mm) gypsum board shall be applied either parallel to framing spaced at 16 in. (406 mm) OC or perpendicular to framing spaced maximum 24 in. (610 mm) OC. See Appendix A.3 of Gypsum Association's GA-216, *Specifications for the Application and Finishing of Gypsum Panel Products* for more information.

## FINISHING AND DECORATING

For high-quality finishing results, USG recommends USG Sheetrock® Brand finishing products.

Painting products and systems should be used that comply with recommendations and requirements in Appendices of ASTM C840. For priming and decorating with paint, texture or wall covering, follow manufacturer's directions for materials used. Gypsum Association's GA-214, *Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels* should be referred to in order to determine the level of finishing needed to ensure a surface properly prepared to accept the final decoration.

All surfaces, including applied joint compound, must be thoroughly dry, dust-free and not glossy. Prime with USG Sheetrock® Brand First Coat™ Primer or with an undiluted, interior latex flat paint with high-solids content. Allow to dry before decorating.

To improve fastener concealment where gypsum panel walls and ceilings will be subjected to critical artificial or natural lighting, or will be decorated with a gloss paint (eggshell, semigloss or gloss), the gypsum panel should be skim coated with joint compound. This equalizes suction and texture differences between the drywall face paper and the finished joint compound before painting. When a Level 5 finish is required, use USG Sheetrock® Brand Tuff-Hide™ Primer-Surfacer. See *USG Sheetrock® Brand Tuff-Hide™ Primer-Surfacer Submittal Sheet (J1613)* for limitations and application instructions.

For more information, refer to USG literature *Finishing & Decorating Gypsum Panels White Paper (J2010)*.

## TEST DATA

Property		ASTM Test Method	Requirement	UL Type ULIX™
<b>Noncombustibility</b>		E136	Noncombustible	Meets
<b>Surface-burning characteristics</b>	Flame spread	E84	Flame Spread Index, not greater than 25 <sup>3</sup>	5
	Smoke developed	E84	—	5
	Class A	E84	Flame spread not greater than 25 and smoke developed not greater than 450	Meets
<b>Core hardness</b>	Field	C473 (B)	Not less than 11 lbf (49 N) <sup>3</sup>	Meets
	End	C473 (B)	Not less than 11 lbf (49 N) <sup>3</sup>	Meets
	Edge	C473 (B)	Not less than 11 lbf (49 N) <sup>3</sup>	Meets
<b>Flexural strength</b>	Parallel	C473 (B)	Not less than 46 lbf (205 N) <sup>3</sup>	Meets
	Perpendicular	C473 (B)	Not less than 147 lbf (654 N) <sup>3</sup>	Meets
<b>Humidified deflection</b>		C473	Not greater than 5/8 in. (15.9 mm) <sup>3</sup>	Meets
<b>Nail pull resistance</b>		C473 (B)	Not less than 87 lbf (387 N) <sup>3</sup>	Meets

**Note:**

3. Per ASTM C1396 for 5/8 in. (15.9 mm) gypsum wallboard.

## PRODUCT DATA

	UL Type ULIX™
<b>Thickness</b>	5/8 in. (15.9 mm)
<b>Lengths<sup>4</sup></b>	8-16 ft. (2438-4877 mm)
<b>Width</b>	4 ft. (1219 mm), 54 in. (1372 mm)
<b>Weight<sup>5</sup>, nominal</b>	1.8 lb./sq. ft. (8.8 kg/sq. m.)
<b>Edges</b>	Tapered
<b>Packaging</b>	Two panels per bundle

**Notes:**

- Other sizes available by special order. Check with your local USG representative for availability.
- Represents approximate weight for design and shipping purposes. For specific product weight in your area, contact your local USG representative or call the Customer Service Center at 800 950-3839.

## COMPLIANCE

- Comply with ASTM C1396 for 5/8 in. (15.9 mm) and Type X gypsum wallboard
- Classified as a Class A Interior Finish Material per the International Building Code® (IBC®)
- UL Classification as to fire resistance, surface-burning characteristics and noncombustibility
- Meet Architecture 2030 Challenge Criteria for Products
- Living Building Challenge™ Red List Free
- USDA Certified Biobased Product
- Achieved GREENGUARD Gold Certification and qualifies as a low VOC emitting material (meets CA 01350)

## SUBMITTAL APPROVALS

<b>Job Name</b>	
<b>Contractor</b>	<b>Date</b>

**PRODUCT INFORMATION**

See usg.com for the most up-to-date product information.

GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit ul.com/gg.

**CAUTION**

Dust may cause irritation to eyes, skin, nose, throat and upper respiratory tract. Cut and trim with a utility knife or hand saw to minimize dust levels. Power tools must be equipped with a dust collection system. Wear eye, skin and respiratory protection if necessary. If eye contact occurs, flush thoroughly with water for 15 minutes. If irritation persists, call a physician. Do not swallow. If swallowed, call a physician. For more information call Product Safety: 800 507-8899 or see the SDS at usg.com.

**KEEP OUT OF REACH OF CHILDREN**

**TRADEMARKS**

The trademarks USG, FIRECODE, FIRST COAT, SHEETROCK, TUFF-HIDE, ULIX, IT'S YOUR WORLD. BUILD IT., the USG logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates. The trademarks IBC and INTERNATIONAL BUILDING CODE are trademarks of International Code Council, Inc. The trademarks LEED and USGBC are trademarks of U.S. Green Building Council. The trademark ARCHITECTURE 2030 is a trademark of Architecture 2030 Corporation. The trademarks DECLARE and LIVING BUILDING CHALLENGE are trademarks of INTERNATIONAL LIVING FUTURE INSTITUTE. USDA BIOPREFERRED is a trademark of United States Department of Agriculture.

**NOTE**

Products described here may not be available in all geographic markets. Consult your USG Company sales office or representative for information. The information in this document is subject to change without notice. USG Corporation assumes no responsibility for any errors that may inadvertently appear in this document.

**NOTICE**

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

**SAFETY FIRST!**

Follow good safety and industrial hygiene practices during handling and installation of all products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read Safety Data Sheets and related literature on products before specification and/or installation.



800 USG.4YOU  
800 (874-4968)  
usg.com

Manufactured by  
United States Gypsum Company  
550 West Adams Street  
Chicago, IL 60661

WB2859-USA-ENG/rev. 5-21  
© 2021 USG Corporation and/or  
its affiliates. All rights reserved.  
Printed in U.S.A.



# USG DUROCK® BRAND CEMENT BOARD WITH EDGE GUARD™



## DESCRIPTION

### Backerboard for tile and exterior finish systems

- Enhanced proprietary edge performance prevents spinout and crumbling
- Easy to cut and fasten
- Water durable and mold resistant
- Warranted for interior and exterior applications
- Exceptional tile bond
- Noncombustible

USG Durock® Brand Cement Board with EdgeGuard™ offers architects, builders and tile contractors a strong, water-durable tile base for tub and shower areas. Also an ideal underlayment for tile on floors and countertops in new construction and remodeling. Board is readily applied over wood or steel framing spaced 16 in. (406 mm) o.c. with corrosion-resistant wood screws, steel screws or hot-dipped galvanized roofing nails. After joints are treated, wall or floor tile is applied using latex-fortified mortar or Type I organic adhesive.

USG Durock® Brand Cement Board with EdgeGuard is preferred by many applicators as a base for directly applied finishes, tile, stone and thin brick used in building exteriors.

The 1/2 in. (12.7 mm) and 5/8 in. (15.9 mm) panels are Underwriters Laboratories Inc. (UL) Classified for fire resistance, and may be used in any UL Design where Type DCB panels are listed.

## PRODUCT DATA

### SIZES AND PACKAGING

Size (thickness x width x length) <sup>1</sup>	Units (pcs) <sup>2</sup>
1/4 in. x 3 ft. x 5 ft. (6.4 mm x 915 mm x 1525 mm)	60
1/2 in. x 3 ft. x 5 ft. (12.7 mm x 915 mm x 1525 mm)	50
1/2 in. x 4 ft. x 8 ft. (12.7 mm x 1220 mm x 2440 mm)	40
5/8 in. x 3 ft. x 5 ft. (15.9 mm x 915 mm x 1525 mm)	40
5/8 in. x 4 ft. x 8 ft. (15.9 mm x 1220 mm x 2440 mm)	32

1. Other lengths available. Contact your USG Sales Representative.
2. Shipped in packaging units as shown.

## STANDARDS

USG Durock® Brand Cement Board with EdgeGuard exceeds ANSI standards for cementitious backer units (CBU). See ANSI A118.9 for test methods and specifications for CBU and ANSI A108.11 for interior installation of CBU. Exceeds industry standards as an exterior substrate for exterior finishes. Exceeds ASTM C1325 standards for nonasbestos fiber-mat reinforced cementitious backer units.

## AVAILABILITY

USG Durock® Brand Cement Board with EdgeGuard is distributed throughout the United States. Contact a USG sales office or sales person for additional information.

## COMPOSITION AND MATERIALS

USG Durock® Brand Cement Board with EdgeGuard is formed in a continuous process of aggregated portland cement slurry with polymer-coated, glass-fiber mesh completely encompassing edges, back and front surfaces. The edges are formed smooth with a patented poly-propylene fabric-wrapped edge. The ends are square cut.

#### DELIVERY AND STORAGE OF MATERIALS

---

All materials should be delivered and stored in their original unopened package and stored in an enclosed shelter providing protection from damage and exposure to the elements. Even though the stability and durability of USG Durock® Brand Cement Board with EdgeGuard is unaffected by the elements, moisture and temperature variations may have an effect on the bonding effectiveness of basecoats and adhesives. Store all USG Durock® Brand Cement Board with EdgeGuard panels flat.

---

#### ENVIRONMENTAL CONDITIONS

In cold weather and during USG Durock® Brand Cement Board with EdgeGuard panel and tile installation, temperatures within the building shall be maintained within the range of 40 to 100°F (5 to 38°C). Adequate ventilation shall be provided to carry off excess moisture.

---

#### INTERIOR APPLICATIONS

The building shall be enclosed and the HVAC system operating so that wood framing shall reach the moisture content it will reach in service. Do not install board when the board is wet.

---

#### EXTERIOR APPLICATIONS

In exterior applications, USG Durock® Brand Cement Board with EdgeGuard should not be left uncovered for a period of time exceeding 90 days. Discoloration or staining may occur due to exposure to the elements which will not affect performance of the panel. Finishes, leveling/skim coats and basecoats should not be applied to USG Durock® Brand Cement Board with EdgeGuard panel that is wet or frozen or that contains frost. After application, and for at least 24 hours, finishes, leveling/skim coats and basecoats should be effectively protected from rain and excessive moisture. In cold weather and during finish applications, USG Durock® Brand Cement Board with EdgeGuard panel, skim or basecoat, mortar, finish material and air temperature must be at least 40°F (5°C) and must remain at this temperature or higher for at least 24 hours after application. Hot and dry weather may affect working time of leveling/skim or basecoat and finish materials. Under rapid drying conditions, dampening or light fogging of board, leveling/skim or basecoat surface may be required to improve workability.

---

#### PANEL MICROCRACKING

USG Durock® Brand Cement Board with EdgeGuard is formulated to develop fine microcracking (also called multiple cracking) in the panel. The microcracking process helps to evenly relieve the stored strain energy in the product due to handling and installation, external loads and/or panel restrained movement. The presence of microcracks in the panel should not be considered a product defect.

---

#### INSTALLATION

- A.** Install cement board with ends and edges closely abutted, but not forced together. Stagger end joints in successive courses.
- B.** For flooring applications over a wood-based substrate, laminate USG Durock® Brand Cement Board with EdgeGuard to subfloor using Type 1 organic adhesive or latex-modified thin-set mortar suitable for bonding cement board. Fasten to subfloor with 1-1/4 in. (32 mm) USG Durock™ Brand Tile Backer Screws for wood framing (or equivalent) or 1-1/2 in. (38 mm) hot-dipped galvanized roofing nails spaced 8 in. (203 mm) o.c. in both directions with perimeter fasteners at least 3/8 in. (10 mm) and less than 5/8 in. (16 mm) from ends and edges. Drive nails and screws so that bottoms of heads are flush with panel surface to ensure firm panel contact with subfloor. Do not overdrive fasteners. Prefill joints with tile-setting mortar or adhesive and then immediately embed USG Durock™ Brand Tile Backer Tape and level joints.
- C.** For wall application, fasten USG Durock® Brand Cement Board with EdgeGuard panels to framing with specified fasteners. Drive fasteners into field of panels first, working toward ends and edges. Hold panels in firm contact with framing while driving fasteners. Space fasteners maximum 8 in. (203 mm) o.c. for walls, 6 in. (152 mm) o.c. for ceilings, with perimeter fasteners at least 3/8 in. (10 mm) and less than 5/8 in. (16 mm) from ends and edges. Drive nails and screws so bottoms of heads are flush with panel surface to ensure firm panel contact with framing. Do not overdrive fasteners. Approved fasteners include: USG Durock™ Brand Tile Backer Screws for steel framing (or equivalent), 1-1/4 in. (32 mm) and 1-5/8 in. (41 mm) for 14- to 20-gauge steel framing; USG Durock™ Brand Tile Backer Screws for wood framing (or equivalent), 1-1/4 in. (32 mm), 1-5/8 in. (41 mm) and 2-1/4 in. (57 mm) for wood framing. Nails (1-1/2 in. [38 mm] hot-dipped galvanized roofing nails). Prefill joints with tile-setting mortar or adhesive and then immediately embed USG Durock™ Brand Tile Backer Tape and level joints.

## INSTALLATION CONT.

- D. Cement board should be cut to size with a knife and straight edge. A power saw should be used only if it is equipped with a dust-collection device. Installer should wear NIOSH/MSHA-approved dust mask.
- E. If waterproofing is desired, use USG Durock™ Brand Liquid Waterproofing Membrane. See *USG Durock™ Brand Liquid Waterproofing Membrane* submittal sheet (CB817) for product information.

Refer to *USG Durock® Brand Cement Board System Guide* (SA932) for complete installation information, including good design practices. For technical assistance, call USG Technical Service at 800 USG.4YOU (874-4968).

## LIMITATIONS

1. Designed for positive or negative uniform loads up to 60 psf. For complete information on the use of USG Durock® Brand panels in exterior systems, consult uniform load table on Page 4 for applicable positive or negative uniform loads on wall systems.
2. Wall applications: Maximum stud spacing: 16 in. (406 mm) o.c. (24 in. [610 mm] o.c. for cavity shaft wall assembly). Framing shall be designed (based on stud properties alone) not to exceed L/360 deflection for tile and thin brick, L/240 for direct-applied exterior finish systems. Maximum fastener spacing: 8 in. (203 mm) o.c. for wood and steel framing; 6 in. (152 mm) o.c. for ceiling applications.
3. Floor applications: Maximum joist spacing 24 in. (610 mm) o.c. The subfloor system should be designed with a minimum deflection limit of L/360 for the span. Some finish materials may require a more rigid subassembly (such as large format tile and natural stone products). In these cases, follow the manufacturer's minimum requirements. The subfloor should be APA Span-Rated Plywood or OSB with an Exposure 1 classification or better with tongue and groove or back blocked at the unsupported edges.
4. In exterior applications, USG Durock® Brand Cement Board with EdgeGuard should not be left uncovered for a period of time exceeding 90 days. Discoloration or staining may occur due to exposure to the elements which will not affect performance of the panel.
5. Brittle coatings, such as epoxy coatings, are not recommended for use with USG Durock® Brand Cement Board with EdgeGuard. USG Durock® Brand Cement Board with EdgeGuard is intended for use with tile, thin brick and exterior stucco coatings only.
6. Maximum dead load for ceiling system is 7.5 psf.
7. Steel framing must be 20-gauge or heavier.
8. Do not use drywall screws or drywall nails. Do not use drywall joint tape.
9. Do not use 1/4 in. (6.4 mm) USG Durock® Brand Cement Board with EdgeGuard for wall or ceiling applications. 1/4 in. (6.4 mm) USG Durock® Cement Board with EdgeGuard is for use in interior applications only.
10. Do not use USG Durock® Brand Cement Board with EdgeGuard with vinyl flooring.
11. USG Durock® Brand Cement Board with EdgeGuard is not designed for use as a structural panel.
12. Maximum installed weight of the finish system should not exceed 15 psf.
13. USG Durock® Brand Cement Board with EdgeGuard panels should not be used in areas where they are exposed to temperatures that exceed 200°F (93°C).
14. In locations close to salt water or other challenging environments, design professionals should consider the use of stainless steel fasteners.
15. Do not use lightweight setting-type joint compounds or ready-mix joint compounds directly over USG Durock® Brand Cement Board with EdgeGuard.

## TECHNICAL DATA

Property	Unit of Measure	ASTM Test Method	5/8 in. (15.9 mm) USG Durock® Brand Cement Board with EdgeGuard™	1/2 in. (12.7 mm) USG Durock® Brand Cement Board with EdgeGuard™	1/4 in. (6.4 mm) USG Durock® Brand Cement Board with EdgeGuard™ Underlayment
<b>Flexural strength</b>	psi (MPa)	C947	> 480	> 750	> 1000 (6.9)
<b>Indentation strength</b>	psi (MPa)	D2394	> 1250	> 1250	> 1250 (8.6)
<b>Shear bond strength</b>	psi	ANSI A118.4	> 50	> 50	> 50
<b>Nail-pull resistance</b>	lb. (0.375 in. [10 mm] head diameter, wet or dry)	C473	> 90	> 90	—
<b>Weight</b>	psf (kg/m²)	C473	3	2.4	< 1.9 (1.9)
<b>Freeze/thaw resistance</b>	procedure B, number of cycles with no deterioration	C666	100	100	100
<b>Mold resistance</b>	—	G21 D3273	Rating 0, No growth 10/10	Rating 0, No growth 10/10	Rating 0, No growth 10/10
<b>Noncombustibility</b>	Pass/Fail	E136	Pass	Pass	Pass
<b>Surface-burning characteristics</b>	flame/smoke	E84	0/0	0/0	0/0
<b>Thermal</b>	"R"/k value	C518	.49/1.27	0.39/1.27	—
<b>Standard method for evaluating ceramic floor tile installation systems</b>	Passes cycles 1-6	C627	Light commercial	Light commercial	Light commercial
<b>Minimum bending radius</b>	ft. (requires special framing details available upon request)	—	6	6	—

### PRODUCT INFORMATION

See usg.com for the most up-to-date product information.

#### DANGER

Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause cancer by inhalation of respirable crystalline silica. Do not handle until all safety precautions have been read and understood. Avoid breathing dust. Use only in a well-ventilated area, wear a NIOSH/MSHA-approved respirator. Wear protective gloves/protective clothing/eye protection. If swallowed, inhaled, or skin irritation occurs get medical attention. If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses and continue rinsing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Dispose of in accordance with local, state, and federal regulations. For more information call Product Safety: 800 507-8899 or see the SDS at usg.com

**KEEP OUT OF REACH OF CHILDREN.**

#### TRADEMARKS

The trademarks USG, DUROCK, EDGEGUARD, IT'S YOUR WORLD. BUILD IT., the USG logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.

#### NOTE

The information in this document is subject to change without notice. USG Corp. assumes no responsibility for any errors that may inadvertently appear in this document. Consult your USG Company sales office or representative for information. Products described here may not be available in all geographic markets.

#### NOTICE

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

#### SAFETY FIRST!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.

### UNIFORM LOAD—1/2 IN. (12.7 MM) USG DUROCK® BRAND CEMENT BOARD WITH EDGEGUARD™

Stud Spacing	Fastener Spacing	Design Wind Load (1/240)	Design Wind Load (1/360)
12 in. (305 mm) o.c.	8 in. (203 mm) o.c.	35 psf	35 psf
	6 in. (152 mm) o.c.	44 psf	44 psf
16 in. (406 mm) o.c.	8 in. (203 mm) o.c.	27 psf	21 psf
	6 in. (152 mm) o.c.	31 psf	21 psf
24 in. (610 mm) o.c. (for shaft wall assemblies only)	8 in. (203 mm) o.c.	12 psf	8 psf
	6 in. (152 mm) o.c.	12 psf	8 psf

### SUBMITTAL APPROVALS

<b>Job Name</b>	
<b>Contractor</b>	<b>Date</b>

800 USG.4YOU  
800 (874-4968)  
usg.com

Manufactured by  
United States Gypsum Company  
550 West Adams Street  
Chicago, IL 60661

CB399EG-USA-ENG/rev. 7-22  
© 2022 USG Corporation and/or  
its affiliates. All rights reserved.  
Printed in USA

**USG**  
IT'S YOUR WORLD. BUILD IT.®



Random Textured and Scored ceiling panels offer a basic visual with noise reducing properties. Panels are available in 24-in x 24-in tegular and square styles, a 24-in x 48-in square style, and a 24-in x 48-in scored tegular style.

#### FEATURES & BENEFITS

- Great for new, replacement and matching ceilings in basements and light commercial spaces
- Acoustical; reduce noise 55%
- Non-directional image reduces labor and scrap
- 9767 is scored to give a 2-ft x 2-ft visual on a 2-ft x 4-ft panel
- Installs in Prelude® 15/16-in suspension system