



# AIR & VAPOR BARRIER

## **FIRE RESIST** Barritech NP™

### Description

Barritech NP is a fluid-applied membrane made of fire-retardant, synthetic polymer composition. Barritech NP is applied to exterior wall assemblies where it functions as an air barrier, vapor barrier and a water-resistive barrier. Barritech NP can be applied over concrete block, concrete, exterior gypsum sheathing, plywood, OSB and many other common building materials. The product is fully adhered to the substrate, flexible and rubber-like. Barritech NP is a single-component, air-drying product applied by spray or roller at nominal 0.040" (40 mils) dry film thickness. The high film thickness and flexible, elastic properties enable Barritech NP to bridge cracks and seal around penetrations, which creates a truly continuous, monolithic air, vapor and water barrier.

### Features and Benefits

- Fire-retardant composition permits use in many wall assemblies requiring NFPA 285
- Dries to a distinctive dark blue color for easy identification (light blue color when wet)
- Tough construction and 180-day UV resistance allows flexibility in schedule
- High water resistance of cured membrane permits use in high moisture exposure areas
- Non-flammable & fume-free composition contributes to safety during installation
- Easy, water clean-up of tools & equipment reduces harmful chemicals on the jobsite
- Spray-through standard, one-part equipment provides a simple and quick installation
- Monolithic coverage and self-sealing properties around fasteners enable an air and watertight installation
- Non-asphalt composition permits contact with many window and joint sealants.
- Barritech NP is a warranted air/vapor barrier system from Carlisle Coatings & Waterproofing



Barritech NP appears dark blue when dry.

### Project Conditions

Building codes and project specifications require continuity of the air barrier installation. It is the installer's responsibility to understand the extent and sequencing of air barrier installation on the project. Do not proceed with installation until substrate and project conditions conform to requirements specified in this document. Identify any membranes, coatings, sealants, tapes and joint compounds by others which will come contact with Barritech NP and CCW accessories, and verify compatibility through CCW. All surfaces accepting Barritech NP and CCW accessories shall be clean, dry, frost free and of sound condition. Verify that wall assemblies are dried in, such that water intrusion will not occur from above, behind or around the membrane installation.

Gaps and cracks shall be filled with materials and technique approved by CCW. As Barritech NP and CCW accessories cannot span any gap in excess of ¼" (exception - 1" gap for P/S Elastofom), electrical/mechanical penetrations, structural steel penetrations, columns/beams, expansion/seismic joints, shelf angles, tie-ins to fenestration and transitions to other building assemblies may require extra work and materials to provide suitable surfaces for continuous installation of the air barrier. Please consult CCW Barritech NP details for guidance.

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## Barritech NP

### Substrate Inspection

#### Concrete

Shall be cured in place 7 days minimum. It shall be smooth, with sharp protrusions such as cold joints ground flush. Honeycomb and holes/cracks shall be filled with grout or mortar.

#### Concrete Masonry Unit (CMU)

Mortar joints shall be struck flush and shall be free of voids. Mortar droppings shall be removed from brick ties and all other surfaces accepting Barritech NP and CCW accessories. Mortar joints shall be allowed to cure 3 days minimum before installation of Barritech NP.

#### Gypsum Sheathing

Sheathing boards shall be flush at joints, with gap between boards according to building code and sheathing manufacturer's requirements. Sheathing boards shall also be securely fastened to the structure with proper fastener type, technique and spacing according to building code and sheathing manufacturer's requirements. Sheathing boards shall be repaired or replaced if inspection reveals moisture damage, mechanical damage or if sheathing boards have exceeded the exposure duration or exposure conditions as required by the sheathing manufacturer.

#### OSB, Plywood, Lumber, Pressure-Treated Wood

Wood sheathing inspection carries the same protocol given for gypsum sheathing. Also, moisture content, measured with a wood moisture meter in the core of the substrate, shall be below 20%. Do not cover any wooden materials with Barritech NP or CCW accessories if moisture content is 20% or above. Do not encapsulate wood (such as nailers) with membrane, as this will cause premature rot. In most cases fire- and pressure-treated wood must be kiln dried to accommodate the less than 20% moisture content requirement.

#### Surface Preparation

Apply CCW contact adhesive to ALL surfaces accepting CCW self-adhered flashing. CCW-702, CCW-702LV, CCW-702 WB, CCW-715. CAV-GRIP™ and TRAVEL-TACK™ are all acceptable for this application. Apply SURE-SEAL® primers to all surfaces accepting P/S Elastofom. SURE-SEAL EP-95, HP-250 and Low-VOC Primer are all acceptable for this application. Follow the application instructions on the respective contact adhesive/primer product data sheet.

### Installation

In sheathing over stud construction, sheathing joints shall be detailed with any of the following two methods: 1) 2" width x 40 mil thickness ribbon of Barribond centered over joint; 2) 4" DCH reinforcing fabric

centered over joint and imbedded in Barritech NP. Window openings, inside-outside corners, base of wall, roof line, control joints and other transitions shall be flashed with CCW self-adhered flashing or Liquifiber™ imbedded in Barritech NP or DCH Reinforcing Fabric imbedded in Barritech NP. P/S Elastofom may be used to detail expansion joints and window wall transitions. Please consult CCW details for guidance.

Apply Barritech NP over surfaces at minimum 0.070" (70 mils) wet in a single or multiple coats through approved spray equipment. Recommended spray tip sizes are GHD 635 for high coverage and GHD 429 for detail coat. Consult the CCW Spray Equipment Brochure for detailed information. Theoretical application rate is 23 square feet per gallon in one coat. Barritech NP may also be applied with a paint roller. For roller application, apply a minimum of two 0.035" (35 mils) wet thickness coats. Theoretical application rate is 46 square feet per gallon for each coat. For roller application, allow Barritech NP to dry firm between coats.

CCW self-adhered flashing details are best applied to the substrate but can also be applied over cured Barritech NP. All surfaces shall be prepped with CCW Contact Adhesive before installation of CCW self-adhered flashing. Follow application instructions on the CCW Contact Adhesive product data sheet. Installer shall apply CCW Contact Adhesive in a sufficient footprint to extend a minimum of 1" beyond the edges of CCW self-adhered flashing. Neighboring pieces of CCW self-adhered flashing shall lap 2" minimum. Seal terminating edges of CCW self-adhered flashing with a 1" width X 40 mil thickness ribbon of Barribond or LM 800 XL. For installation of LiquiFiber in Barritech NP details, fill all gaps with Barribond or LM 800 XL. Apply a bed of Barritech NP at 30 wet mils thickness. Lay LiquiFiber into Barritech NP and press in place with chip brush or drywall knife. Set the LiquiFiber tight into corners (no bridging), and then smooth over surface. Overlap neighboring pieces of LiquiFiber at least 2" and apply 30 wet mils of Barritech NP into the laps. Immediately encapsulate the LiquiFiber with a second coat of Barritech NP. Cover all LiquiFiber with Barritech NP the same day of installation. Liquifiber can be used on inverted surfaces, and it will conform to complex multi-plane details without precise cutting and fitting.

Installation of DCH Reinforcing Fabric is performed like Liquifiber, with the following differences: fill all gaps exceeding ¼" with Barribond or LM 800 XL. DCH Reinforcing Fabric is best used over straight run conditions such as board joints or corners.

Barritech NP may be left exposed up to 6 months (180 days). During exposure, the membrane surface may darken and lose sheen, while the core remains pliable and rubber-like. This is acceptable. If the membrane is damaged during exposure, repair damaged membrane by removing loosely adhered material, cleaning the surface and coating the damaged area with a minimum 0.070" (70 mils) wet thickness coating of Barritech NP.

## Clean Up

Promptly clean uncured Barritech NP from hands, tools, surfaces and spray equipment with a solution of tap water and citrus de-greaser. Cured product must be removed mechanically or by soaking in a solvent such as xylene.

## Packaging

### Barritech NP

Fluid-applied, synthetic polymer air/vapor barrier packaged in 50-gallon drums and 5-gallon pails

### Other CCW Products:

#### CCW Self-Adhered Flashings: 705 FR-A (180 day exposure) or CCW-705 (60 day exposure)

36" x 75' roll: (225 ft<sup>2</sup>/roll) 1 roll/box  
24" X 100' roll: (200 ft<sup>2</sup>/ roll) 1 roll/box  
18" X 100' roll: (150 ft<sup>2</sup>/ roll) 1 roll/box  
12" X 100' roll: (100 ft<sup>2</sup>/ roll) 2 roll/box  
9" X 100' roll: (75 ft<sup>2</sup>/ roll), 2 roll/box  
6" X 100' roll: (50 ft<sup>2</sup>/ roll) 4 roll/box  
4" X 100' roll: (33.3 ft<sup>2</sup>/ roll) roll/box

CCW self-adhered flashings are available with standard or low temperature (XLT) adhesive formulas.

#### CCW Sure-Seal Pressure-Sensitive Elastoform Flashing

(P/S Elastoform)90 mil malleable, self-adhering EPDM flashing. Provided in 50' rolls of 12", 9" and 6" widths.

#### Sure-Seal EPDM Primers

EP-95 Splicing Cement: Solvent-Based, packaged in 1-gal can  
HP 250 Primer: solvent-based, packaged in 2.5-gal pails.  
Low-VOC Primer: OTC Compliant, solvent-based. Packaged in 1-gal cans.

#### LiquiFiber

Glass matt consisting of randomly oriented strands in soluble binder. Packaged in 300' rolls of 6" and 12" widths.

#### DCH Reinforcing Fabric

Woven polyester fabric available in 324' rolls of 4", 6", and 12" widths.

### CCW Contact Adhesives: (select any)

#### CAV-GRIP

Aerosol spray contact adhesive packaged in pressurized cylinders containing 30 lb. fill weight of adhesive. Reusable spray gun and 6', 12' or 18' hose are sold separately and are attached to cylinder for dispense.

#### CCW-702

Solvent-based contact adhesive packaged in 1-gal cans and 5-gal pails

#### CCW-702 LV

OTC-compliant, solvent-based contact adhesive packaged in 5-gal pails

#### CCW-702 WB

Water-based contact adhesive packaged in 5-gal pails

#### CCW-715

Solvent-based contact adhesive for green concrete, packaged in 5-gal pails

#### TRAVEL-TACK

Aerosol contact adhesive packaged in 12-oz. cans

### Approved Sealants:

#### Barribond (180 day exposure)

Non-sag grade, high-solids moisture-curing STPE. Packaged in 20 fl-oz sausages, 16 per box

#### LM 800 XL (60 day exposure)

Trowel-grade synthetic rubber sealant packaged in 29 fl-oz cartridges, 12 per case and in 5-gal pails

#### CCW-201 (over or under Barritech NP)

2-part, Non-Sag Polyurethane Sealant packaged in 1½-gal kits

#### Sealants by Others (over Barritech NP only)

Silicone sealants meeting ASTM C920 Type S, Grade NS, Class 25, 35, 50 or 50/100, Use NT

## Limitations

- Do not allow product in packaging or in spray equipment to freeze.
- Maintain product temperature above 45°F during spray.
- Do not apply at ambient temperature below 40°F or if temperature is expected to fall below 32°F in the next 16 hours.
- Do not apply product in rain. Do not install if rain is expected during drying time of product.
- Do not use in areas where temperatures exceeding 180°F are anticipated.
- Product is designed to be used as a positive side water barrier and will not function as negative side water barrier.

## Storage

Store Barritech NP and accessory products in a location protected from temperature extremes, precipitation and direct sunlight. Protect Barritech NP from freezing temperatures during delivery, storage and handling. Do not use product that has been frozen. Shelf life of Barritech NP in original, unopened packaging, stored under these conditions is one year from the date of manufacture.

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## Barritech NP

### Typical Properties

Property	Method	Results
Color	--	Un-Cured: Medium Blue Cured: Dark Blue
Application Temperature	--	Minimum 40°F
Volume % Solids	--	55%
Drying time of 70 mil wet film at 73°F/50% RH*	--	3 hr until tack-free 48 hr until fully dry
Coverage (Theoretical)**	Percent solids calculation	23 SQ FT per GAL (70 wet mils, 39 dry mils)
Volatile Organic Content (VOC)	--	22 g/L
Water Resistance of in-place membrane	Rilem Tube -- 70 wet mils on CMU AND AATCC 127, modified 70 wet mils on CMU and DensGlass 22 inch (55 cm) column of water	No water leakage through membrane
Air leakage resistance of in-place membrane	ASTM E1186 Bubble Gun -- 70 wet mils on CMU with imbedded ties	No visible bubbling
Nail Sealability	ASTM D1970	Pass
Water Vapor Permeance	ASTM E96 A (Desiccant Method) ASTM E96 B (Water Method)	0.05 Perm 0.77 Perm
Pull-Off Adhesion	ASTM D4541, modified 4" wood puck	>30 PSI on CMU and OSB (maximum reading on gauge) >12 PSI on DensGlass Gold (facer delamination from gypsum core)
Measurement of Heat Release by Cone Calorimeter	ASTM E1354. 50 kW/m <sup>2</sup> Heat Flux	Peak Heat Release Rate: 195 kW/m <sup>2</sup> Total Heat Release: 12.9 MJ/m <sup>2</sup> Effective Heat of Combustion: 8.2 MJ/kg
Surface Burning	ASTM E84. Product applied 80 mils wet, full coverage on cement board	Flame Spread Index 25, Smoke Generation Index 200
Elongation at Break	ASTM D412	1,000%
Air Permeance (40 mil free film)	ASTM E2178	0.0010 L/s*m <sup>2</sup> @ 75 Pa
Air Permeance (CMU)	ASTM E 2178, mod spray-apply membrane to CMU walls, single coat 80 mils wet	0.003 L/s*m <sup>2</sup> @ 75 Pa
Low-Temp Flexibility	ASTM D1970, 180° bend over 1" mandrel	No cracking at -20°F

Property	Method	Results
Air Barrier Assembly Test	ASTM E2357. Gypsum sheathing over steel studs, wall assembly with joints and penetrations. Gaps and joints caulked with LM 800 XL. Barritech NP spray-applied at 70 mils wet. Liquifiber-W reinforcement at details. P/S Elastoform @ window-wall interface.	Air Leakage: Maximum 0.037 L/s*m <sup>2</sup> @ 75 Pa [0.0072 CFM / ft <sup>2</sup> @ 1.57 PSF] infiltration & exfiltration, after deformation, pressure cycling and gust loading. Deformation: No Damage. 600 Pa [12.56 PSF], sustained load for 60 min Pressure Cycling: No damage. 2000 cycles at +/- 800 Pa [16.75 PSF] Gust Load: No damage, 1400 Pa [110 mph wind], windward and leeward load, 10 sec each direction.
Flexibility after UV Aging	180° bend at room temp after exposure for 1,000 h exposure	No cracking
Aging/ Long-Term Flexibility	CGSB 71-GP-24M Aging 70°C [140°F] for 500 h then 180° bend	No cracking
Low-Temp Crack Bridging	ASTM C1305	No cracking after 10 cycles at -15°F
Wall Assembly Burn Test	NFPA 285	Pass - Various wall assemblies with up to 3 inches of polyiso or XPS insulation. Consult CCW NFPA 285 White Paper for assembly details.

\*Drying time varies with ambient temperature, ambient humidity, substrate temperature, substrate dampness, coating thickness, sun and wind. Cool, moist, shady conditions and high coating thickness present the worst case scenario, causing the product to take many days to dry. In conditions such as these, it is advisable to tarp, heat and ventilate the area or wait for better weather.

\*\*Actual coverage varies by substrate and is typically less than theoretical coverage due to substrate roughness and porosity, wind, scrap and installer skill. Measurable dry mil thickness may also be lower than theoretical, due to substrate roughness, porosity and measurement technique. On all substrates, coating shall be visibly continuous, with no pinholes. Dry thickness, measurable with a pin gauge, comb gauge or micrometer shall be a minimum of 30 mils.

### Limited Warranty

Carlisle Coatings & Waterproofing Incorporated (Carlisle) warrants this product to be free of defects in workmanship and materials only at the time of shipment from our factory. If any Carlisle materials prove to contain manufacturing defects that substantially affect their performance, Carlisle will, at its option, replace the materials or refund its purchase price. This limited warranty is the only warranty extended by Carlisle with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. Carlisle specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever. The dollar value of Carlisle's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the Carlisle material in question.