



TECHNICAL BULLETIN

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RE: Ceramic tile installations over plywood substrates with EGP Latex-Portland Cement Mortar. ANSI A118.11 as specified for bonding to exterior glue plywood (EGP) substrates

Flooring systems, including the framing system and subfloor panels, over which tile will be installed shall be in conformance with the International Residential Code (IRC) for residential applications, the International Building Code (IBC) for commercial applications or applicable building codes. These codes take into consideration the loads (live load and dead load) that the floor will be subjected to during usage and designate a maximum deflection parameter the floor must stay within when in use.

Framing systems may be conventional wooden floor joist, engineered I-Joist or engineered wood trusses. Subfloor panels may be exterior glue plywood (if bonding tile directly to the subfloor) or Oriented Strand Board (OSB) if the subfloor will have exterior glue plywood (EGP) installed over the subfloor prior to the installation of ceramic tile. In either case, the area to receive the EGP Latex-Portland Cement Mortar should be exterior glue plywood only, secured with screw-type nails and glued where possible. Locate nails and screws at 6 inch centers along the panel edges and 8 inch centers each way throughout the panel. Offset joints of subfloor panels and underlayment panels. A gap of 3/16" shall be left between sheets of plywood and between the plywood edges and all other surfaces they abut to allow for expansion. These gaps shall remain empty when the installation is complete. In addition, all wooden systems must be for INTERIOR USE ONLY and protected from exposure to water.

The installation of ceramic tile shall be performed in accordance to ANSI A108.1B, A108.5 and instructions on the TexRite product data sheets. As of 2007, the TCNA Handbook for Ceramic Tile Installation has four

methods for installations where ceramic tile is bonded directly to exterior glue plywood. They are F150, F160, F149 and F155. Each detail calls out the minimum thickness for the subfloor and underlayment panels.

The plywood surfaces to receive ceramic tile shall not be fire resistant. They shall be dry, clean and free of oil, grease, dirt, old adhesive residue, gypsum patching material, curing compounds, sealers, waxes and paints.

Tongue and groove plywood sheets butted up, not gapping plywood sheets, and/or filling the gaps between sheets with the setting material DOES NOT ALLOW FOR EXPANSION/CONTRACTION OF PLYWOOD SHEETS and will likely result in bond failure.

Problems can occur in plywood substrates when subjected to moisture. All wood floor structures shall be designed with proper ventilation on the underside and be protected from water vapor or moisture. Further, all joist, supporting structure and plywood surfaces shall be dry prior to installation of ceramic tile as any shrinkage occurring after the installation will result in bond failure.

Maintain proper gaps between subfloor plywood or OSB sheets when cementitious backer units (ANSI A118.9) are used as the underlayment material to be bonded to with ceramic tile. Cementitious backer units are not totally rigid and, when placed over non-gapped plywood, buckling of plywood edges will be transmitted through the backer unit causing bond failure and cracked tiles.

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The following products are not suitable as an underlayment for direct bonding of ceramic tile or stone:

Luan, waferboard, Masonite®, particle board, oriented strand board (OSB), pressure treated plywood, fire-treated plywood, interior grade or marine plywood and hardwood flooring.

Note: Interior grade plywood is not considered a suitable substrate due to the water sensitive nature of the glues used to bond the laminate layers in this product. During applications using Portland cement based setting materials, the moisture present in the mortar can cause these water-sensitive glues to lose bond causing the plywood to delaminate and, in turn, cause installation failure.

TexRite products meeting ANSI A118.11 and approved for use over plywood surfaces:

CeramaBond, MultiPurpose, CeramaFlex
Rapid Bond, QuickCure, Total Contact
UniFlex
Any of TexRite unmodified dry-set mortars when modified with A-Crylic Mortar Admixture or CureFlex Admixture

Reference Documents

ANSI A108.01 General Requirements: Subsurfaces and Preparations by Other Trades
TCNA Handbook For Ceramic Tile Installation: Methods F150, F160, F149, F155 and F144.
NTCA Reference Manual (Installation of Tile Over Plywood) D-5, D-6 & D-7