

POWERply

POWERply®
Endure® BIO
Adhesive
*Installation
Guide*



Construction Products Group

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ROOF SYSTEM INSTALLATION USING POWERPLY ENDURE BIO ADHESIVE

Description and Packaging:

POWERply Endure® BIO Adhesive is a 2-component urethane used as a base and interply membrane adhesive for POWERply Modified Bitumen Systems. In addition, this adhesive is also used as a base membrane adhesive for the AlphaGuard MT/BIO Plus Roof Systems, and the TremPly KEE Single Ply Roof System. It may also be used as a base ply or vapor retarder adhesive to low slope structural roof decks.

POWERply Endure BIO Adhesive develops excellent adhesive strength between bituminous roof system ply sheets and membranes, resisting delamination and other destructive forces. In addition, POWERply Endure BIO Adhesive adds additional waterproofing to the roof membrane system it is used within. POWERply Endure BIO Adhesive offers the following benefits:

- Fast Curing; 2 component (base & curative) mix
- Ultra Low Odor
- Ultra Low VOC
- Strong Bond; leads to excellent wind resistance
- Excellent Compatibility with modified bitumen membranes
- Contains a high percentage of bio-based components, which provides a more sustainable approach for roofing and waterproofing installations.

POWERply Endure BIO Adhesive is available as a 4 gallon set. The Part A Base (approx 3.5 gal) and Part B Curative (approx 0.5 gal) are packaged together within the same pail. Contact your Tremco Field Representative for additional info on barrel packaging for spray applications.

Storage & Temperature Requirements:

POWERply Endure BIO Adhesive should be stored in an area sheltered from harsh weather conditions at temperatures ranging from 60-80F (15-26C) and low humidity. However, the unmixed components can withstand exposure to freezing conditions. The lowest acceptable material temperature when mixing the components is 45F (7C), but cure times will be extended at these temperatures.

Do not mix at material temperatures above 100°F because pot life will be greatly reduced.

Do not exceed 110°F storage temperatures and do not store in direct sunlight.



Substrates:

Approved substrates include the following:

- POWERply SBS MB membranes
- BURmastic Composite Ply Family ply sheets (HT, Premium, & Supreme)
- Wood fiber insulation (ASTM C208)
- Polyisocyanurate insulation
- Gypsum board (ASTM C1177 & D1278)
- Rockwool brand insulation (requires increased coverage of 3.0 gal/SQ to adhere membrane)
- Various wood, plywood, tectum, metal, and masonry substrates – contact Tremco Technical Services for specific recommendations regarding surface prep, coverage rates, and application to these various structural substrates.



Surface Preparation:

Roof surface must be smooth, clean, and dry and free from oil, dust, and all contamination.

Install roof insulation per project specifications. Plan placement of roof membranes so that water flows over or along, but not against exposed membrane edges. Begin installation of membrane at the low point of the roof.

Substrate must be smooth and flat and free of uneven obstructions. If applying POWERply Endure BIO Adhesive over membrane/plies previously installed, knock down high spots & cured puddles of adhesive to assure subsequently installed membranes will lie flat against the previously installed roofing.



Mixing:

Use a heavy duty power drill with a Jiffy Mixer attachment. Cordless drills do not provide sufficient mixing horsepower and are not recommended since the adhesive may not properly mix.

Mix Part A (Base) for 1 minute, then add Part B (Curative). Mix the combined parts for a minimum of 2 minutes, blending and moving the mixing blade from top to bottom. Mix all areas within base container.

After mixing, the pot life of mixed POWERply Endure BIO Adhesive is 30 to 35 minutes at 77°F.

Product component temperatures must be above 45°F (7°C) when mixing. Do not mix when component temperatures are above 100°F (38°C) because pot life will be greatly reduced.



Application:

For application by squeegee, mix the base and curative as described above and pour product from the pail directly onto the substrate and spread using a serrated rubber squeegee. **Do not fully invert and fully drain all remaining traces from pails.** Remaining traces from sidewalls of pails are typically not fully mixed. Using these final traces will result in non-curing adhesive.

POWERply Endure BIO Adhesive is spray applied using custom equipment consisting of the Graco XP70 Plural Component Spray System. This equipment is available fully outfitted with spray guns, hoses, and tips from **Spray Equipment & Service Center Inc. (Wichita, KS, 800-666-6072)**. The Graco XP70 mixes the POWERply Endure BIO Adhesive base and curative within a manifold and delivers the blended base/curative mixture to the point of application by spray. Do not allow mixed product to remain in the manifold or spray lines downstream from the manifold for longer than 20 minutes.

Apply adhesive at the recommended coverage rate (see section below). If applying by squeegee, Backroll with a 1/2" nap roller to provide a smooth and consistent coverage. Use a mil gauge to ensure the coverage rate is accurate, including the lap area.

Embed membrane/ply sheet(s) into freshly applied POWERply Endure BIO Adhesive immediately.

- Apply pressure to fully press each membrane/ply sheet into the adhesive.
- Use a 75 pound weighted roller to press in membranes while adhesive is wet. If air pockets are noticed use the roller across the roll to work the air pockets out.



Uneven high spots of previously installed build-ups of POWERply Endure BIO Adhesive must be knocked down/ scraped off prior to application of a new coverage of POWERply Endure BIO Adhesive, to allow for subsequent plies to lay flat onto previously applied membrane.

- Use a dry roller, stiff squeegee, trowel or wide putty knife to remove excess material from outside the lap area before it cures.

For asphalt based membrane side laps and end laps, POWERply Endure BIO Adhesive must exude slightly past the membrane lap edge. Overlap membrane side laps 4" (100 mm) minimum and end laps 6" (150 mm) minimum. Apply pressure to end laps and side laps to assure positive adhesion.

Avoid excess adhesive on the roofing plies.

- Clean the bleed out before it dries by wiping with a cloth or towel.
- Protect the roof where product is being mixed.
- Contact productgroup@tremcoinc.com if you have excessive bleed out for additional recommendations.

For POWERply MB granule surfaced membranes, apply loose granules into the remaining uncured adhesive after wiping to cover the remaining adhesive and provide a consistent, finished surface.

For areas where remaining traces of adhesive have been exposed for 72 hours or more, prime with Geogard Primer to assure proper adhesion of next course of adhesive or fluid applied membrane. Geogard has a short tack time of approx 30 minutes; apply next course before the Geogard Primer film becomes tack free.

When installing a POWERply MB system in a 1+1 (2 ply) configuration, stagger cap membrane laps from base membrane laps a minimum of 12", so these laps do not align directly on top of each other. Stagger end laps 36" (approx. 1 m).

Do not allow base membrane(s) adhered in POWERply Endure BIO Adhesive to remain exposed to weathering for more than four (4) weeks. If base membrane must remain exposed for more than 4 weeks, laps must be heat welded or adhered using a different approved adhesive.

Alternative Lap Sealing Methods:

In addition to the lap construction described above, there are 2 alternate methods for sealing bituminous membrane laps. Hot air welding is recommended with most POWERply membranes, which delivers a fast watertight lap. Tremco LF Adhesive is a cold applied, ultra low odor urethane sealant which cures within 1 to 4 hours. For both of these methods, keep membrane adhesive off the lap area prior to seaming.

Coverage Rate:

Membranes, base sheets, and vapor retarders; Interply & Non-nailable decks: 2 gal/100 sqft (0.8 L/m²)

Over mechanically attached base sheets/laps: 3 gal/100 sqft (1.2 L/m²)

Over mechanically attached insulation & mineral wool: 3 gal/100 sqft (1.2 L/m²)

Flashing Systems:

POWERply Endure BIO Adhesive may be used as a flashing adhesive with POWERply MB and Composite Ply brand membranes. Mechanically attach flashing membrane along the top edge to assure membrane will not slide prior to cure. Apply adhesive to the back of flashing membrane and the substrate and then press/roll flashing membrane to the substrate. Flashing height shall not exceed 18" (460 mm).

Use approved materials within the system. Solvent based materials or silicone materials, Polyroof SF or BURmastic Adhesive SF are not permitted. Geogard Seam Sealer, Solargard Seam Sealer, and TremSEAL Pro are recommended as compatible roof adhesives and sealants.

Clean Up

Review product SDS for recommendations on safe handling of POWERply Endure BIO Adhesive.

Isopropyl Alcohol is recommended to remove uncured adhesive from tools and equipment.

Do not apply over solvent-based materials, such as roof mastic. Also, do not install solvent based coatings or adhesives such over the top of POWERply Endure BIO Adhesive.