



Technical Bulletin # 105

RE: Installations Of Ceramic Tile Over Plywood Substrates With Latex-Portland Cement Mortar (ANSI A108.12 as specified for bonding to plywood substrates)

DATE: January 07, 2005

All wooden flooring, when placed over conventional floor joist or other systems, should be of a design and thickness so as to maintain a substrate deflection not to exceed 1/360th of span, including live and dead load. Further, the area to receive the Latex Portland Cement Mortar should be exterior grade plywood only, secured with screw-type nails and glued where possible. Locate nails or screws at 6 inch centers along panel edges and 8 inch centers each way throughout the panel: offset joints of subfloor and underlayment. A gap of 3/16th" shall be left between sheets of plywood and between the plywood edges and all other surfaces which they abut to allow for expansion. These gaps shall remain empty when the installation is complete. In addition, all wooden surfaces 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 found on our product information sheets. The subfloor shall be 5/8" thick plywood or one inch nominal boards when on joists 16" o.c. The overlay surface to be bonded shall be 3/8" minimum exterior grade C-C plugged, non-fire treated, dry, clean, free of oil, grease, dirt, old adhesive residues, gypsum patches, curing compounds, sealers, waxes and paints.

Tongue and groove plywood sheets butted up, not gaping plywood sheets, and/or filling the gaps between sheets with the dry-set latex-Portland cement mortar 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 thorough protection from water vapor or moisture.

Further, all joists, 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 plywood sheets when cementitious backer units are the overlay material to be bonded (ANSI A118.9). Cementitious backer units are not

totally rigid (somewhat flexible) and when placed over non-gaped plywood, buckling of plywood edges will be transmitted through the backer unit. This excessive movement will cause bond failure and cracked tiles.

The following products are not suitable for adherence of ceramic tile or stone: luan, waferboard, masonite, particle board, oriented strand board (OSB) or sheathing, pressure treated plywood, fire-treated plywood, interior grade plywood, hardwood flooring.

NOTE: Interior grade plywood is not considered a suitable substrate due to the water-sensitive nature of the glues used to bond 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 causing installation failure.

C-Cure products approved for use over plywood surfaces:

- * QUICKCURE 908
- * UNIFLEX 916
- * ULTRACURE 971
- * FULL CONTACT 907
- * MULTICURE 905
- * M-BOND ULTRA™ 918
- * M-FLEX STRATA™ 914
- * MULTICURE NONSAG 906
- * Any of C-Cure unmodified dry-set mortars when modified with PST 948, CURECRYLIC PREMIUM 939 or CUREFLEX 948.

Reference Documents:

ANSI 108- AN-2 General Requirements for Subsurfaces: AN-2.5.3.2.1, AN-2.6.3.3, AN-2.6.4.4, AN-3.4 Wood Subfloors: AN-3.4.1.1, AN-3.4.1.2, AN-3.4.1.3, AN-3.4.1.4, Installation: A108.12. TCA Floors, Interiors (Wood Subfloors) F141, F142, F144 NTCA Reference Manual (Installation of Tile Over Plywood) D-5, D-6, D-7

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