

SCIENCE. SERVICE. SOLUTIONS.



# AIR & VAPOR BARRIER

Self-Adhering, Fluid-Applied Membranes & Flexible Flashings



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## Self-Adhering, Fluid-Applied Membranes & Flexible Flashings

Carlisle Coatings & Waterproofing, Inc. (CCW) offers a broad range of solutions to meet specific needs for building envelope protection. CCW offers technical services, research and development and manufacturing capabilities from its headquarters in Wylie, TX and two additional manufacturing facilities in Terrell, TX and Carlisle, PA. The CCW network is further supported by over 50 manufacturer's representatives directed by regional sales

offices throughout the United States and Canada. CCW offers a complete line of waterproofing and air barrier products for the architectural, general construction, industrial and maintenance industries. Carlisle Coatings & Waterproofing, Inc. is part of Carlisle Construction Materials, which is the largest division of Carlisle Companies, Inc. Carlisle Companies, Inc. is a multi-billion dollar company, publicly traded on the NYSE.

### The Significance of Air Barriers in Building Construction

The evidence is clear. Air barriers provide more energy-efficient, durable and comfortable buildings. A 2005 study completed by National Institute of Standards and Technology\* confirms that air barriers reduce building energy use from heating and cooling by up to 37%. The economic benefit of energy savings is obvious, as the cost of energy continues to skyrocket.

Air barriers also play a major role in improving environmental quality. Residential and commercial buildings use 40% of U.S. energy and contribute about 38% of carbon dioxide emissions. This growing awareness has resulted in mandatory air barrier requirements for government buildings and projects seeking LEED® certification.

### Requirements for Air Barriers

Continuous air barriers are required per the 2012 International Energy Conservation Code (IECC) in climate zones 4–8. The American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 90.1-2010 "Energy Standard for Buildings Except Low-Rise Residential Buildings" requires continuous air barriers in all zones with the exception of single wythe CMU in Zone 2B and semi-heated structures in Zones 1–6. Air barriers also significantly contribute toward LEED credit requirements.





## Membrane Air Barrier Systems Offered by CCW

CCW is a recognized leader and expert in the growing air barrier industry. CCW's fully adhered membrane air barrier systems easily fulfill the toughest code requirements and specifications. Choose from any of the systems indicated in the table below.

Product	Description	Advantages
Fire Resist Barritech VP	Fire-resistant spray- or roller-applied vapor-permeable air barrier	Fire resistant ready substitute for vapor-permeable building wrap. Fast installation. Monolithic coverage.
Fire Resist Barritech NP™/NP-LT	Fire-resistant spray- or roller-applied vapor, air and water-resistive barrier	Fire resistant. Fast installation. Monolithic coverage.
CCW-705	Self-adhering air & vapor barrier	Factory-controlled thickness and composition. All-season application.
Fire Resist 705FR-A	Self-adhering, sheet-applied	Fire, heat and UV resistant aluminized facer
Fire Resist Barritech 705 VP	Self-adhering, sheet-applied	Fire Resistant, vapor permeable
Barriseal®-S	Spray-applied air & vapor barrier	Fast installation. All-season application. Monolithic coverage.
Barriseal-R	Roller-applied air & vapor barrier	Monolithic coverage. No spray equipment needed.

## Flexible Flashings

CCW also manufactures high-quality flashing materials, which are essential for moisture and air leakage protection at critical areas of the building. These products are pre-cut to convenient sizes. CCW's flexible flashings are indicated in the table below.

Product	Description	Advantages
CCW-705 Air & Vapor Barrier Strips	40-mil self-adhering flashing	Window openings, joints, terminations, transitions
Barritape™	20-mil self-adhering flashing	Sheathing joint tape
CCW-705 TWF	40-mil self-adhering through-wall flashing	Through-wall flashing for cavity wall construction
Pre-Kleened™ EPDM TWF	40-mil EPDM through-wall flashing	

## Air & Vapor Barrier Membranes

These are ideal for use in wall systems that require both an air and vapor barrier. Usually, these types of wall systems are used in climates with long, cold winters or in persistently warm, humid climates. Combining the air and vapor barrier into one application provides efficiency and better performance. This practice also enables omission of sheet plastic vapor retarders from the interior side of wall assemblies in cold climates. As shown in the drawing of Wall Design A, properly constructed walls that use combined air and vapor barriers keep the dew point outside of the membrane year-round. This strategic layering of materials prevents trapping or accumulation of moisture. In the event of leaks or built-up moisture, the wall can also dry readily to the interior.



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## Self-Adhering, Fluid-Applied Membranes & Flexible Flashings

### Self-Adhering Sheet Membranes

#### CCW-705

CCW-705 Air & Vapor Barrier is a 40-mil- thick membrane, which consists of a tough, cross-laminated HDPE film fully coated with polymer-modified asphalt adhesive. The membrane is coated with a disposable silicone paper release liner, which is removed during application. CCW-705 Air & Vapor Barrier is offered in convenient roll sizes of 36" x 75', 24" x 100' and 18" x 100'. Through simple peel-and-stick application, the product can be applied to diverse substrates including concrete, concrete block, gypsum sheathing, plywood, OSB and many others. All surfaces require preparation with a CCW contact adhesive to ensure strong, permanent adhesion. CCW-705 is cut from the roll to manageably sized pieces, and adhered to the substrate. Installation is sequenced to provide shingled laps of adjacent pieces. Non-shingled laps, end laps, corner details, brick tie penetrations and similar potential leak paths are sealed with CCW-704 or LM-800XL detail mastic. CCW-705 LT Air & Vapor Barrier is also available to enable installation at lower ambient temperatures. CCW-705 Air & Vapor Barrier with accessory products is a complete system of factory-controlled thickness and composition that can be installed in just about any season without the use of special tools or equipment.

#### Fire Resist 705FR-A

Fire Resist 705FR-A Air & Vapor Barrier is a 40-mil-thick (0.040 inch) self-adhered sheet air and vapor barrier composite membrane consisting of a rubberized-asphalt adhesive laminated to fire resistant aluminum foil/HDPE composite facer. In addition to being tough and dimensionally stable, the facer provides heat reflectivity and fire resistance.

Fire Resist 705FR-A is provided in rolls of various widths lined with disposable silicone-coated release paper. The release paper is removed to expose the adhesive as the membrane is pressed in place. Fire Resist 705FR-A provides a complete barrier to moisture and air when adhered to an above-grade substrate. Cut sizes are also useful for other above-grade wall flashing applications. Fire Resist 705FR-A is cold-applied and will adhere firmly when pressed against the substrate.

#### Fire Resist 705 VP

CCW-705 VP is a 23-mil-thick composite membrane consisting of a breathable specially engineered film fully coated on one side with a permeable adhesive. The adhesive side of CCW-705 VP has a silicone-coated release film, which is removed and discarded during installation.

CCW-705 VP is provided in rolls of various widths, is cold-applied and will adhere firmly when pressed against the substrate. The vapor permeable attributes of CCW-705 VP membrane permits the diffusion of water vapor while also performing as a water-resistive barrier.

### Fluid-Applied Membranes

#### Barriseal-S

Barriseal-S is a water-based, polymer-modified asphalt emulsion that is applied through approved spray equipment. The product is solvent-free and odor-free, so it can be sprayed safely, even within enclosed spaces. Applied at minimum 40 mils cured thickness, Barriseal-S is a highly elastic, rubber-like membrane that provides a waterproof, airtight and vapor-proof barrier. The product can be applied over concrete block, concrete, exterior gypsum sheathing, plywood, OSB and many other common building materials without the use of primer. Barriseal-S is applied from 55-gallon drums through co-spray with Barricure, an aqueous, chloride-free curing agent. Co-spray application provides high thickness build and quick cure at just about any ambient temperature. Barriseal-S is firm and dry to the touch almost instantly, which also provides instant rain resistance. Unlike one-part products, Barriseal-S will not wash off in the event of a sudden rain shower. As it's a fluid-applied product, Barriseal-S provides monolithic coverage over complex surfaces that would be difficult or impossible to cover with sheet products. Spray of Barriseal-S enables fast coverage in a single coat, which yields high productivity and generally a lower installed cost compared to sheet products or roll-on products.

#### Barriseal-R

Barriseal-R is a water-based, polymer-modified asphalt emulsion. The product's paste-like consistency affords easy coverage and thickness build with a medium to long nap roller. Barriseal-R can be applied over concrete block, concrete, exterior gypsum sheathing, plywood, OSB and many other common building materials without the use of primer. Barriseal-R can be used to cover an entire project, or for touch-ups, repairs and details on Barriseal-S projects. The product is odor-free, solvent-free and air-dries to form a rubber-like, fully adhered air and vapor barrier. Barriseal-R is applied from 5-gallon pails in two sequential 30-wet-mil coats, which dry to form a 40-mil membrane. As the product is air-drying, it must be applied at ambient temperatures of 40°F or higher. Like Barriseal-S, Barriseal-R provides monolithic coverage and can present a less costly and more effective installation compared to sheet products.

#### Fire Resist Barritech NP/NP-LT

Fire Resist Barritech NP/NP-LT is a fluid-applied membrane made from inherently fire-resistant materials. Fire Resist Barritech NP-LT is adapted for winter installations down to 25°F. Fire Resist Barritech NP/NP-LT is applied to exterior wall assemblies where it functions as an air, vapor and water resistive barrier. Fire Resist Barritech NP/NP-LT 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 NP/NP-LT is a single-component, air-drying product applied by spray or roller at nominal 0.040" dry film thickness. The high film thickness and flexible, elastic properties enable Fire Resist Barritech NP/NP-LT to bridge cracks and seal around penetrations, creating a truly continuous, monolithic air, vapor and water barrier.

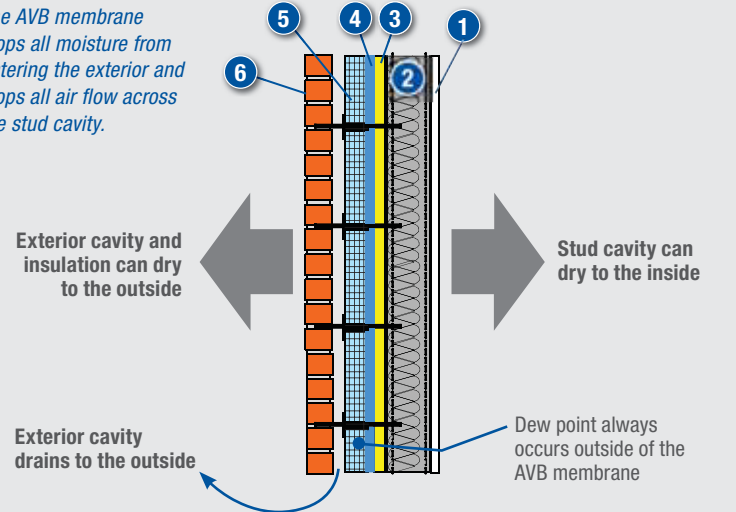
## CCW Air & Vapor Barrier in a Wall Assembly

### Commercial Cavity Wall Assembly

Suitable for USDOE Zones 1 through 6

- 1 Interior Gypsum**
- 2 Metal or Wood Studs:**  
4" x 6" deep galvanized steel with maximum R-13 un-faced batt insulation
- 3 Exterior Gypsum Sheathing**
- 4 Air & Vapor Barrier (AVB) Membrane:**  
Carlisle Coatings & Waterproofing Inc. - CCW-705 or Barriseal
- 5 Polystyrene Foam Board Insulation:**  
Minimum R-10. Suitable for cavity wall environment. Secured to steel studs with brick tie fasteners.
- 6 Brick Veneer:**  
With 2" drained and vented cavity.

The AVB membrane stops all moisture from entering the exterior and stops all air flow across the stud cavity.



## Wall Design A

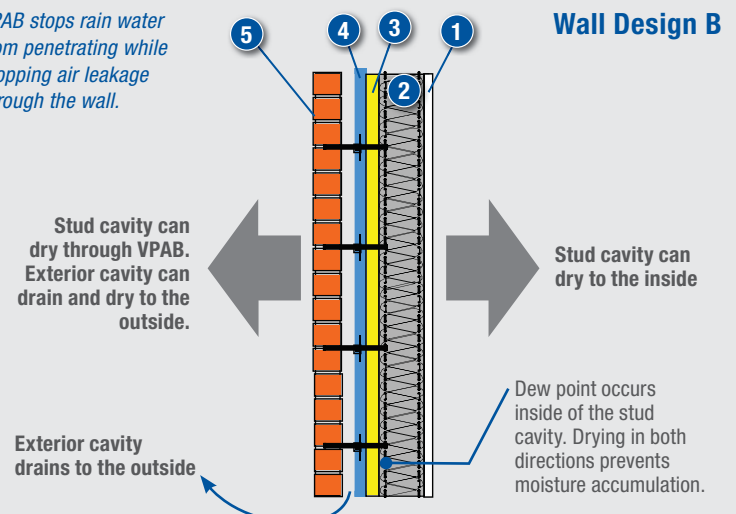
## Barritech VP in a Wall Assembly

### Commercial Cavity Wall Assembly

Suitable for USDOE Zones 2 through 4

- 1 Interior Gypsum**
- 2 Metal or Wood Studs:**  
4" x 6" depth with un-faced batt insulation, R-value to code.
- 3 Exterior Sheathing**
- 4 Vapor-Permeable Air Barrier (VPAB) Membrane:**  
Carlisle Coatings & Waterproofing Inc. - Barritech VP
- 5 Brick Veneer:**  
With 2" drained and vented cavity.

VPAB stops rain water from penetrating while stopping air leakage through the wall.



## Wall Design B

## Fire Resist Barritech VP

Fire Resist Barritech VP is a fluid-applied membrane that functions as an air barrier and a water-resistive barrier while allowing passage of water vapor. Fire Resist Barritech VP is water-based, low VOC and low odor, which makes it safe and pleasant to use. Fire Resist Barritech VP is a single-component, air-drying product packaged in 55-gallon drums and 5-gallon pails. Since the product is air drying, it must be applied at ambient temperatures of 40°F or higher. Fire Resist Barritech VP can be applied over concrete block, concrete, exterior gypsum sheathing, plywood, OSB and many other common building materials without the use of primer. The product is applied through approved spray equipment in a single 60-wet-mil coat or with a medium nap roller in two sequential 30-wet-mil coats. In either application, the product dries to a 40-mil thickness membrane. Fire Resist Barritech VP provides monolithic coverage and can present a less costly and more effective installation compared to sheet products.

Because Fire Resist Barritech VP is vapor-permeable, it can be readily used in place of conventional building wrap products. Fire Resist Barritech

VP presents a significant upgrade when compared to these products. Most building wraps are not air barriers. Also, they are generally not sealed at laps and will not seal around penetrating fasteners. Breaches in the installation of non-adhered building wrap products allow air and moisture to travel freely between the wrap and the substrate. Fire Resist Barritech VP is fully adhered to the substrate, while the high film thickness and flexible, elastic properties enable it to bridge cracks and seal around penetrations. These properties give Fire Resist Barritech VP a level of performance above and beyond that of building wraps.

## Accessory Products

CCW provides many accessory items that are crucial for the performance of the membrane air barrier and flexible flashing systems. Sourcing the product and accessories from a single manufacturer takes the guesswork out of the application and provides assurance of a proven system, backed and warranted by the manufacturer's best warranties.



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## Self-Adhering, Fluid-Applied Membranes & Flexible Flashings

### CCW-705 Air & Vapor Barrier Strips

CCW-705 Air & Vapor Barrier Strips are of similar composition to CCW-705 Air & Vapor Barrier, but are slit to narrower widths for convenient application. CCW-705 Air & Vapor Barrier Strips are offered in 100' rolls of 4", 6", 9" and 12" widths. The product is applied in a similar manner to CCW-705 Air & Vapor Barrier and is used to provide protection in critical areas such as window openings, transitions, terminations and joints.



CCW-705 Air & Vapor Barrier Strips Application.

### Barritape

Barritape is a 20-mil-thick self-adhering flashing, consisting of a flexible 2-mil polypropylene film fully coated with polymer-modified asphalt adhesive. The flashing is coated with a disposable silicone paper release liner, which is removed during application. Barritape is provided in 4" x 100' rolls.

### CCW-705 TWF

CCW-705 TWF is a 40-mil-thick self-adhering through-wall flashing, consisting of a strong 8-mil cross-laminated HDPE film fully coated with polymer-modified asphalt adhesive. The flashing is coated with a disposable silicone paper release liner, which is removed during application. CCW-705 TWF is provided in 36" x 75' rolls and in 100' rolls of 24", 18" and 12" widths.

### Pre-Kleened EPDM TWF

Pre-Kleened EPDM TWF is a 40-mil-thick, non-reinforced EPDM rubber membrane with the talc factory-cleaned from surfaces. This is the same EPDM offered for many years by Carlisle SynTec in the company's renowned single-ply roof systems. Pre-Kleened EPDM is designed for use as a through-wall flashing in masonry wall and cavity wall construction. Pre-Kleened EPDM is mechanically attached or bonded in place with adhesive. Unlike PVC flashings, EPDM will not become brittle over time in the cavity wall environment. Pre-Kleened EPDM is a thermoset, UV-resistant rubber.

### Barricure

Barricure is provided in 5-gallon pails as a liquid concentrate, which is diluted at a 3:1 ratio by volume with tap water. The Barricure solution provides instant set of Barriseal-S when sprayed through approved equipment. Unlike calcium chloride flakes, Barricure is clean and easy to use, non-abrasive and non-corrosive. Use of Barricure solution instead of calcium chloride flakes ensures longevity of spray equipment and compliance with specifications for chloride-free systems.

**DCH Reinforcing Fabric** is used to provide coverage and reinforcement at joint and corner details in Barritech VP/NP and Barriseal-S/R systems. To apply DCH Reinforcing Fabric, coat substrate generously with liquid membrane, immediately lay in fabric, and roll on more liquid membrane to fully encapsulate fabric. Packaged in 324' rolls of 4", 6" and 12" widths.

### LiquiFiber™

LiquiFiber is used to provide coverage and reinforcement at joint and corner details in Barritech VP and Barriseal-S/R systems.

LiquiFiber is packaged in 24' rolls of 4", 6" and 12" widths.

### CCW Contact Adhesive

CCW offers three different contact adhesives, any one of which shall be applied to the substrate to ensure consistent, aggressive and permanent adhesion of CCW self-adhering membranes and flashings. Choose the best one for your application.

**CCW-702 Solvent-based.** Applied by brush or roller. Packaged in 5-gallon pails and 1-gallon cans. Can be applied at cold ambient temperatures.

**CCW-702 WB Water-based.** Applied by brush, roller or spray. Packaged in 5-gallon pails. Applied at ambient temperatures above 40°F.

**CCW-702 LV Solvent-based.** Applied by brush, roller or spray. Packaged in 5-gallon pails, Can be applied at cold ambient temperatures.

**CAV-GRIP Aerosol spray.** VOC-compliant formula. Packaged in 40# pressurized cylinders. Sprayed through hose and pistol-grip gun attached to cylinder. Can be applied year-round as long as cylinders are maintained above 60°F. Provides fast, clean coverage and instant drying.



## Liquid Flashing & Detail Sealant

This critical accessory product is a non-sag, paste-like material used to seal non-shingled laps, end laps, penetrations, corner details and similar defects on the film side of CCW's self-adhering membranes and flashings. CCW Detail Mastics are formulated for adhesion to and compatibility with the polymeric film on the self-adhering products. Choose either of the products listed below.

**LM-800XL** Quick-drying, solvent-based synthetic rubber. Will not cold-flow. Compatible with most joint sealants, including silicone. Packaged in 5-gallon pails and in 29-fl-oz cartridges.

**CCW-704** Solvent-based polymer-modified asphalt. Not compatible with many joint sealants, including silicone. Keep product minimum ½" back from finished exterior. Packaged in 5-gallon pails and in 30-fl-oz cartridges.

**Sure-Seal® Lap Sealant** Designed for sealing splice edges of cured butyl membranes. Extremely durable material that dries to the touch in approximately 30 minutes. Packaged in 5-gallon pails and 10.2-oz. cartridges.

## BarriBond

BarriBond is a high-solids, silane-terminated polyether (STPE) based compound designed for detailing rough openings, penetrations, sheathing joints, countersunk screws, transitions, angle changes, and other critical details encountered in CCW Fluid-Applied Air Barrier Systems. BarriBond can also be used as a termination mastic over CCW Self-Adhered Sheet Flashing Membranes. BarriBond is a single-component, moisture-cured adhesive/sealant which is applied from a sausage caulking gun, then smoothed in place with a trowel or squeegee. BarriBond is offered in a

signature blue color for easy identification in warranted CCW Air Barrier Systems. The product is formulated for clean, easy application over horizontal, vertical, and inverted surfaces.

- BarriBond is a multi-use accessory, which simplifies CCW AVB installation
- BarriBond has been tested per ASTM E 2357 for air barrier performance and ASTM E 331 for water resistive barrier performance
- BarriBond has been tested thoroughly for adhesion and compatibility in CCW AVB systems
- BarriBond is a warranted item in CCW's AVB systems (Easily identifiable by signature deep-blue color)

## CCW Sealant and Fill Materials

These are two-part, chemical-cure, non-sag materials used for infill of inside corners, around pipe/conduit penetrations, cracks, rock-pockets, honeycomb and similar surface defects. The 2-part composition allows use of these products for fill of defects greater than ½" depth. After full cure, CCW membrane/flashing can be used over these products. Choose either of the following.

**CCW-201** Two-part, non-sag polyurethane joint sealant. Packaged in 1.5-gallon kits.

**CCW-703 LiquiSeal V** Two-part, trowel-grade, polyurethane waterproofing membrane. Packaged in 4-gallon kits.

## Sure-Seal Accessory Items

These are used to anchor, bond, splice, seal and patch Pre-Kleened EPDM TWF.

**90-8-30A Bonding Adhesive** Solvent-based, for bonding EPDM to substrate. 5-gal pails.

**Carlisle Low VOC Bonding Adhesive** Water-based, for bonding EPDM to substrate. 5-gal pails.

**Carlisle Low VOC Primer** Solvent-based, for bonding EPDM to substrate, 1-gal cans; 6 per box

**SecurTAPE™** Double-sided tape for bonding splices and terminations. 3" x 100' rolls.

**Splicing Cement** Provides strong, permanent bond of SecurTape to EPDM and to substrate. 1-gal cans.

**Lap Sealant** For finishing terminations and splices. 10.3-fl-oz cartridges.

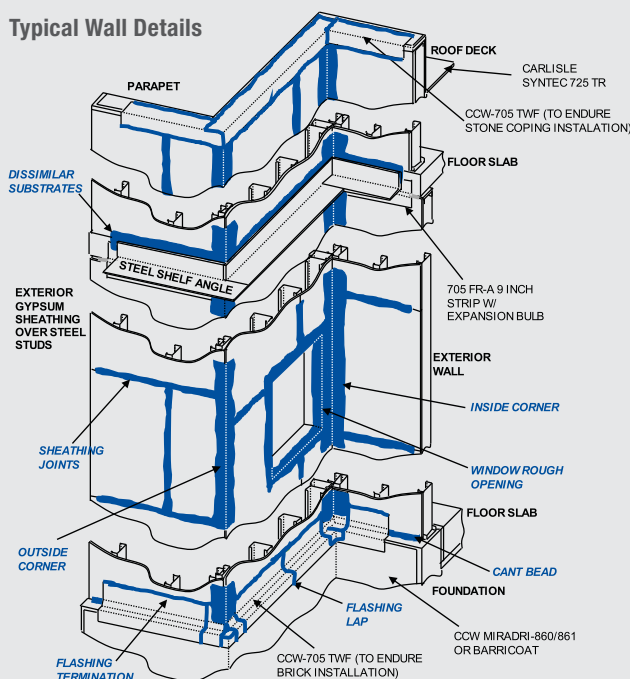
**Termination Bar** For mechanical attachment of vertical termination. Aluminum alloy, 1" x 98-mils x 10'. Holes pre-punched 6" on center.

**In-Seam Sealant** Liquid-applied splice compound. An alternative to SecurTape and Splicing Cement. 10.3-fl-oz cartridges.

**Water Cutoff Mastic** Non-skinning butyl mastic for water seal of mechanically attached vertical termination. 10.3-fl-oz cartridges.

**Pressure-Sensitive Inside-Outside Corners** Conformable self-adhering patch. 7" x 9" size.

Typical Wall Details



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## 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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