

TL-0008 — Waterproofing Plywood Substrates Technical Letter

Waterproofing plywood substrates is similar to waterproofing concrete substrates. In most cases, one ply of BITUTHENE® waterproofing membrane or 60 mil (1.5 mm) of PROCOR® fluid applied waterproofing (applied according to standard written specifications and application procedures) is sufficient provided the substrate is structurally sound and the following conditions are met:

- Use plywood panels which meet the American Plywood Association (APA) Exposure 1 or Exterior exposure durability classification. According to the APA, Exterior 1 panels “are designed for applications where long construction delays may be expected prior to providing protection, or where high moisture conditions may be encountered in service.” Exterior panels “are designed for applications subject to permanent exposure to the weather or to moisture.”
- Use plywood panels with B-grade or better veneer to minimize surface preparation.
- Apply plywood panels according to local building code requirements and APA recommendations. APA recommendations are outlined in the APA’s “Design/Construction Guide: Residential & Commercial, Form E30”. This document and additional information is available through the APA, P.O. Box 11700, Tacoma, WA 98411-0700.
- In wood plank applications, install an appropriate plywood panel overlay which meets the above exposure durability classification and veneer grade.
- To avoid deflection at panel joints, use tongue-and-groove panels or support all butt joints with lumber blocking installed between joists.
- Fasten plywood panels using appropriately sized and spaced ring or screw-shank nails.
- Plywood substrates should be clean, dry, frost-free, free of projections and smooth, with flush panel joints. When using the BITUTHENE® waterproofing system, patch knots and superficial damage with BITUTHENE® Liquid Membrane. When using the PROCOR® waterproofing system, use PROCOR® membrane to patch knots and superficial damage.
- When using BITUTHENE® install a 6 in. (150 mm) strip of BITUTHENE® Membrane at all joints prior to the field application of BITUTHENE® Membrane
- When using PROCOR®, tape all joints with reinforced, self-adhesive tape such as duct tape or seal joints with compatible sealant.
- Apply BITUTHENE® waterproofing system or PROCOR® waterproofing system using standard application procedures.
- Seal all terminations and T-joints of the BITUTHENE® Membrane with BITUTHENE® Liquid Membrane at the end of each day.
- Cover exposed waterproofing membrane flashings with durable, weather-resistant material such as copper, aluminum or neoprene. An alternate method is to extend the exterior wall system (siding, stucco, tile) over the waterproofing membrane flashing. Ensure that the BITUTHENE® or PROCOR® is integrated with metal flashings if applicable to form a watertight and water shedding seal. Contact GCP if a standard detail does not exist for a specific field condition.

- At door openings, terminate the BITUTHENE® or PROCOR® onto the sill. Set the door threshold in appropriate sealant, meeting Federal Specification TT-S-00230C or TT-S-00227E. Do not use sealants which contain polysulfide.
- Ensure the assembly is adequately vented if applicable and complies with all building code requirements.
- Oriented Strand Board (OSB) is not an acceptable substrate for BITUTHENE® and PROCOR® applications.

For added redundancy, apply two plies of BITUTHENE® or PROCOR® waterproofing membrane. A two ply BITUTHENE® application is achieved by installing the waterproofing in a shingle fashion using a minimum 18 in. (450 mm) side lap. A two ply PROCOR® application is achieved by applying an additional 60 mils (1.5 mm) of PROCOR® membrane totaling 120 mils (3.0 mm).

Do not treat plywood surfaces with exterior preservatives such as pentachlorophenol, creosote, linseed oil or other hydrocarbon containing materials.

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