



# PermaBond<sup>®</sup> Medium Bed 919

## Medium Bed Portland Cement Mortar

### PRODUCT DESCRIPTION

PERMABOND<sup>®</sup> MEDIUM BED is a dry-set mortar composed of Portland cement, sand and special chemical additives. It is used as a bond coat for setting thin marble, granite and other larger unit ceramic tiles over a variety of substrates.

#### ▶ BASIC USE

PERMABOND MEDIUM BED is specifically formulated to hold large tile and marble units in place on vertical surfaces. It is also effective on horizontal surfaces; its non-sag properties limit tile settling after placement, thereby reducing slippage. It may be used in a setting bed as thin as 1/8" (3 mm) or as thick as 3/4" (19 mm) after embedding.

PERMABOND MEDIUM BED may be used for setting absorptive, semi-vitreous and vitreous tiles in residential or commercial service areas. Used for interior applications, it has excellent impact resistance, is water cleanable, non-flammable and requires no tile soaking. PERMABOND MEDIUM BED is not affected by prolonged contact with water, but does not form a waterproof barrier.

#### ▶ AREAS OF USE

Suitable backings, when properly prepared, include plumb and true masonry, concrete, gypsum board (*dry interior walls only*), cementitious backer units, cured Portland cement mortar beds, brick, ceramic tile and marble.

#### ▶ LIMITATIONS

PERMABOND MEDIUM BED must not be used directly over wood, asphalt sheeting, vinyl covered wallboard, Masonite<sup>®</sup>, cement asbestos board, metal, glass, plastic, luan plywood or gypsum mortars. Apply in a temperature range of 40°F to 90°F (4°C to 32°C). (Do not allow mortar to freeze for the first 72 hours.) Green or red marbles may warp when installed with setting materials containing water, causing loss of bond and/or damage to the finish. These marbles must be set with COLORSET EPOXY 931.

#### ▶ LIMITATIONS ON TILES

When using PERMABOND MEDIUM BED on vertical surfaces, tiles with surface area of 1 sq. ft. (30 cm<sup>2</sup>) or less shall not exceed 5 lbs. (2.27 kg) per sq. ft. (30 cm<sup>2</sup>). Tile with surface area greater than 1 sq. ft. (30 cm<sup>2</sup>) should be tested to determine suitability of product by installing 3 test areas with the actual tiles and substrate to be used.

#### ▶ APPLICABLE STANDARDS

Conforms to the requirements for dry-set mortars found in ANSI A118.1 and ANSI A108.5. When mixed with liquid latex additive CUREMIX<sup>®</sup> 937, CURECRYLIC<sup>®</sup> PREMIUM 939 or PORCELAIN STONE & TILE 948, conforms to requirements for ANSI A118.4.

Color — White or gray.

Texture — Powder, consisting of Portland cement, graded sand, organic and inorganic chemicals.

#### ▶ Packaging

50 lb. (22.7 kg) multi-wall bags.

### INSTALLATION

#### ▶ PREPARATORY WORK

All surfaces on which tiles are to be set must be dry, structurally sound and not subject to temperatures below 40°F (4°C) or above 100°F (38°C). Detailed installation procedures may be found in the TCA Handbook and ANSI A108.5. Surfaces must be dry and free of all grease, oil, dirt, dust, curing compounds, sealers, coatings, efflorescence, old adhesive residues, gypsum based underlayments and any other foreign matter.

#### ▶ CEMENTITIOUS SUBSTRATES

Cleaning may be accomplished via mechanical sanding, scraping or chipping. Surfaces may be cleaned with muriatic acid if thoroughly flushed and neutralized. (*Use proper precautions.*) It is advisable to dampen dry porous concrete before installing tile with PERMABOND MEDIUM BED.

#### ▶ NON-CEMENTITIOUS SUBSTRATES

Surfaces such as stripwood and old plaster or painted surfaces that provide bonding problems should be covered with a cleavage membrane topped with a 3/8" to 3/4" (9.5 mm to 19 mm) reinforced mortar bed for walls and a 1 1/4" (32 mm) reinforced mortar bed for floors. After a minimum cure of 20 hours, PERMABOND MEDIUM BED can be applied to the mortar bed.

#### ▶ CERAMIC TILE SUBSTRATES

It is absolutely essential that the existing tile be well bonded. The surface must be prepared in accordance with the requirements for cementitious substrates. It is also necessary to abrade the surface to assure proper bonding.

#### ▶ EXPANSION JOINTS

Expansion joints shall be installed in accordance with local building codes. See EJ 171 in TCA Handbook for detailed specifications. Expansion joints, control joints and cold joints shall never be bridged with dry-set mortars.

#### ▶ MIXING

PERMABOND MEDIUM BED should be added to clean potable water, CUREMIX 937, CURECRYLIC PREMIUM 939 or PORCELAIN STONE & TILE 948. Mix thoroughly until smooth and let mortar slake for 15 minutes, then remix. If a mechanical mixer is used, it must be a low RPM (300 or less) to avoid entrapping air into the mortar. Do not add water or additional powder after slaking period.

The proper mortar consistency is such that when applied with a notch trowel to the substrate, the ridges formed in the mortar will not flow or slump.

Do not use mortar after initial set in bucket. During use, remix mortar occasionally.

#### ▶ APPLICATION

Spread a thin layer of mortar with flat side of trowel to key mortar into the substrate. Apply additional mortar to the desired thickness, 3/32" to 3/4" (2.4 to 19 mm) thick. Use a large notch trowel to comb the mortar. Troweled ridges should all be parallel (in one direction) to provide easier adjustment of tiles, reducing slippage. If more mortar is required to achieve 100% coverage of the tiles, "back buttering" may be required. During the setting of tiles, place the tile on the fresh mortar and, while applying pressure, slide the tile back and forth 1/4" to 1/2" (6 to 13 mm) perpendicular (at 90°) to the troweled ridges to align and embed while establishing 100% contact of the mortar to the back of the tile. It is also advisable to occasionally remove a tile to be sure mortar has not skinned over and sufficient transfer is being made. Do not adjust tiles in mortar after they have been set past 15 minutes.

NOTE: As a practical test, it is recommended that 3 or more separate 12 inch square (.3 m<sup>2</sup>) areas minimum of tile be bonded to the properly prepared surface with the actual tile and bonding material that will be used on the finished installation. These should be allowed to cure for 3 to 7 days and then be removed with a hammer and chisel. At this point, one can determine if adequate bond has been obtained or if a problem exists.

#### ▶ CLEANING

Water is all that is needed to remove uncured mortar.

#### ▶ CURING AND GROUTING

A minimum cure is obtained in 12 - 24 hours, depending on ambient temperatures. Normal grouting should be done 48 hours after tile has been set.

**GUARANTEE**

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PERMABOND MEDIUM BED 919 TECHNICAL DATA			
TEST	REQUIREMENT		TYPICAL VALUES
*A. Open Time @ 70°F (21°C)			12 Minutes
*B. Adjustability @ 70°F (21°C)			12 - 15 Minutes
*C. Bucket Life @ 70°F (21°C)			8 Hours
D. Compressive Strength ASTM C-109			>3000 psi (211 kg/cm <sup>2</sup> )
E. Shear Bond ANSI A118.1 Non-Vitreous Tile	7 Days 28 Days	>200 psi (14 kg/cm <sup>2</sup> ) >250 psi (18 kg/cm <sup>2</sup> )	>400 psi (28 kg/cm <sup>2</sup> ) >500 psi (35 kg/cm <sup>2</sup> )
Vitreous (Paver) Tile	7 Days 28 Days	>50 psi (4 kg/cm <sup>2</sup> ) >100 psi (7 kg/cm <sup>2</sup> )	>200 psi (14 kg/cm <sup>2</sup> ) >300 psi (21 kg/cm <sup>2</sup> )
F. Safety—CAUTION: May cause eye, skin or lung injury. Contains free silica. Prolonged exposure to dust may cause delayed lung disease (silicosis). Eliminate exposure to dust. Use NIOSH approved mask for Silica dust. Contains Portland cement. If any cement or cement mixtures get into eye, flush immediately and repeatedly with water, and consult a physician promptly. Freshly mixed cement, mortar, concrete or grout may cause skin injury. Avoid contact with skin where possible and wash exposed skin areas promptly with water.			
KEEP OUT OF REACH OF CHILDREN			
G. Storage Life—One year if kept dry in sealed bag.			

\*These values reflect the results of practical testing methods closely associated with applications in the field.

COVERAGE			
PRODUCT	SQUARE FEET (M <sup>2</sup> ) PER 50 LB. (22.7 KG) BAG		
	1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) Square-Notch Trowel	1/4" x 3/8" x 1/4" (6 x 9.5 x 6 mm) Square-Notch Trowel	1/2" x 1/2" x 1/2" (13 x 13 x 13 mm) Square-Notch Trowel
PERMABOND® MEDIUM BED 919	77 (7.1)	66 (6.1)	40 (3.7)

Members of National Tile Contractors Association,  
Materials & Methods Standards Association, Ceramic Tile Distributors Association.

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