



# AIR & VAPOR BARRIER

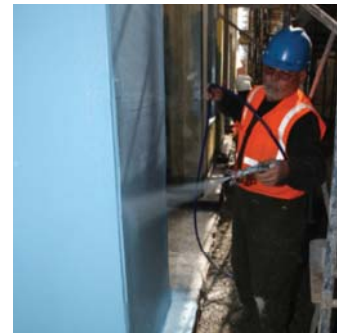
## Fire Resist Barritech™ VP

### Description

Fire Resist Barritech VP is a fluid-applied membrane made from inherently fire-resistant materials. Fire Resist Barritech VP is applied to exterior wall assemblies where it functions as an air barrier and a water-resistant barrier. Fire Resist Barritech VP is vapor-permeable - moisture vapor can diffuse directly through the membrane. Fire Resist Barritech VP 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. Fire Resist Barritech VP 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 Fire Resist Barritech VP to bridge cracks and seal around penetrations, which creates a truly continuous, monolithic air and water barrier.

### Features and Benefits

- Fire-resistant composition permits use in many wall assemblies requiring NFPA 285
- Dries to a distinctive blue color for easy identification (lighter blue color when wet)
- 180-day UV resistance allows flexibility in schedule
- Vapor-permeable feature permits use in wall assemblies where a vapor barrier is not needed
- 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
- Fire Resist Barritech VP is a warranted air/vapor barrier system from Carlisle Coatings & Waterproofing



### 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 into contact with Barritech VP and CCW accessories, and verify compatibility through CCW. All surfaces accepting Barritech VP 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 exceeding ¼ inch across shall be filled with materials and technique approved by CCW. As Barritech VP and CCW Accessories cannot span any gap in excess of ¼ inch (exception: 1 inch gap for P/S Elastofom), electrical/mechanical penetrations, structural steel penetrations, columns/beams, expansion/seismic joints,

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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's Barritech VP details for guidance.

### 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 exceeding ¼" across shall be filled with grout or mortar.

#### Concrete Masonry Unit (CMU)

Mortar joints shall be struck flush and shall be free of voids exceeding ¼" across. Mortar droppings shall be removed from brick ties and all other surfaces accepting Barritech VP and CCW accessories. Mortar joints shall be allowed to cure 3 days minimum before installation of Barritech VP.

#### 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 VP 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 705FR-A. 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 Eastoform. 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 three methods: 1) Prep surface with CCW contact Adhesive and install 4" 705FR-A centered over joint; 2) 4" DCH reinforcing fabric centered over joint and imbedded in Barritech VP; 3) Fill joint with approved sealant and tool as shown in CCW details. Window openings, inside-outside corners, base of wall, roofline, control joints and other transitions shall be flashed with 705FR-A or Liquifiber™-W imbedded in Fire Resist Barritech VP or DCH Reinforcing Fabric imbedded in Fire Resist Barritech VP. P/S Eastoform may be used to detail expansion joints and window wall transitions. Please consult CCW details for guidance.

Apply Fire Resist Barritech VP over surfaces at minimum 0.060" (60 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. Theoretical application rate is 25 ft<sup>2</sup>/gal in one coat. Fire Resist Barritech VP may also be applied with a paint roller. For roller application, apply a minimum of two 0.030" (30 mils) wet thickness coats. Theoretical application rate is 50 ft<sup>2</sup>/gal for each coat. For roller application, allow Fire Resist Barritech VP to dry firm between coats.

705FR-A details can be applied to the substrate or over cured Fire Resist Barritech VP. All surfaces shall be prepped with CCW Contact Adhesive before installation of 705FR-A. 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 705FR-A. Neighboring pieces of 705FR-A shall lap 2" minimum. If 705FR-A is installed over Fire Resist Barritech VP, seal terminating edges of 705FR-A with CCW-201, Sure-Seal Lap sealant or approved sealant by others. If 705FR-A is installed to the substrate, lap Fire Resist Barritech VP at least 2" over edges of 705FR-A.

For installation of LiquiFiber-W in Fire Resist Barritech VP details, fill all gaps with approved sealant. Apply a bead of Fire Resist Barritech VP at 30 wet mils thickness. Lay LiquiFiber-W into Fire Resist Barritech VP and press in place with chip brush or drywall knife. Set the LiquiFiber-W tight into corners (no bridging), and then smooth over surface. Overlap neighboring pieces of LiquiFiber-W at least 2" and apply 30 wet mils of Fire Resist Barritech VP into the laps. Immediately encapsulate the LiquiFiber-W with a second coat of Fire Resist Barritech VP. Cover all LiquiFiber-W with Fire Resist Barritech VP the same day of installation. Liquifiber-W 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-W, with the following differences: fill all gaps exceeding ¼" with approved sealant. DCH Reinforcing Fabric is not suitable for use over complex, multi-plane details or on inverted surfaces.

Fire Resist Barritech VP may be left exposed up to 6 months (180 days). 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 0.060" (60 mils) wet thickness coating of Fire Resist Barritech VP.

## Clean Up

Promptly clean uncured Barritech VP from hands, tools, surfaces and spray equipment with tap water. Cured product must be removed mechanically or by soaking in solvent, such as xylene.

## 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.

## Packaging

### Barritech VP

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

### Other CCW Products:

#### Fire Resist 705FR-A

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

Fire Resist 705FR-A is available with standard or low temperature (LT) 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 cans

HP-250 Primer: solvent-based, packaged in 2.5-gal pails

Low-VOC Primer: OTC Compliant, solvent-based, packaged in 1-gal cans

### LiquiFiber-W

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:

#### LM-800XL (under Fire Resist Barritech VP)

Trowel-grade synthetic rubber sealant packaged in 29 fl-oz cartridges, 12/ case and in 5-gal pails (Note: maximum UV exposure of 10 days)

#### CCW-201 (over or under Fire Resist Barritech VP)

2-part, non-sag polyurethane sealant packaged in 1½-gal kits

#### Sure-Seal Lap Sealant (over or under Fire Resist Barritech VP)

1-part, solvent-based synthetic rubber packaged in 10.3 fl-oz cartridges, 25/case

#### Sealants by Others: (over or under Fire Resist Barritech VP)

Polyurethane, polyether or MS polymer sealant meeting ASTM C920 Type S or M, Grade NS, Class 25, 35, 50 or 50/100, Use NT Outdoor Grade Acrylic Latex Caulk meeting ASTM C834 Type OP Grade minus 18°C

#### Sealants by Others: (over Fire Resist Barritech VP only)

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

## Storage

Store Fire Resist Barritech VP and accessory products in a location protected from temperature extremes, precipitation and direct sunlight. Protect Fire Resist Barritech VP from freezing temperatures during delivery, storage and handling. Shelf life of Fire Resist Barritech VP in original, unopened packaging, stored under these conditions, is one year from the date of manufacture.

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## Fire Resist Barritech VP

### Typical Properties

Property	Method	Results
Color	--	Un-Cured: Light Blue Cured: Medium Blue
Application Temperature	--	Minimum 40°F
Volume % Solids	--	66%
Drying time of 60 mil wet film at 73°F/50% RH*	--	3 hr until tack-free 48 hr until fully dry
Coverage (Theoretical)**	Percent solids calculation	25 ft <sup>2</sup> /gal (60 wet mils, 40 dry mils)
Volatile Organic Content (VOC)	--	<52 g/L
Water Resistance of In-place membrane	Rilem Tube – 60 wet mils on CMU AND AATCC 127, modified 60 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 – 60 wet mils on CMU with imbedded ties	No visible bubbling
Nail Sealability	ASTM D1970	Pass
Water Vapor Permeance	ASTM E96 B (Water Method) ASTM E 96 A (Desiccant Method)	14 Perms 0.7 Perm
Pull-Off Adhesion	ASTM D4541, modified 4" wood puck	> 30 PSI on CMU and OSB (maximum reading on gauge) > 12 PSI on DensGlass (de-lamination of facer from gypsum core)
Elongation at Break	ASTM D412	500%
Low-Temp Flexibility	ASTM D1970, 180° bend over 1" mandrel	No cracking at -20°F
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
Mold Resistance	ASTM D5590	No Growth
Peel Adhesion	ASTM D903	13 lb/in on CMU and DensGlass Gold (facer failure)
Air Permeance	ASTM E2178 - Mod Single, 60 mil wet coating spray-applied to CMU	<= 0.001 L/s*m <sup>2</sup> @ 75 Pa [0.0002 CFM/ft <sup>2</sup> @ 1.57 PSF]
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.

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 latex caulk. Barritech VP spray-applied at 60 mils wet. Liquifiber-W reinforcement at details. CCW-201 @ window-wall interface.	Air Leakage: Maximum 0.012 L/s*m <sup>2</sup> @ 75 Pa [0.0024 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 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.
Water Resistance of In-Place Membrane	ASTM E331, Single, 60 mil wet coating spray-applied to CMU	No visible leakage to interior after 15 minutes water spray rack @ 6.24 PSF
Surface Burning	ASTM E84. Product applied @ 60 mils wet, full coverage, to cement board substrate.	Flame Spread Index 15, Smoke Generation Index 135
Measurement of Heat Release by Cone Calorimeter	ASTM E1354. 50 kW/m <sup>2</sup> Heat Flux	Peak Heat Release Rate: 167 kW/m <sup>2</sup> Total Heat Release: 14.7 MJ/m <sup>2</sup> Effective Heat of Combustion: 12.3 MJ/kg

\* 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.