

THINSET

## What is Thinset?

In short, thinset is the adhesive mostly commonly used to install ceramic tile. It is a combination of Portland cement, aggregate and latex/polymer additives. It is clarified in ANSI 118.4 Latex-Portland cement mortar. Historically this replaced Dry-set mortars, which does not have any additives, therefore not as strong. Thinset was designed specifically to improve adhesion, reduce water absorption and provide a greater bond strength. All manufacturers have different type thinsets with different qualities in all these areas. There is not a “one size fits all” thinset. Your tile installation will determine the type of thinset needed for your product.

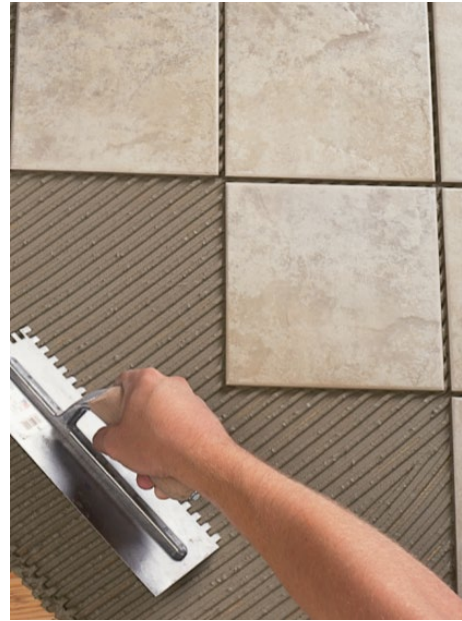
## Types of Thinset

**Standard Thinset** – A basic formula that meets ANSI 118.4. Examples: Laticrete’s 252, 253; Mapei’s UltraFlex 1 & II; Custom’s VersaBond

**Large and Heavy Tile (LHT) thinset** – This is specially formulated to allow the thinset ridges to stand while using a larger notched trowel. This material has limited shrinkage and can have a finished thickness of ½”. This was previously referred to as Medium Bed Mortar. Examples: Laticrete’s LHT, 4XLT; Mapei’s LFT, Custom’s VersaBond LFT

**Glass Tile Adhesive** – a material that is formulated to give the best adhesion for glass tile. Most have a pure white final color and some can be tinted to match the grout.

**Specialty Thinsets** – This a category for materials that may perform multiple functions. For Example, a material that is a thinset, crack isolation and sound control in one. Examples: Laticrete’s 125 TRI MAX



## OTHER SETTING MATERIALS

**Mastic** – a organic glue that has limited use. Not recommended in wet areas.

**Epoxy Mortar** – this is an adhesive that is expensive and more difficult than using thinset. It is very strong and chemical resistant

**Dry Set Mortar** – Thinsets predecessor and still used in some applications. It is inexpensive but needs to be installed by a professional.

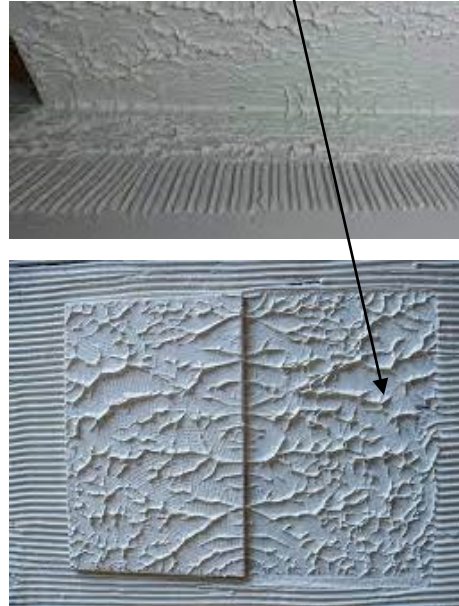
## Properties

Thinset is only as good as the strength of the bond. This strength depends on some factors; the substrate, installation technic, and tile materials chosen. It is imperative that the thinset chosen is installed in a consistent thickness and with materials that it is compatible.

Proper troweling technics are critical to achieve the specified mortar coverage. TCNA requires greater than 80% coverage in dry areas and 95% in wet area. Coverage for natural stone should always be 95%. If the mortar is not in contact with the tile, there could be a couple types of failures. Any air gaps under the tile make the system weak and in wet areas those areas can breed mold.

The directional method of spreading thinset get the installer the coverage they need.

## Proper Coverage



## Improper Coverage

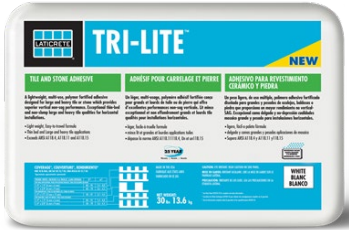


## TERMS TO KNOW

- 1. Tensile Strength:** the resistance of a material before breaking under tension.
- 2. Flexural Strength:** the maximum bending stress that can be applied to a material before it yields. The most common way of obtaining the flexural strength of a material is by employing a transverse bending test using a three-point flexural test technique.

 [See the NTCA video showing this linear troweling method here.](#)

Our Products



**TRI-LITE**

A lightweight, high-performance tri-purpose mortar designed for large and heavy tile, thin-bed, and wall installations

- 30lb bag (same coverage as traditional 50lb bag)
- Excellent Large Heavy Tile

**LHT PLUS**

A polymer modified large and heavy tile mortar specifically formulated to provide a one-step installation for large-format ceramic tile, porcelain tile, marble, and stone on floors and walls.

- Budget friendly
- Approved for Exterior Grade Plywood
- Large Heavy Tile

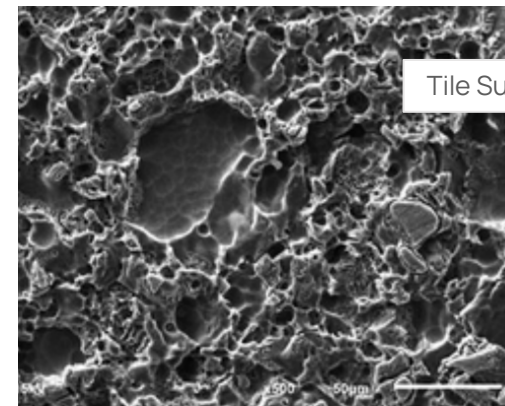
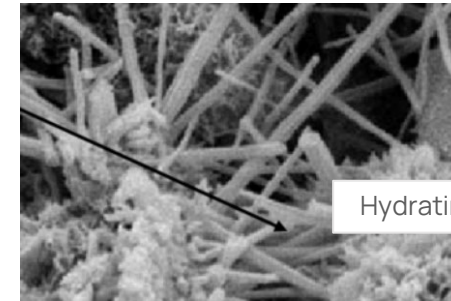
**MULTIMAX LITE**

The ultimate lightweight one-step, polymer-fortified, large and heavy tile mortar for interior and exterior installation of ceramic tile, porcelain tile, glass tile, stone, quarry tile, pavers, and brick. MULTIMAX LITE features maximum non-sag performance on walls and maximum buildup of up to 3/4" (19 mm) without shrinkage on floors.

- 25lb (same coverage as traditional 50lb bag)
- Excellent Large Heavy Tile
- High Bond Strength

**A LITTLE SCIENCE**

Portland cement-based mortars create a mechanical bond to materials. Below the top pictures shows cement in the hydration process. It forms those tubular “arms”. The bottom picture shows the surface of a porcelain tile. During hydration, the “arms” of the cement go into the pores of the tile. This is done on a microscopic level and millions of times to create a STRONG mechanical bond.



### **Final Thoughts**

Your adhesive is the most important part of your tile system and thinset is the most popular. It offers a superior bond and versatility with relatively ease of use. What color thinset should you buy, white or gray? Well, it depends. A good rule of thumb is to pick a color closest to the grout color. If you have a clear or translucent tile, then be aware that the thinset color can affect the final shade of the installation.