



# Portland Cement Mortar Bed

## Troubleshooting Guide

### TDS 204

Complaint	Cause(s)	Prevention	Potential Solutions
<b>Mortar Bed Cracking</b>	<ol style="list-style-type: none"> <li>1. Lack of the required slurry bond coat in a bonded mortar bed.</li> <li>2. Lack of wire reinforcing in a un-bonded mortar bed.</li> <li>3. Insufficient thickness of the unbonded mortar bed.</li> <li>4. Slurry bond coat dried before placement of mortar bed.</li> <li>5. Contaminated concrete slab under a bonded mortar bed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use a slurry bond coat to bond the mortar bed to concrete slab</li> <li>2. Wire reinforcing is required for un-bonded mortar beds.</li> <li>3. Adhere to LATICRETE recommended minimum thickness for unbonded mortar bed installations – 2” (50 mm)</li> <li>4. Ensure that slurry bond coat remains wet and tacky.</li> <li>5. Mechanically scarify the concrete slab to remove any contaminants, or use an un-bonded, wire reinforced, mortar bed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use 254 Platinum, 254 Platinum Plus or MULTIMAX™ LITE and mix to a “wet” consistency.</li> <li>2. Use 2” x 2” (50mm x 50mm), 16 gauge, welded, galvanized wire mesh halfway through the total mortar bed thickness.</li> <li>3. 2” (50mm) minimum thickness in unbonded mortar bed installations.</li> <li>4. Use 254 Platinum, 254 Platinum Plus or MULTIMAX™ LITE and mix to a “wet” consistency; do not allow it to dry out. Re-apply if the slurry coat dries.</li> <li>5. Mechanically scarify the concrete slab to remove any contaminants or use an unbonded, wire reinforced, mortar bed.</li> </ol>
<b>Hollow Sounding Mortar Bed</b>	<ol style="list-style-type: none"> <li>1. Lack of the required slurry bond coat in a bonded mortar bed</li> <li>2. Mortar bed installed over a “green” concrete slab</li> <li>3. Improper placement of expansion joints</li> <li>4. Concrete slab has been sealed</li> <li>5. Excessive contamination of the concrete slab not allowing proper bond of the mortar bed to the substrate</li> <li>6. Improper compaction of mortar at the time of installation</li> </ol>	<ol style="list-style-type: none"> <li>1. Use a slurry bond coat to bond the mortar bed to concrete slab</li> <li>2. Allow concrete slab to reach a sufficient cure for tile/stone installations.</li> <li>3. Ensure that expansion joints are present in the slab where required.</li> <li>4. Ensure that concrete slab is structurally sound and free of all concrete sealers or curing compounds.</li> <li>5. Ensure that concrete slab is structurally sound and free of any concrete sealers, curing compounds, grease, wax, oil, dirt, etc.</li> <li>6. Ensure mortar is fully compacted at time of placement.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use 254 Platinum, 254 Platinum Plus or MULTIMAX™ LITE and mix to a “wet” consistency.</li> <li>2. Allow concrete slab to cure for a minimum of 28 days at 70°F (21°C).</li> <li>3. Follow recommendations found in the TCNA Handbook for Ceramic Tile Installation EJ171.</li> <li>4. Mechanically scarify the concrete slab (e.g. bead-blasting, shot-blasting, coarse grit sanding, etc).</li> <li>5. Mechanically scarify the concrete slab (e.g. bead-blasting, shot-blasting, coarse grit sanding, etc).</li> <li>6. Mortar mix should be of such a consistency and workability that it allows for maximum compaction during placement. Firmly compact and screed mortar bed.</li> </ol>

<b>Weak or Friable Mortar Bed Surface (3701 Fortified Mortar)</b>	<ol style="list-style-type: none"> <li>1. Improper compaction of mortar at the time of placement.</li> <li>2. Mortar bed surface dried out too fast (due to exposure to heat/sun/ wind, etc.)</li> <li>3. Too lean a mix – using weak site mixed mortar beds.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure mortar is sufficiently compacted during placement.</li> <li>2. Work at cooler periods of the day. Shade the areas from direct sunlight. Shield the areas from the wind. Damp cure mortar bed during hot or arid periods.</li> <li>3. Use 3701 Fortified Mortar Bed in lieu of site mixed portland cement and sand.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mortar mix should be of such a consistency and workability that it allows for maximum compaction during placement. Firmly compact and screed mortar bed.</li> <li>2. Mortar bed should be allowed to cure at an even rate. Use potable water as the gauging liquid. Cover/ damp cure mortar bed with non-staining Kraft paper or polyethylene sheeting during hot or windy conditions.</li> <li>3. For best results, use potable water.</li> </ol>
<b>Weak or Friable Mortar Bed Surface</b>	<ol style="list-style-type: none"> <li>1. Improper compaction of mortar at the time of placement.</li> <li>2. Mortar bed surface dried out too fast (due to exposure to heat/sun/ wind, etc.)</li> <li>3. Too lean a mix – using weak site mixed mortar beds.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure mortar is sufficiently compacted during placement.</li> <li>2. Work at cooler periods of the day. Shade the areas from direct sunlight. Shield the areas from the wind. Damp cure mortar bed during hot or arid periods.</li> <li>3. Use 3701 Fortified Mortar Bed or 3701 Lite Mortar R in lieu of site mixed portland cement and sand.</li> <li>4. If a site mixed mortar bed is to be used, gauge with 3701 Mortar Admix.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mortar mix should be of such a consistency and workability that it allows for maximum compaction during placement. Firmly compact and screed mortar bed.</li> <li>2. Mortar bed should be allowed to cure at an even rate. Use 3701 Fortified Mortar Bed or 3701 Lite Mortar R. Cover/damp cure mortar bed with non-staining Kraft paper or polyethylene sheeting during hot or windy conditions.</li> <li>3. Avoid improper mix ratios, variations in aggregate size and quality by using a proprietary mortar at mix.</li> <li>4. For best results, use 3701 Mortar Admix mixed with 226 Thick Bed Mortar when field mix mortars are required.</li> </ol>
<b>Mortar Bed Curling on Edges</b>	<ol style="list-style-type: none"> <li>1. Mortar bed surface dried out too fast (due to exposure to heat/sun/ wind, uneven curing, etc.)</li> </ol>	<ol style="list-style-type: none"> <li>1a. Ambient air temperature is too hot for the installation of mortar bed to take place</li> <li>1b. Excess of moving air during the installation of mortar bed. (e.g. fans, HVAC ducts blowing over surface of mortar bed, etc...)</li> <li>1c. Exposure to direct sunlight</li> </ol>	<ol style="list-style-type: none"> <li>1a. Control environmental conditions during the installation period or damp cure and cover mortar bed with non-staining Kraft paper or polyethylene sheeting.</li> <li>1b. Minimize moving air during installation period (e.g. lower or shut off fans and HVAC, close windows if excessive air is blowing in from outside, etc...)</li> <li>1c. Shade mortar bed from direct sunlight during installation and initial cure period.</li> </ol>

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