

# Using ISO 13007 and ANSI A118 standards to improve product selections for tile and stone installations



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ADHESIVES · SEALANTS · CHEMICAL PRODUCTS FOR BUILDING



## ISO 13007 and ANSI standards are important guides in selecting the best products for every project.

**ANSI A118** standards were established by the American National Standards Institute and are used mainly by companies manufacturing for markets in the United States and Canada. The ANSI A118 standards have been used for years by architects when specifying which materials should be included on their projects in North America. An ANSI A118.XX specification defines a minimal acceptable level of performance.

**ISO 13007** standards were established by the International Standards Organization and are used by manufacturers in 165 countries throughout the world to produce a variety of mortars and grouts. The ISO 13007 classifications define the individual characteristics of these mortars and grouts.

These classifications assist the architect in better specifying which materials should be used in their particular projects based on performance.

Both the current ISO 13007 standards and the recently added ANSI A118.15 standard concerning mortars for tile and stone installations indicate specific properties for meeting the needs of project conditions.

Using ISO 13007 standards in conjunction with the new ANSI A118.15 standard, architects can quickly identify and define the products needed for tile or stone applications, without worrying about inferior substitutions to their designs.

# Working with the ISO 13007 standards and classifications



The standards express product classifications alphanumerically, using simple letters and numbers. Letters describe the chemical nature of the adhesive (such as cement-based, mastic, epoxy or urethane) along with special characteristics (such as fast-setting, slip-resistant or deformable). Numbers indicate whether the product performance is “normal” (such as normal bond strength, for light to medium traffic use, etc.) or “improved” (such as higher bond strength, for high traffic use, etc.).

Examples of MAPEI mortars and grouts that are classified under ISO 13007:

- *Ultraflex™ LFT™* – C2TES1P1
- *Ultraflex 1* – C2E
- *Ultraflex 2* – C2EP1
- *Ultraflex 3* – C2ES1P1
- *Granirapid® System* – C2FS2P2
- *Ultracolor® Plus* – CG2WAF
- *Kerapoxy® IEG* – RG

## ISO 13007 classifications appear on MAPEI packaging and literature



## ISO 13007 classifications

### Adhesives

Types	Classes	Special Characteristics
C = Cementitious (Thin-set mortars)	1 = Normal 2 = Improved	F = Fast-setting T = Slip-resistant E = Extended open time S1 = Deformable S2 = Highly deformable P1 = Plywood adhesion P2 = Improved plywood adhesion
D = Dispersion (Mastics)	1 = Normal 2 = Improved	A = Accelerated drying T = Slip-resistant E = Extended open time
R = Reaction resin (Epoxyes & Urethanes)	1 = Normal 2 = Improved	T = Slip-resistant

### Grouts

Types	Classes	Special Characteristics
CG = Cementitious grouts	1 = Normal 2 = Improved	F = Fast-setting A = High abrasion resistance W = Reduced water absorption
RG = Reaction resin grouts	–	Higher performance characteristics than improved cementitious grouts

# Working with the ANSI A118 standards and their requirements



In recent years, the ANSI A108 committee has taken steps to broaden the scope of their mortar standards and to move closer to the ISO 13007 approach. These steps included the publishing of the A118.15 standard for Improved Modified Dry-Set Cement Mortar (recognizing mortars with improved performance) and adding letter designations to A118.1, A118.4 and A118.15 for fast-setting (F), thixotropic (T) and extended open time (E) mortars. Additional work continues for mortars designed to be used thicker than traditional thin-bed methods.

Examples of MAPEI products using the ANSI A118 standards with letter designations:

- *Granirapid* System – A118.11, A118.4F and A118.15F
- *Kerabond T™ / Keralastic™* System – A118.11, A118.15E and A118.4E
- *Ultraflex LFT* – A118.11 and A118.4TE

**ANSI A118 levels also appear on MAPEI packaging and literature.**



Best for most difficult tiles, substrates and conditions

- Allows grouting in 3 to 4 hours
- Excellent for large tile and ungauged tile

**INDUSTRY STANDARDS AND APPROVALS**

ISO 13007: Classification C2FS2P2

ANSI: Meets or exceeds ANSI A118.4F, ANSI A118.11 and ANSI A118.15F bond strength requirements

LEED Points Contribution: LEED Points

LEED Credit 5, Regional Materials\* ..... Up to 2 points

LEED Credit 4.1, Low-Emitting Materials –

## ANSI levels

ANSI A118.4  
Latex Modified Portland Cement Mortar

ANSI A118.15  
Improved Latex Modified Portland Cement Mortar

ANSI A118.11  
EGP (Exterior Glue Plywood) Latex Portland Cement Mortar

## ANSI A118.15 special characteristics

A118.15F  
Fast-setting

A118.15E  
Extended open time

A118.15T  
Nonsag



Each application below demonstrates how easily the appropriate MAPEI adhesives and grouts can be specified when using the ISO 13007 classification code and ANSI standards.

### Large-format floor tile in a multi-level shopping mall concourse with heavy foot traffic

When tile is being set on a new or renovated mall, cracks can be present in the underlying substrate. *Mapeguard™ 2* can be used for this crack isolation. For applications where substrates are subject to deflecting loads, as with a suspended slab in a three-story mall, it is critical to have a significant level of flexibility that allows for sufficient expansion and contraction. A mortar with the ISO 13007 designation “S2”, the performance classification for improved deformability, is the key to a successful installation – and *Granirapid System* meets these needs. Heavy traffic areas that may be subject to scuffs and stains require a high-strength reaction resin grout (ISO 13007 classification RG) that is nonsagging as well as resistant to stains/chemicals. *Kerapoxy CQ* offers these attributes for the best application.

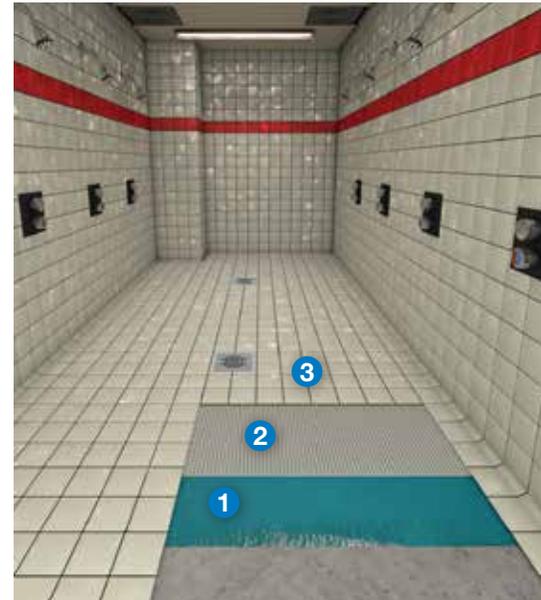
- 1 **MAPEI SM Primer**
- 2 **Mapeguard 2**  
ANSI A118.12
- 3 **Granirapid System**
  - ANSI A118.4F, A118.11 and A118.15F
  - ISO 13007: C2FS2P2
- 4 **Kerapoxy CQ**
  - ANSI A118.3
  - ISO 13007: R2/RG



### Locker room showers

When designing a tile installation system for community gang showers in a locker room, it is key that all installation layers are compatible and designed for a continuous wet environment (TCNA Environmental Classification COM 4) with some thermal growth and shrinkage, and ability to stand up to rigorous daily cleaning regimens during their life cycle. A liquid-applied waterproofing that meets ISO 13007-5 and ANSI A118.10, such as *Mapelastic™ AquaDefense*, ensures a continuous topical moisture barrier from constant shower use. When choosing the tile mortar that can handle this application's continuous traffic and use, it is important to use a mortar with an ISO 13007 improved tensile bond strength (“C2”) and normal deformability (“S1”), such as *Ultraflex LFT*. Strategically choosing a grout for this environment is crucial as the first line of defense against water intrusion, potential for bacterial growth, stain/chemical attack and abrasion. Using a reaction resin grout classified as ISO 13007 RG should be specified. *Kerapoxy CQ* provides this level of protection and peace of mind.

- 1 **Mapelastic AquaDefense**
  - ANSI A118.10 and A118.12
- 2 **Ultraflex LFT**
  - ANSI A118.4 and A118.11
  - ISO 13007: C2TES1P1
- 3 **Kerapoxy CQ**
  - ANSI A118.3
  - ISO 13007: R2/RG



### Exterior tile on a building exposed to extreme temperatures

Thermal growth and shrinkage must be considered for mortars and grouts exposed to extreme cold/hot temperatures throughout the year. Such considerations require a mortar with an improved bond (“C2”) and improved deformability (“S2”). The *Kerabond T / Keralastic* mortar system fully meets these requirements. Likewise, ongoing exposure to movement, abrasion and moisture necessitates a grout with improved performance capabilities (“CG2”), while exposure to extensive abrasion and moisture requires the additional ISO 13007 classifications A (for high abrasion resistance) and W (for reduced water absorption). Such a grout would provide the required performance levels needed for a facade subject to driving rain and wind. *Ultracolor Plus* grout would qualify according to its ISO 13007 classifications.

- 1 **Kerabond T / Keralastic**
  - ANSI A118.4, A118.11 and A118.15E
  - ISO 13007: C2ES2P2
- 2 **Ultracolor Plus**
  - ANSI A118.6 and A118.7
  - ISO 13007: CG2WAF



# Get specific!

What are the specific mortar requirements for the tile installation on your project?

- Normal bond adhesion (C1)
- Improved bond adhesion (C2)
- Fast-setting (F)
- Slip-resistant (T)
- Extended open time (E)
- Normal flexibility (S1)
- Improved flexibility (S2)
- Normal adhesion to plywood (P1)
- Improved adhesion to plywood (P2)

All MAPEI mortars have been classified to get this specific! We have achieved this precision by developing our mortars according to the ISO 13007 performance standards in addition to the ANSI A118 standards.



To find the specific classification for each of MAPEI's mortars, see our Technical Data Sheets at [www.mapei.com](http://www.mapei.com).

