



# Multi-Purpose Thin Set Mortar

*Pre-Blended Mortar for Tile, Marble and Stone Applications*

## DESCRIPTION

**Multi-Purpose Thin Set Mortar** is a cementitious, latex-enhanced, dry set mortar. It is designed for setting tile over various surfaces including concrete, portland cement based mortar beds, existing tile, terrazzo, cement board, stone and exterior grade plywood.

## USES

**Multi-Purpose Thin Set Mortar** is ideal for the installation of non-vitreous (high absorption) and vitreous (low absorption) tile, quarry, pavers, and natural stone for both (exterior and interior) floor and wall applications.

## BENEFITS

- Outstanding workability: Smooth spreading ability lends itself to a quality application
- Strength: Superior bond and flexural strengths
- Resilient: Highly water and impact resistant
- Versatile: Apply over wood, concrete, masonry, ceramic tile, marble, cement backer units
- Tested: Exceeds ANSI 118.4 for latex Portland mortars
- Consistent: Strict Quality Control testing and standards

## STANDARDS

**Multi-Purpose Thin Set Mortar** has been formulated to meet and exceed ANSI A118.4 for latex modified portland cement mortars.

## SURFACE PREPARATION

All surfaces in contact with **Multi-Purpose Thin Set Mortar** shall be free of dirt, oil, grease, laitance and other contaminants that may act as bondbreakers. All unsound concrete should be removed to ensure a good bond.

**Cement Substrates:** Cleaning may be accomplished via mechanical sanding, scraping, or chipping. If muriatic acid is used to clean the surface, it must be flushed and neutralized before receiving tile. It is advisable to roughen smooth concrete surfaces to ensure a good bond. Dampen concrete surfaces prior to placement, but take care to remove standing water.

**Non-Cementitious Substrates:** Exterior grade plywood and cement backerboard must be structurally sound and securely fastened with screw type or ring shank nails. A gap of 1/8"–3/16" shall be left between plywood to allow for expansion. **Note:** All wooden flooring, when placed over floor joist or other systems should be of a design and thickness so as to maintain a substrate of deflection not to exceed 1/360 span, including live load.

**Ceramic Tile Substrates:** The existing tile must be well bonded. Prepare ceramic tile substrates in the same manner as cementitious surfaces. Surface must be thoroughly abraded.

## COVERAGE

Approx. square feet of tile installed per 50 lb (22.7 kg) bag:

1/4" x 1/4" Square Notched Trowel	1/4" x 3/8" Square Notched Trowel	1/2" x 1/2" Square Notched Trowel
77 ft <sup>2</sup>	66 ft <sup>2</sup>	40 ft <sup>2</sup>

## MIXING

For best results, use a mechanical mixer with rotating blades or use a heavy duty 1/2" (15 mm) (or larger) low-speed, corded drill and mixing paddle #6 per ICRI Technical Guideline 320.5. Pre-wet mixer and empty excess water. Place 5.0 quarts of cool, clean potable water per 50 lb (22.7 kg) bag in mixer, then add dry material. Mix on low RPM for a total of 3 to 5 minutes until a homogeneous mixture is achieved. Mix only enough material that can be placed within working time. Let mortar sit undisturbed for 5 minutes then remix. The proper consistency is such that when applied with a notched trowel, the mortar ridges formed will not flow or slump. During use, re-mix the mortar occasionally, but do not re-temper with water as this will cause a loss of bond and compressive strength. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

## PLACING

Apply **Multi-Purpose Thin Set Mortar** with the flat or straight edge of a trowel. This puts irregularities and other material into the surface for maximum adhesion. Comb additional mortar to a depth sufficient to be notched with a suitable trowel that will leave enough mortar for 100% contact with the back of the tile and a mortar bed of 3/32" to 3/16". Immediately press the tiles into place with a slight twisting motion to ensure good contact with the mortar. Adjust tiles and beat in with a block and rubber mallet. "Back butter" large tiles to provide full bedding and firm support. Do not spread more mortar than can be covered with tiles in 15 minutes. Clean all joints and wipe the face of the tile.

## STORAGE

Normal cement storage and handling practices should be observed. Store material in an interior, cool, dry place. Shelf life is one year in original, unopened container.

## LIMITATIONS

In addition to limitations already mentioned, please note the following. Do not apply when the surface or ambient temperature is below 40°F (4°C) or expected to fall below 40°F (4°C) within 24 hours. Do not apply over surfaces that are frozen or contain frost. Allow concrete to fully cure for 28 days before the use of this product. Do not walk on or grout the tile for at least 24 hours after application.



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## PHYSICAL PROPERTIES

All Physical Property testing performed in laboratory conditions of 73.5 ± 3.5°F (23 ± 2°C) and a relative humidity no less than 50% unless otherwise determined by the test method or specification. All results represent **Multi-Purpose Thin Set Mortar** with 5.0 quarts water unless listed otherwise. Tests are conducted under standardized conditions for comparative purposes, and results may not be representative of performance under field conditions.

Property and Test Method		Results		
Compressive Strength ASTM C109	1 Day	3 Days	28 Days	
	500 psi (3.44 MPa)	1,000 psi (6.89 MPa)	1,500 psi (10.34 MPa)	
Rate of Set ASTM C266	Working Time 3:00	Initial 4:30	Final 6:00	
Shear Bond ANSI 118.4	Type	Standard	Multi-Purpose Thin Set Mortar	
	Glazed Wall Tile	>300 psi	7 Days 309 psi 28 Days 323 psi	
	Ceramic (Porcelain) Mosaic Tile	>200 psi	7 Days 337 psi 28 Days 337 psi	
	Quarry Tile	>100 psi	7 Days 183 psi 28 Days 240 psi	

## DANGER

This product contains Crystalline Silica (CAS# 14808-60-7) and Portland Cement (CAS# 65997-15-1). Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.



**WARNING:** Cancer and Reproductive Harm -

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## FIRST AID

If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

## MANUFACTURER/TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets, available online at [www.usspec.com](http://www.usspec.com).

US MIX Co.  
112 South Santa Fe Drive  
Denver, CO 80223  
Tel: 303.778.7227 Fax: 303.722.8426  
Web Site: [www.usspec.com](http://www.usspec.com)

**NOTICE OF LIMITED WARRANTY** US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price. See product packaging for complete limitation of warranties and liability.

**Yield: 50 lb (22.7 kg) will fill approximately 0.43 ft<sup>3</sup> when 5.0 quarts mixing water is used**