



TECHNICAL BULLETIN #130

Regarding: Merkrete Medium Bed mortars

Medium bed “thinset” mortars have been around the tile industry for many years. They initially were developed to compensate for the variations in the thickness of natural stone tile during a thinset tile installation. Today, medium bed mortars like Merkrete’s 720 MarblePro, 820 Merlite, 855 XXL and 856 XLF mortars continue to grow in popularity and are used for a variety of stone tiles, large format ceramic (tiles with at least one side greater than 15”) and porcelain tile installations and to compensate for the slight irregularities in tile and substrates.

Unfortunately, the tile industry has seen an increase in failures due to the inappropriate use of “normal” thin-set like 705, Pro Set Plus, 710 Premium Set, and 735 Premium Flex, built up too thick in large format tile installations. A normal thin-set is intended to go from a minimum of 3/32” to a maximum of 1/4” after the trowel notches have been beat in. When a normal thin-set is used too thick, shrinkage of the mortar can occur, as a result of the lower ratio of sand to cement mix in the normal thin-set. This then can cause bond loss, depressions and cracking in the tile installation. Due to the increase in failures, thin-set thickness had become an industry subject of concern. Tile Industry members like TCNA (Tile Council of North America) and the MMSA (Materials, Methods Standards Association) quickly realized the industry’s lack of definition and recommended thickness for normal as well as medium bed thin-set.

The MMSA in cooperation with other tile industry committees has been working on medium bed mortars for a few years. They have recently defined the term “medium bed mortar” for both non modified and modified thinset mortar standards. These definitions will be published after round robin testing of the medium beds is completed and a specification is written.

The medium bed industry definition is now listed in the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation. It is not part of either the ANSI A 118.1 or

ANSI A 118.4 standard, at this point. The MMSA is in the process of establishing test methods for the medium bed mortars characteristics, as an example shrinkage and lippage. Only after test methods are established, validated and then agreed upon, will an industry method be accepted, and then voted on.

The 2013 TCNA Handbook reads;

“Medium Bed mortars are designed to minimize slump and facilitate thicker bond coats, as compared with non-medium bed mortars. These characteristics make them useful for setting heavy tiles and/or tiles with ungauged thickness and for setting tiles with at least one side greater than 15” where the final embedded thickness of the mortar will exceed 3/16” under the tile. They are intended to be used as bond coats 3/16” or 3/4” thick after tile is embedded; they are designed as direct bond adhesives and are not intended to be used in truing or leveling underlying substrates or the work of others. Medium bed mortars are defined as such by their manufacturers. Medium bed mortars are used for thin-bed installation per ANSI A 108.5. Medium bed mortar is a product, not an installation method”.

The tile industry committees worked with labor to help establish guidelines for when medium bed mortars should be used. Medium Bed mortars should always be considered for large format tiles (tiles with at least one side greater than 15”). It is planned that after test methods for medium bed mortars become an ANSI standard, that changes will occur in ANSI A108.5.

The intention of the ANSI 108 changes is to provide guidelines to the design professional, specifier and builder of the likely need for medium bed mortars and or leveling compounds previous to the installation of large format tile. The tile industry has struggled with change orders and trying to get paid when dealing with the increased need for flatter and truer substrates due to large format tiles. These potential changes in the tile industry standards may require education to the designer but provide the

builder, tile installer and the owner with a more biddable, durable and successfully installed tile project.

ANSI standards can take years to establish and be voted on. The process of creating ANSI standards for medium bed mortars is well underway. This bulletin is intended to be temporary. Until the standard is in the ANSI handbook, we felt the industry agreed upon description of medium bed mortars is important to the designers and installers.

The installation of ceramic tile must be done following installation standards published in the current (TCNA) Tile Council of America handbook, ANSI (American National Standards Institute) 108 specification and our data sheets.

Visit our website at www.merkrete.com or call the Technical Department at 1-(800) 226-2424 for additional information or to request Product Data sheets on Merkrete's thin-sets.