



Using the Right Mortar for Installing Uncoupling Mats

What is Uncoupling Mat Mortar?

Uncoupling membranes are defined in the Tile Council of North America (TCNA) Handbook as plastic sheets that have a geometric pattern to create an air space between the tile assembly and the subfloor. They contain a controlled plane that will uncouple if a force is applied from movement of the subfloor, leaving the tile assembly intact. Uncoupling membranes have been used in the US and Europe as an underlayment for ceramic tile installations for more than 20 years. They were developed to isolate the ceramic tile installation from the subfloor. If there is movement in the subfloor the membrane is designed to provide a means for the tile assembly to uncouple from the subfloor and eliminate damage caused to the tile assembly.

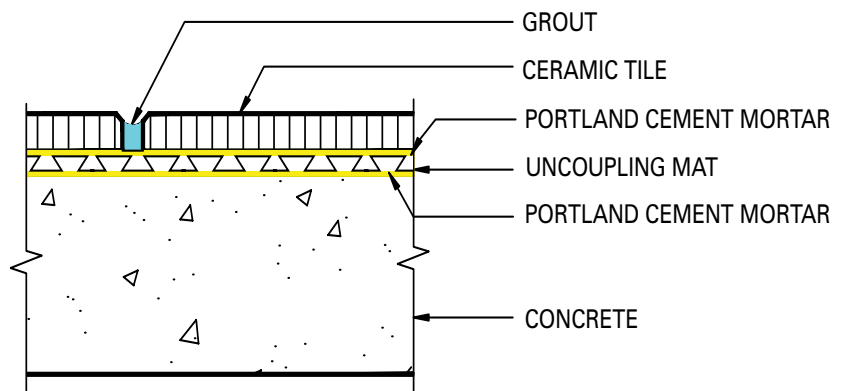
*By Steve Taylor
Director of Architecture and
Technical Marketing,
Custom Building Products*



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While there are circumstances listed in the TCNA handbook where an uncoupling membrane should be used for tile installation, many believe that the best system for installing tile is a well-bonded installation system: utilizing high performance flexible thin-set mortars, bonded anti-fracture membranes and tile backerboards. When the correct flexible installation system is used, the forces created in the subfloor will be distributed throughout the well-bonded mortar and underlayments, protecting the tile from damage while still maintaining a tenacious bond.

CF128-09
Floors, Interior
Crack Isolation
Young Concrete Uncoupling Membrane



With ever changing construction techniques, tile installers have encountered specific areas of installation that cannot be efficiently installed with traditional materials alone. For instance, Tile Council of North America (TCNA) recognized that ceramic tile could be installed with uncoupling membranes over Young (green) Concrete (F128-09) as soon as the concrete can support traffic after it is poured. Traditional installation materials require the concrete to cure 28 days before attempting to install ceramic tile. While we do not expect to see tile installed the day after the concrete slab is poured, it is feasible that it may be necessary to install tile 14 days after the pour (14 days short of the required 28 days).



If ceramic tile is installed before the movement/shrinkage of the concrete slab comes to equilibrium, cracks can develop in the tile floor. Since uncoupling membranes are designed to uncouple from the substrate when there is movement, it was determined by TCNA that uncoupling membranes are the designated method to allow installation of tile to young concrete. With the introduction of this application along with F147-09 (plywood floors with joist spacing of 24") and F148-09 (plywood floors with joist spacing of 19.2") in the TCNA Handbook, the need for an appropriate mortar to meet the installation requirements of the uncoupling manufacturers developed. Many manufacturers of uncoupling membranes recommend the use of a non-modified thin-set mortar meeting the requirements of ANSI A118.1 to install ceramic and stone tile to the surface of the uncoupling membrane.



CUSTOM's Uncoupling Mat Mortar for the installation of ceramic tile and stone when using an uncoupling membrane.

UNCOUPLING MAT MORTAR.

Custom Building Products has introduced a premium, cement-based mortar for the installation of ceramic tile and stone utilizing an uncoupling membrane. Custom Building Products' Uncoupling Mat Mortar fills the requirement of the commercial uncoupling membrane manufacturers for an ANSI A118.1 non-modified thin-set mortar to be used for installing ceramic and stone tile to the surface of these membranes. While an ANSI A118.1 thin-set mortar will provide an adequate bond to most ceramic tile and stone, it may not meet the Tile Manufacturer and TCNA requirement to use a thin-set mortar that exceeds the more demanding ANSI A118.4 specification for the installation of porcelain and other popular tile types. It is vital that the Tile Manufacturers' requirement for a bonding mortar is followed to achieve a successful installation and maintain any warranties offered by the Tile Manufacturer. As with all non-modified ANSI A118.1 thin-set mortars, Custom Building Products' Uncoupling Mat Mortar should not be used alone to



install the uncoupling membranes directly to plywood or OSB subfloors. To install the membrane to these wood subfloors, meeting building code to accommodate the weight and use of the tiled flooring or any more difficult surface, the Uncoupling Mat Mortar must be mixed with Custom Building Products' Thin-Set Mortar Admix or an ANSI A118.4 mortar, like VersaBond®.

Uncoupling Mat Mortar does fit the requirements of an ANSI A118.1 thin-set mortar to be used in conjunction with an uncoupling membrane, as recommended by many manufacturers of uncoupling membranes. Contact the manufacturer of the tile and uncoupling membrane for warranty information.



ABOUT THE AUTHOR

Steve Taylor is Director of Architecture and Technical Marketing for Custom Building Products and has more than 30 years of experience developing products for the construction industry. Steve is a member of the Tile Council of North America (TCNA), helping to determine proper tile installation methods and standards, including the simplification of tile installation processes which enables tile professionals to save time and money.



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Seal Beach, CA
Technical Services 800-282-8786
custombuildingproducts.com