

GAF SAVaporRetarderXL

Self-Adhered Vapor Retarder



Product Description:

GAF SA Vapor Retarder XL is a self-adhered, vapor-inhibiting membrane designed for use in approved roofing membrane assemblies. It's composed of a tri-laminated woven polyethylene facer combined with an advanced, high-tack butyl rubber adhesive. The under-face is applied with a split silicone release film that is removed during installation. This uniquely durable product exhibiting high-tensile strength can be left exposed for up to 180 days when installed in accordance with published GAF specifications and details.*

Features and Benefits:

- ASTM E108 Class A and FM 4470 Class 1 Fire Ratings directly over steel deck****
- Designed to be self-sealing.
- Increased adhesion performance provides three times the peel strength compared to self-adhered modified bitumen vapor barriers.
- Use of a primer prior to installation is NOT required.
- Slip-resistant embossed walking surface.
- Extra-large roll size (603 square feet) results in fewer rolls and fewer field seams per job.

- Easy-to-peel, split-release film speeds the application process.
- Standard thickness is 31 mils; also available in 41 mils (contact your local GAF representative for details).
- Direct attachment at curbs and walls on TPO applications (refer to application instructions for approved adhesives).

Applicable Substrates:

GAF SA Vapor Retarder XL is designed to be applied to a variety of properly prepared decks or substrates:

- Steel
- Plywood/OSB
- HD ISO
- Concrete

Application:

GAF SA Vapor Retarder XL can be applied at temperatures as low as 25°F (-3.9°C) provided that the product has been stored in a heated area to ensure it is between 50°F - 100°F (10°C - 37.7°C) at time of installation. It is recommended that GAF SA Vapor Retarder XL be installed with minimum 3" (76.2 mm) side laps and 3" (76.2 mm) end laps.

Applicable Standards:

ASTM D5147, ASTM E2178, ASTM E96

* Refer to the appropriate application and specifications manual for the system being installed. Available at gaf.com.
 ** Values stated are approximate and subject to normal manufacturing variation. These values are not guaranteed and are provided solely as a guide.
 *** Thicker/heavier product available by special request only and sold as SA Vapor Retarder XL40.
 **** Refer to www.RoofNav.com for actual assemblies.

Product Specifications (approximate**)

	STANDARD XL ROLL	XL (41 MILS)
THICKNESS	31 mils	41 mils
ROLL WEIGHT	97 lb.	129 lb.
ROLLS SIZE	6 squares	
ROLL LENGTH	105'	
ROLL WIDTH	69"	

Product Specifications (approximate**)

PROPERTY	MD VALUE	XMD VALUE	TEST METHOD
Thickness, mils (mm)	31 (.79)		ASTM D1970
Thickness***, mils (mm)	41 (1.04)		ASTM D1970
Min. Tensile strength, lbf/in (kN/m)	70 (12.3)	70 (12.3)	ASTM D5147
Min. Ultimate elongation @ 73.4°F (23°C), %	31	31	ASTM D5147
Min. Tear resistance, lbf (N)	95 (423)	110 (489)	ASTM D5147
Min. Static puncture, lbf (N)	90 (400)	90 (400)	ASTM E154
Min. Lap adhesion, lbf/ft (N/m)	24 (350)	24 (350)	ASTM D1876
Min. Water absorption, %	0.01	0.01	ASTM D5147
Min. Peel resistance on steel, lbf/in (N/m)	25 (4,378)		ASTM D903
Max. Cold bending, °F (°C)	-30 (-34.4)		ASTM D5147
Max. Water vapor permeance, perm (ng/Pa.s.m²)	0.03 (1.7)		ASTM E96
Max. Air permeability, L/s.m²	0.001		ASTM E2178



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Introduction

This guide addresses proper installation of the GAF Self-Adhered Vapor Retarder XL (SA VR XL) product in the field, including around curb/wall areas and penetrations. This guideline does not address how to tie the vapor retarder into an air barrier system such as the exterior wall. Determining whether or not to apply a vapor retarder is a matter dictated by roof design, which makes that question outside the scope of this guide.

Preparation

- Ensure substrates are dry, smooth, free of contaminants, and in sound condition to receive SA VR XL application.
- Conducting an adhesion test is required
 - Prepare five 2" x 12" sections of the SA VR XL.
 - Remove 8" of the silicone release film, leaving 4" intact and unadhered.
 - Place the exposed side onto the roof deck and roll into place with uniform pressure using a 2" silicone hand roller.
 - Let the samples remain in place for a minimum 2 hours.
 - Use a handheld measuring scale, connected to the middle of the 4" unadhered portion, to pull up on the sample slowly and continuously, lifting 90 degrees from the roof surface until the sample is completely separated from the substrate.
 - Record the weight in pounds, as well as the mode of failure.
 - Favorable adhesion will result in separation within the butyl, which will leave deposits on the substrate and possibly remnants of the substrate.
 - A peel strength minimum of 9 pounds per 2 inches should be achieved on all installed deck types. If not, contact GAF to determine how to proceed.

Substrate Considerations

Concrete	Structural concrete should cure for at least 28 days prior to installation of the vapor retarder.
	Contact GAF Design Services for additional information for lightweight concrete.
Steel Deck	Minimum 22 ga. sheet metal plates (6" x 66") must be securely fastened to the steel deck at all SA VR XL end lap locations to ensure support and uniform sealing of the vapor retarder lap.
	All side laps need to rest directly on a flute.
Plywood / OSB	Decks must have solid blocking (no H clips) when applying SA VR XL directly to ply/osb roof deck.
	Where seismic bracing is present, considerations must be made to protect application of SA VR XL where seismic straps may create potential for damage.
Gypsum / Cement Boards / GAF EnergyGuard™ HD Iso	Products must be purchased through GAF and acceptable for self-adhered roofing membranes.
Coverboard	Securement of gypsum / cement boards must be with acceptable LRF (low-rise foam) purchased through GAF or with appropriate fasteners and flat insulation plates purchased through GAF.

Extended Exposure Installations

Field

- Starting at the low point of the roof, unroll GAF SA VR XL over the prepared substrate and align the material with the correct placement along the roof perimeter. Maintain 3" side laps and 3" end laps. For steel decks, install SA VR XL parallel to flutes, and install a steel plate at all end lap areas. Side laps should be placed on top of steel flutes.
- While maintaining placement of the SA VR XL material, carefully remove the silicone release film from the backside, keeping the film low and at a 45 degree angle to the length of the sheet. The SA VR XL must lay flat to the substrate and be free of wrinkles or "fishmouth" bubbles.
- Use a soft bristle broom to apply light pressure over the installed SA VR XL and follow up with a minimum 50-lb weighted roller to firmly secure it to the substrate.
- At curb/wall intersections, carry the SA VR XL up the curb/wall a minimum 3 inches or to the planned finish height of roof insulation. NOTE: fully wrapping curb/walls may be required by the designer of record.
- Detail areas such as T laps, roof to curb/wall transitions, and penetration areas will require rolling into place with a silicone or steel hand roller. Apply a bead of GAF FlexSeal™ Caulk Grade to the top of all finished T laps and feather into place.
- Double-check to ensure the finished application is free of wrinkles, bubbles, or punctures. Cut out any wrinkles or bubbles, clean the SA VR XL surface with appropriate GAF TPO Cleaner, and apply an SA VR XL patch that extends past the damaged area a minimum 3 inches in all directions. Apply a bead of GAF FlexSeal™ Caulk Grade to any cut edges.

Curb/Wall

- All laps should be overlapped a minimum of 3 inches, including curb/walls. All curb/wall bases and corners must be overlapped 3 inches.
- Double-check to ensure the finished application is free of wrinkles, bubbles, or punctures. Cut out any wrinkles or bubbles, clean the SA VR XL surface with appropriate GAF TPO Cleaner, and apply an SA VR XL patch that extends past the damaged area a minimum 3 inches in all directions. Apply a bead of GAF FlexSeal™ Caulk Grade to any cut edges.

Penetrations

- Refer to GAF SA VR XL details

Best Practices for Extended Exposure

- **GAF SA VR XL may be left in place during construction for a maximum period of 180 days.** If SA VR XL is being exposed, considerations need to be made in regards to foot traffic, weather, drainage, and other variables that might affect the SA VR XL prior to installation of the final roof assembly. The GAF SA VR XL must be evaluated for any damage and properly cleaned prior to installation of the roofing assembly. Undertaking such evaluation and repair is extremely important for the product to perform as a vapor retarder.
- Repair – All physical items must be identified and marked for repair. Clean the SA VR XL surface with appropriate GAF TPO Cleaner, permit time to flash

off/dry, and apply a patch repair of SA VR XL overlapping damaged areas a minimum of 3 inches in all directions. If damage is extensive in an area, installation of a new SA VR XL sheet staggered from existing sheet laps may be required.

- Once all repairs have been made, clean the entire roof surface in prior to installation of one of the following manners of roofing system:
 - Base layer of roofing system or insulation mechanically fastened through SA VR XL to deck
 - Adhered base layer of roofing system or insulation (Adhesion test required if using LRF adhesives)

Compatible Adhesives for Field of Roof Insulation Installation

- Only LRF adhesives distributed by GAF and noted as acceptable for insulation attachment may be applied over the SA VR XL surfacing. They include:
 - Olybond500® Roofing System Equipment-Free Canister System.
 - GAF LRF Adhesive
 - AF LRF Adhesive XF
 - Olybond500® Spot Shot

Note: Refer to the appropriate GAF Roofing Systems Overview and General Requirements Manual for adhesive application rate and installation procedures.

- Only insulation may be adhered directly to the GAF SA VR XL surfacing. Attachment of roofing plies/membrane with hot asphalt, sbs adhesive, solvent or water-based bonding adhesive is not acceptable.

Compatible Adhesives for Curb/Wall Flashing

- GAF Everguard® TPO smooth and fleeceback membranes may be installed directly over SA VR XL at curbs/walls using the bonding adhesives located in the table below.
- GAF Everguard® PVC smooth and fleeceback membranes over SA VR XL at curbs/walls is not acceptable. An approved substrate (HD Polyiso, Gypsum/Cement Board, Plywood/OSB) must be mechanically fastened prior to adhesion of PVC/PVC KEE Membrane.

Everguard® TPO (Smooth)	Everguard® TPO Quick-Spray Bonding Adhesive
	Everguard® TPO Quick-Spray Bonding Adhesive LV50
	Everguard® TPO SBA 1121 Bonding Adhesive
	Everguard® Low VOC Bonding Adhesive
Everguard® TPO (Fleeceback)	Everguard® 3sq Low VOC Bonding Adhesive
	Olybond 500® Canisters
Asphaltic Roofing Systems	Requires installation of acceptable substrate fastened through SA VR XL prior to installation of asphaltic flashing

Note: Refer to the appropriate GAF Roofing Systems Overview and General Requirements Manual for adhesive application rate and installation procedures. Positive Slope is required on Extended Exposure installations. Contact GAF Design Services at designservices@gaf.com for code requirement assistance if necessary.