

# Substrate Preparation for PERM-A-BARRIER<sup>®</sup> VPL, VPL LT and VPO Applications

Technical Letter 14

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PERM-A-BARRIER<sup>®</sup> VPL, VPL LT or VPO vapor permeable air barriers are commonly applied to one of the following substrates:

## Concrete Masonry Units (CMU)

Application of an air barrier on CMU walls is important because most concrete block is porous and susceptible to air infiltration. Standard application procedures should be followed and attention should be given to the following:

- The CMU surface should be smooth and free from projections. Strike all mortar joints full and flush to the face of the concrete block. Fill all voids and holes, particularly at the mortar joints. Alternatively, a parge coat (typically one part cement to three parts sand) may be used over the entire surface.
- All penetrations should be grouted or filled prior to application. When necessary, provide temporary protection, such as plastic or tarpaulin, at the top of the wall to prevent precipitation from accumulating in the core of the block. In applications where the membrane will be exposed over five months, provide plastic or tarpaulin protection over the membrane to prevent overexposure to UV rays.

## DENSGLOSS GOLD<sup>®</sup> Gypsum Sheathing

DENSGLOSS<sup>®</sup>Gold gypsum sheathing is used for direct mechanical application to structural framing as a backing for a variety of exterior claddings or as a soffit material. Its unique glass mat facing on the front and back provides greater resistance to rain, heat, and wind than regular gypsum paper-faced sheathing.

When installing PERM-A-BARRIER<sup>®</sup> VPL, VPL LT or VPO over DensGlass Gold, no surface treatment is required. PERM-A-BARRIER<sup>®</sup> VPL, VPL LT or VPO have excellent adhesion to the surface of the DensGlass Gold. In order to ensure a quality application, we recommend one of the following joint treatments.

1. To avoid deflection of glass-mat faced gypsum sheathing at panel joints, fasten corners and edges with appropriate screws as per manufacturer's recommendations.
  - Completely fill the sheathing joint with S100 Sealant and then install a scratch coat (approx. 15-30 mils) of S100 Sealant with a margin trowel or similar onto the face of the sheathing approximately 1 in. (25 mm) on each side of the sheathing joint, ensuring the edges are tapered to prevent shadowing of the spray application.
  - Once the sealant is tack free, the PERM-A-BARRIER® VPL, VPL LT or VPO may be applied.
  - This is the preferred joint treatment for high temperature applications, anticipated extended exposure and/or high wind loads.
2. To avoid deflection of the OSB or plywood sheathing at panel joints, fasten corners and edges with appropriate screws as per manufacturer's recommendations.
  - Completely fill the sheathing joint with S100 Sealant and then install a scratch coat (approx. 15-30 mils) of S100 Sealant with a margin trowel or similar onto the face of the sheathing approximately 1 in. (25 mm) on each side of the sheathing joint, ensuring the edges are tapered to prevent shadowing of the spray application.
  - Once the sealant is tack free, the PERM-A-BARRIER® VPL, VPL LT or VPO may be applied.
  - This is the preferred joint treatment for high temperature applications, anticipated extended exposure and/or high wind loads.

## Oriented Strand Board (OSB) and Plywood

Oriented Strand Board (OSB) has become a common material used as a structural wall sheathing. OSB is a structural panel made of wood strands sliced in the long direction and bonded together with a binder under heat and pressure. The product is also manufactured with a textured surface for use in roofing applications to improve safety. When installing PERM-A-BARRIER® VPL, VPL LT and VPO over OSB or plywood, no surface treatment is required as long as the surface is free from frost, dirt, grease, oil, or other contaminants. PERM-A-BARRIER® VPL, VPL LT and VPO have excellent initial and long-term adhesion to both surfaces of OSB as well as to plywood. In order to ensure a quality application, we recommend the following joint treatment.

Use OSB and plywood panels that meet the American Plywood Association (APA) Exposure 1 or Exterior exposure durability classification.

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