



AIR & VAPOR BARRIER

Barriseal™

Description

Barriseal is a water-borne asphalt emulsion modified with a blend of synthetic polymers and special additives. Barriseal is used as an air barrier, vapor barrier and water resistive barrier in above-grade wall assemblies. The product is applied through co-spray, 1-part spray or roller application to achieve a nominal 0.040-inch (40 mils) dry film thickness membrane. Barriseal can be applied over masonry, concrete, exterior gypsum sheathing, plywood, OSB and many other common building materials. The product is fully adhered to the substrate, flexible and rubber-like.

Features and Benefits

- Co-spray applied product has instant resistance to rain wash-off and can be applied in cool & damp conditions: Reliable all-season installation
- High water resistance of cured membrane: Permits use in high moisture exposure areas
- Non-flammable and fume-free composition: Contributes to safety during installation, legal in all 50 states
- Monolithic coverage and self-sealing properties around fasteners: Highly air- and water-tight installation
- Co-spray application covers large areas quickly, in a single coat: Reduces time and cost.
- Same product can be applied by co-spray, 1-part spray or roller: Versatile application, simplified inventory
- Barriseal is a warranted air/vapor barrier system from Carlisle Coatings & Waterproofing

Installation

Before application, obtain full, safe access to the area and mask adjacent surfaces to protect from overspray or drips. Verify that the product is within shelf life, as indicated on the product label. Inspect the freeze indicator on the pallet to verify if it has been broken from exposure to freezing temperatures. Contact CCW Technical Service for information on product inspection if the freeze indicator has been broken.

The following conditions shall be detailed in accordance with CCW Barriseal standard details:

- Sheathing joints: cover with 2" width tooled ribbon of Barribond or 4" width DCH Reinforcing Fabric embedded in Barriseal.

- Rough openings, pipe/duct penetrations, sheathing inside/outside corners: CCW-705/705 XLT strip over surface prepared with CCW contact adhesive or LiquiFiber™ embedded in Barriseal or DCH Reinforcing Fabric embedded in Barriseal
- Expansion joints, control joints, termination at head/foot of wall, transitions of dissimilar materials: CCW-705/705 XLT strip over surface prepared with CCW contact adhesive.

Corner treatments shall cover the transition and extend at least 3 inches on each side. Rough opening treatment shall extend 3 inches minimum onto the wall and shall return into the rough opening deep enough to provide continuous seal of the fenestration to the air barrier. Consult Barriseal details for more information. All terminating edges of CCW-705/705 XLT shall be covered with a 1" width tooled ribbon of Barribond or LM 800 XL.

Co-Spray Application: Load Barriseal and Barricure into the spray system and start it up according to the instructions given in the CCW Spray Equipment Brochure. Spray product onto wall surfaces, holding the gun approximately 20" to 24" from the surface. Keep the gun pointed square to the surface while spraying surfaces from the bottom, upward. Minimum wet mil thickness by spray shall be 65 mils, measured with a comb type wet mil gauge immediately after spray and before the emulsion breaks. Apply a maximum of 80 mils wet thickness per coat

Co-Spray at Ambient Temperature below 40°F: Store Barriseal and the spray equipment in an area maintained at or above 50°F. Employ measures, such as a heated trailer drum heaters and a heat exchanger to keep the product in drums and lines warm (ideally above 70°F) during spray. Keep the hose and gun reeled in except during spray. Maintain Barricure dilution at 4:1 ratio (Water: Barricure). Warmer product sprays, builds and cures more consistently than cold product. Do not heat product higher than 120°F.

1-Part Spray Application: Load Barriseal into the spray system and start it up according to the instructions given in the CCW Spray Equipment Brochure. Spray product onto wall surfaces, holding the gun square to the surface. Use a cross-hatch pattern to lay an even coat. Build 65 mils total wet thickness in multiple coats. Apply a maximum of 40 mils wet thickness per coat. Allow first coat to dry firm before covering with the next.

Recommended Tip Sizes for Co-Spray and 1-Part Spray Application:
 High Coverage: GHD 635
 Detail Coat: GHD 429

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Roller Application: Apply Barriseal to surface with a medium nap paint roller at a maximum wet mil thickness of 35 mils per coat. Build 65 mils total wet thickness in multiple coats. Allow first coat to dry firm before covering with the next.

Provide proper coverage over opaque surfaces and details as shown in Barriseal standard drawings. Provide complete coverage over surfaces, so that there are no voids, pinholes or similar passages through membrane. Allow the membrane to dry completely before subjecting it to inspection for air/water leakage and adhesion testing. Drying time varies with substrate, ambient temperature and humidity. Membrane is dry when it appears black and rubber-like, and feels dry when pressed.

Procedure for Repairing Damage to Installed Membrane: Remove damaged and loosely-adhered material. Clean weathered or dirty surfaces with a towel wet with xylene. Re-apply Barriseal over area using co-spray, 1-part spray or roller application technique.

Limitations

- Do not allow product in packaging or in spray equipment to freeze.
- Maximum permitted exposure time of Barriseal on a vertical wall is 30 days.
- Do not apply product during rain or snow.
- Do not use in areas where temperatures exceeding 150°F are anticipated.
- Do not perform 1-part spray or roller installation if rain is expected during the drying time of the product.
- Product is designed to be used as a positive side water barrier and will not function as negative side water barrier.
- Not intended for traffic resistance or as a wearing surface.
- Do not install on roofs.
- Do not install over PVC membrane, silicone, uncured sealants or other incompatible materials.
- Keep edge of membrane ½" minimum back from finished exterior. Do not allow the membrane to come into contact with any visible sealants.

Delivery, Storage & Handling

Store Barriseal and accessory products in a location protected from temperature extremes, precipitation and direct sunlight. Protect Barriseal pails and drums from freezing. Shelf life of Barriseal in original, unopened

packaging, stored under these conditions, is twelve (12) months from the date of manufacture.

Packaging

Product	Description	Size
Main Product		
Barriseal	Asphalt emulsion air/vapor barrier. Co-spray, 1-part spray or roller application	50-gallon drum 5-gallon pail
Barricure	Chloride-free curing agent for co-spray application of Barriseal. Dilute at 4:1 ratio tap water: Barricure. 1 pail treats about 3 drums.	5-gallon pail
Self-Adhered Flashing and Contact Adhesives		
CCW-705/ 705 XLT	40-mil self-adhering sheet flashing/membrane, 36 mils of rubberized asphalt + 4 mils cross-laminated HDPE facer. CCW-705 for installation at 40°F and above. CCW-705 XLT for installation at 15°F to 60°F.	36" x 75' roll 100' rolls of 24", 18", 12", 9", 6" and 4" width
CAV-GRIP	Aerosol spray contact adhesive packaged in pressurized cylinders. Reusable spray gun and 6', 12' or 18' hoses are sold separately and are attached to cylinder for dispense.	40# cylinder with 30-lb. fill weight of adhesive
CCW-702	Standard solvent-based contact adhesive	5-gal pail
CCW-702 LV	OTC-compliant, solvent-based contact adhesive	5-gal pail
CCW-702 WB	Water-based contact adhesive	5-gal pail
Imbedded Reinforcements		
LiquiFiber	Glass matt consisting of randomly oriented strands in soluble binder. Ideal for window rough openings.	300' rolls of 6" and 12" width
DCH Reinforcing Fabric	Woven polyester fabric. Ideal for corners and board joints.	324' rolls of 4", 6" and 12" width
Sealants		
Barribond	High-solids, low VOC STPE-based liquid flashing and detail sealant.	20 fl-oz sausages, 16 per case
LM-800XL	Trowel-grade synthetic rubber termination mastic.	29 fl-oz cartridges, 12 per case 5-gallon pails

Clean Up

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

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 contact Barriseal and CCW accessories, and verify compatibility through CCW. All surfaces accepting Barriseal 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 Barriseal and CCW Accessories cannot span any gap in excess of ¼" (exception - up to a 1" gap for PS Elastoform), 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's Barriseal 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 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 Barriseal and CCW accessories.

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 Barriseal 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-treated and pressure-treated wood must be kiln dried to accommodate the less than 20% moisture content requirement.

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.

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Typical Properties

Property	Method	Results
Color		Uncured: dark brown, cured: black
Volatile Organic Content		<70 g/L
Shelf Life		12 months
Percent Solids (weight)		62%
Coverage (Theoretical)*		24 sq. ft. per gallon
Co-Spray Minimum Application Temperature		40°F with standard procedure, 20°F with cold-weather measures
Drying time at 73°F/ 50% RH: co-spray application 65 wet mils		Firm cure < 5 minutes, Fully dry in 12 hours
1-part spray or roller minimum application temperature		40°F, ambient and substrate
Drying time at 73°F/ 50% RH: 1-part application		4 h for 40 mil wet coat, 48 h for 65 wet mil system to dry firm
Service Temperature		-20°F to 149°F
UV Exposure		30 days maximum
Resilience	ASTM D5329	98% (recovery)
Low-Temp Flexibility	ASTM D1970	No cracking at -20°F, bent over 1" mandrel
Low-Temp Crack Bridging	ASTM C1305	No cracking after 10 cycles at -15°F
Extensibility over Crack after Heat Aging	ASTM C1522	No cracking
Peel Adhesion (lb/in)	ASTM D903	HDPE Film 12.2, Concrete 14.1, CMU 14.1, DensGlass® Gold 13.1
Pull-Off Adhesion	ASTM D 4541, modified 4" wood puck	20 PSI on Densglass Gold >28 PSI on CMU (max load capacity of pull tester)
Elongation	ASTM D412	1,000%
Water Vapor Permeance	ASTM E96 (desiccant method)	0.02 Perm
Air Leakage Through Assembly	ASTM E283	<0.02 L/s*m ²
Air Permeance, 40 Mil Thickness Free Film	ASTM E2178	0.000 L/s*m ²
Air Permeance, CMU Substrate	ASTM E2178, Mod Barriseal-S at minimum 40 mils cured on CMU	0.009 L/s*m ²
Water Leakage Through Assembly	ASTM E331	No visible leaks
Wind Loading of Assembly	ASTM E330	No de-lamination of membrane or propagation of air leakage.
Air Barrier Assembly Test	ASTM E 2357. Gypsum sheathing over steel studs, wall assembly. Sheathing joints were prepared with Barritape. Gaps, joints, penetrations and rough opening primed with CCW 702 and reinforced with CCW 705. Barriseal-S spray-applied at 40 mils cured.	Air Leakage: Maximum 0.0603 L/s*m ² @ 75 Pa [0.0119 CFM/ft ² @ 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, 1440 Pa [110 mph wind], windward and leeward load, 10 sec each direction.
Nail Sealability	ASTM C1970	Pass
Water Resistance to Hydrostatic Pressure Head	AATCC 127-03 mod. 22: [55 cm] column of water for 5 hours	No water leakage through membrane

*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.