

Wood Decks/Wind Uplift Resistance

OVERVIEW

BITEC's requirement for 1/2" minimum (nominal) thickness plywood is strictly for BITEC warranty purposes and does not reflect any FMRC wind uplift Approval or requirements. Only fire retardant treated (FRT) plywood, with a 3/4" minimum thickness, has passed FMRC calorimeter testing which is necessary before other testing is undertaken.

It is our understanding that, FMRC does not test other plywood deck material for wind uplift resistance only. We receive numerous calls about proper fastening over plywood decks from various areas of the country. Please understand that these decks do not meet the requirements for wind uplift resistance or other requirements with FMRC.

While some insulation and fastener manufacturers make this clear in their literature, it is obscure or non-existent with others; however, we should always refer the customer to the insulation and/or fastener manufacturers for various insulation and fastener combinations to achieve certain approvals or ratings. Also, we should remind customers that BITEC is not responsible for insulation, fasteners or blow off damage.

In addition to FMRC, UL also provides Wind Uplift Resistance Listings. BITEC has two such Listings with UL, over minimum 15/32" plywood deck. These Listings show 120 psf without insulation and 105 psf with insulation. See the specific information in the BITEC UL Listings, under the heading: Roofing Systems, Uplift Resistance in the orange pages, on page A14 at the time of this writing.

When possible, plywood decks should be covered with a layer of mechanically fastened (not nailed) insulation. However, when insulation is not used, the base ply may be nailed with an annular ring or screw shank nail. Plain or smooth shank nails should never be used. Nails should never be used to fasten insulation over 1/2" thickness. When questions are asked about wood deck situations, be sure you know exactly what type and thickness of deck is involved.

In the 2004 FMRC Approval Guide, FM requires that plywood be minimum 3/4" FRT, exterior glue grade, and have tongue-and-groove longitudinal edges. It is recommended that the material be pre-cut as much as possible and protected from weather while stored at the job site. Fasteners used to secure insulation or base sheets to plywood must protrude through the plywood deck a minimum of 1/4". Plank type lumber deck material must be FRT, with tongue-and-groove or splined together at the longitudinal side joints.

Approved insulation may be installed directly over either wood deck when fastened with Approved fasteners in an Approved manner.

The roof deck must be supported by structural framing members of no greater combustibility than the deck itself. The deck must not be exposed to high humidity conditions from any source, whether produced by human occupancy, air conditioning, equipment, manufacturing process or weather. Wet or high humidity conditions can cause FRT plywood to deteriorate rapidly.

Refer to FM Global Property Loss Prevention Data Bulletin 1-28 for securement procedures of the deck to the structural supports.

Make sure that the Technical Services Department is aware of FRT decks on any warranted projects and so noted on Warranty Request forms. In some instances these decks may not be approved. In situations here high humidity is a concern, these decks will not be approved. In all situations with this deck, they must be pre-approved by the Technical Services Department.