



# Cold Weather Tiling and Grouting

## TDS 1002

Conventional portland cement tile setting beds, thin-set mortars, grouts and cement plasters are often permanently damaged when subject to below freezing temperatures immediately after installation. The water content of a mortar turning into ice often results in portland cement gel structure rupturing with significant loss in strength, flexibility and durability. Subsequent repairs to the damaged work and resulting site delays are extremely costly.

There is a simple rule to follow when the temperature is low during installation: **The 8 °C Rule** – for every 8°C below 21°C, portland cement and epoxy based materials take twice as long to cure.

### Liquid Latex Fortified Mortars, Screeds and Plasters

The use of LATICRETE 4237 Latex Additive in thin-sets and LATICRETE 3701 Mortar Admix in thin-sets, grouts, plasters, stuccos and other portland cement mortars allows work to continue in cold weather without costly delays or damage. Frost, ice and thermal shock do not damage LATICRETE Latex Fortified Mortars after placement. Installations can be made at temperatures as low as 2°C.

### Rapid Setting Latex Fortified Mortars

The use of a premium rapid-setting thin-set mortar will also help to accelerate the setting time in cooler temperatures. LATICRETE 335 Rapid is ideal for this application. In addition, the use of LATICRETE 101 Rapid Latex Admix mixed with unmodified LATICRETE Thin-Set Mortars, Medium Bed Mortars and other suitable LATICRETE bagged mortars allows work to take place and can quickly return newly tiled areas back to service in cooler temperatures.

### Shipping and Storage

For best results, always ship and store installation materials at temperatures above freezing so they will be ready to use when needed.

1. If LATICRETE liquid latex admixtures and liquid membranes are ever frozen, allow them to thaw completely before use. Allow the products to come up to room temperature of approximately 21°C. Stir contents thoroughly before use or before mixing with thin-sets, grouts and other portland cement mortars.
2. LATICRETE and LATAPOXY® liquid pouches stored in cooler temperatures should be warmed by submerging the unopened pouches in warm water until the material is sufficiently tempered.
3. Acclimatise waterproofing membranes, crack isolation and sound control products to their respective usage temperature range prior to use.
4. Store all polymer fortified thin set mortars and grouting products in a warm area for 24 hours prior to use.

### Protection

Due to the slow rate of portland cement hydration and strength development at low temperatures, protect installations from traffic for longer than normal periods. Keep all traffic off of finished work until full cure. For example, installations which will be subjected to vehicular traffic should cure for 7 days at 21°C prior to vehicle traffic. Allow extended cure time, based on the 8° Rule, for installation in cooler temperatures. It is important to note that large format tiles and stone will also require longer curing periods in cooler temperatures. Suitable protection should be included in the scope of work. For example, the Tile Council of North America (TCNA) of the TCA Handbook for Ceramic Tile Installation (current year) under the heading "Protecting New Tile Work" states: "Builder shall provide up to 19mm thick plywood or OSB protection over non-staining Kraft paper to protect floors after installation materials have cured". In addition, extended cure periods will be required for applications that include multiple layer build ups (e.g. mortar beds, waterproofing, sound control, crack isolation, epoxy grout, etc. . .). Each component must reach a proper cure prior to installing the subsequent installation product.

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## Helpful Hints

1. Work during warm periods of the day.
2. Ensure that the surface temperature is within the suggested temperature range for the LATICRETE or LATAPOXY product being used during the installation and cure period. Consult the individual LATICRETE or LATAPOXY product data sheet and How to Install guide for more information.
3. Tent and heat areas that will be subjected to the elements or freezing temperatures during installation and cure periods.
4. For multiple story buildings – areas to receive tile and stonework may be heated from below to aid in “warming up” cold concrete slabs and rooms. Simply placing temporary heating units in areas under rooms scheduled to receive tile and stone finishes in multiple story buildings will allow the natural rise of heat to warm up these areas.
5. Vent all temporary heating equipment in accord with Worksafe Practices and within Occupational Exposure Limits and local building code regulations.