

TILE BONDED TO CONCRETE SLAB - THIN-SET METHOD

311F-2019-2021

DETAIL A INTERIOR/EXTERIOR

SUITABLE SUBSTRATES

- Floor systems over which the tile will be installed shall be in conformance with the Canadian National Building Code 2015 and applicable local building codes taking into consideration anticipated live and dead loads.

MATERIALS

- TILE
- BOND COAT – **Interior:** Dry-set mortar (minimum acceptable standard ANSI A118.1 or ISO 13007 C1), latex-Portland cement mortar (minimum acceptable standard ANSI A118.4 or ISO 13007 C2S1), modified epoxy emulsion mortars, 100% solids epoxy mortar, epoxy adhesive (minimum acceptable standard ANSI A118.3 or ISO 13007 R1), or organic adhesives (minimum acceptable standard ANSI A118.3 or ISO 13007 R1). **Exterior:** Single or two component liquid latex-Portland cement mortar (minimum acceptable standard ANSI A118.4 or ISO 13007 C2S1).
- GROUT – **Interior:** Portland cement, latex-Portland cement (minimum acceptable standard A118.6 or ISO 13007 CG1), or epoxy grouts (minimum acceptable standard ANSI A118.3 or ISO 13007 RG). **Exterior:** Latex-Portland cement (minimum acceptable standard ANSI A118.6 or ISO 13007 CG1).

APPLICATION

- Maximum variation of slab should not exceed 6 mm in 3000 mm or 2 mm in 300 mm. For large format tile where any side is greater than 380 mm, surface variation should not exceed 3 mm in 3000 mm and 1.5 mm in 600 mm. For tile with any edge longer than 380 mm use sufficient bond coat to ensure minimum 95% contact, with the corners and edges fully supported. Apply bond coat to mortar bed surface. Use proper notched trowel to ensure adequate bond. With pressure, apply a coat of mortar by using the trowel's flat side to key the mortar into the substrate. Apply additional mortar, combing it in a single direction parallel to the tile's shortest dimension, with the trowel's notched side. Place the tiles firmly into the wet bond coat. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage. Use sufficient bond coat to ensure to minimum 95% contact for exterior installations, commercial floor and in wet areas (it may be necessary to back-butter the tile in order to meet this requirement) and minimum 80% on interior dry areas. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting. Allow bond coat to cure. Force grout into the joints with a rubber grout float. Make sure all joints are well-compacted and free of voids and gaps. Remove excess grout from the tile surface and clean.

LIMITATIONS

- Manufacturer's recommendations must be followed.
- Provide positive drainage below exterior slabs; use latex-Portland cement mortars on exterior slabs. Use of epoxy mortars and grouts is recommended for interior surfaces only or where improved chemical resistance is required.
- Use method 309F-2019-2021 or crack isolation/uncoupling membrane if recommended by the manufacturer for precast floor systems, post tensioned concrete floor systems and other floors subject to movement or deflection.
- Not a roof assembly. (For roof assembly see Detail 325F-2019-2021 Detail A)

OTHER CONSIDERATIONS

- For exterior installations, use a suitable latex-Portland cement mortar. Back-buttering of the tile is required to achieve 95% contact.
- Tile used in exterior applications must be frost resistant.
- Refer to Notes For The Professional and 301MJ-2019-2021.
- Waterproofing membrane if required must be specified. (ANSI A118.10) Follow manufacturer's recommendations.
- For exterior use concrete slab must be sloped to provide positive surface drainage and adequate drainage below slab must be provided.
- Uncoupling Membrane – follow manufacturer's recommendations for appropriate mortars: membrane must achieve 0.3 N/mm² (50 PSI or greater) shear bond strength after 7 days per the test method in ANSI A118.12 section 5.1.3.
- Bond Coat to Uncoupling membrane- Dry-set mortar (minimum acceptable standard ANSI A118.1 or ISO C1, Latex Portland cement mortar (minimal acceptable standard ANSI A118.4 or ISO C2S1) or Improved Modified Dry-set cement mortar (minimal acceptable standard ANSI A118.15 or ISO C2 F and/or T, and/or S1, modified epoxy emulsion mortars or 100% solids epoxy mortars (minimum acceptable standard ANSI A118.3 or ISO RG).

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