ACFOAM® CROSSVENT® & CROSSVENT® RB

DATA SHEET

PRODUCT DESCRIPTIONS

ACFoam® CrossVent®

- The patented insulation consists of a thermally efficient polyiso insulation board with 1.0", 1.5" or 2.0" vent spacer strips separating 7/16 in. APA/TECO rated OSB from the polyiso foam insulation to create a cross ventilating airspace.
- Combines the desirable benefits of a nailable surface and insulation with the addition of a cross ventilating airspace.
- Made to order in standard 4' x 8' (1220mm x 2440mm) size panels and in nominal thicknesses of 2.5" to 6.5". Non-Standard vent spaces are available on special order. Also available with minimum 19/32" CDX plywood.
- Atlas recommends a staggered double-layer application of ACFoam®-II and CrossVent®.

ACFoam® CrossVent®RB

- Improves the thermal efficiency of standard CrossVent® by including a radiant barrier on the underside of the OSB nailing surface.
- Consists of a polyiso insulation board with 1.0", 1.5" or 2.0" vent spacer strips. These strips separate the 7/16" APA/TECO rated radiant barrier OSB from the polyiso foam insulation to create a cross-ventilating air space. The radiant barrier prevents most radiant heat transfer and reduces the temperature gradient across the polyiso board. The spacer strips allow air to flow through the air space, thereby helping to further dissipate heat build-up beneath the OSB.
- Made to order in 4' x 8' (1220mm x 2440mm) size panels and in nominal thicknesses of 2.5" to 6.5".

ACFoam® CrossVent® and CrossVent® RB use CFC-, HCFC-, and HFC-free foam blowing technology with zero ozone depletion potential (ODP) and zero (negligible) global warming potential (GWP).

RECOMMENDED USES

ACFoam® CrossVent® & ACFoam® CrossVent® RB

- Designed for use over sloped unventilated roof decks. Slopes must be appropriate for the type of roof system specified.
- The primary is to provide a thermally efficient insulation with uniform cross venting that promotes air circulation required by many shingle manufacturers.
- Allows heat to dissipate while providing a nailable surface and efficient insulation in a one-step labor saving process.

Note: Ventilation design is solely the responsibility of the project designer. Designer should consider size of air space, ventilation capabilities of soffit and ridge vents, and length of run, among possible considerations. Atlas recommends a staggered double-layer of ACFoam®-II and CrossVent® or CrossVent® RB for additional energy savings.

STORAGE

Factory applied packaging is intended only for protection during transit. When stored outdoors or on the job site, the insulation should be stacked on pallets at least three inches above ground level and completely covered with a weatherproof covering such as a tarpaulin. The temporary factory applied packaging should be slit or removed to prevent accumulation of condensation. Roof insulation which has become wet or damaged should be removed and replaced with solid, dry insulation.

TECHNICAL DATA

NOMINAL THICKNESS		in	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
		mm	64	76	89	102	114	127	140	152	165
LTTR-VALUES*	*With 1.0" Air Space		6.0	9.0	12.1	15.3	18.5	21.7	25.0	-	-
	RSI**		1.06	1.58	2.13	2.69	3.26	3.82	4.40	-	-
	*With 1.5" Air Space		-	6.0	9.0	12.1	15.3	18.5	21.7	25.0	-
	RSI**		-	1.06	1.58	2.13	2.69	3.26	3.82	4.40	-
	*With 2.0" Air Space		-	-	6.0	9.0	12.1	15.3	18.5	21.7	25.0
	RSI**		-	-	1.06	1.58	2.13	2.69	3.26	3.82	4.40
Pieces/Package			18	15	13	11	10	9	8	7	7
Square Feet			576	480	416	352	320	288	256	224	224

TOTAL PACKAGES PER 45' TRUCKLOAD-22

*Long-term thermal resistance values (LTTR) of the polyiso foam were determined in accordance with CAN/ULC-S770 and ASTM C 1289, Annex A1. All test samples were third-party selected and tested by an accredited materials testing laboratory. The thermal resistance of air spaces does not apply when the air space is unsealed and subject to air exchange into and out of the air space, as occurs by design in cross ventilating nail base insulation with a high percentage of open air space.Therefore, only the LTTR of the ACFoam®-II base layer is reported.See ASHRAE Handbook Fundamentals, 23.7 "Factors Affecting Heat Transfer Across Air Spaces."

R means resistance to heat flow. The higher the R-value, the greater the insulating power. Compare insulation values before you buy. To get the marked R-value, it is essential that this insulation be installed properly.

****RSI is the metric expression of LTTR (m2 • K/W)**

NET FREE AREA OF VENTILATION PER LINEAR FOOT	
AIRSPACE DIMENSIONS	NFA/LF
1.0" Airspace	9.0 sq. inch
1.5" Airspace	13.5 sq. inch
2.0" Airspace	18.0 sq. inch

The NFA is derived by multiplying the air space dimension in inches by the length in inches of the CrossVent® board (less the spacing strips) and then dividing by eight, the length in feet of each panel. The ventilating capabilities of the soffit and ridge vents should be matched to the Net Free Area of ventilation (NFA) of the CrossVent®.

CODES AND COMPLIANCES

- Federal Specification HH-I-1972/GEN has been cancelled
- ASTM C 1289, Type V
- Miami-Dade County, Florida Product Control No. 08-0111.01 (with 19/32" plywood)
- State of Florida Product Approval #FL6796
- State of California, License #TC 1231
- IBC, NBC, UBC and SBC Sections on Plastic Foam Insulation (Chapter 26).
- FHA minimum property requirements
- ARMA insulated deck requirements
- APA/TECO rated OSB nailable surface

FM Standard 4450/4470 Approval (1-105, 1-90, 1-60)
ACFoam®, CrossVent® and CrossVent® RB Insulations are approved for Class 1 insulated roof deck construction. Refer to FM Approvals RoofNav for roof system details.

UL Standard 1256 Classification
Insulated metal deck construction assemblies - Construction #458, #120 and #123.

UL Standard 790 Classification (ASTM E 108)
For use with Class A, B or C shingles, metal or tile roof coverings.

UL Standard 263 Fire Resistance Classification (ASTM E 119)
Some classifications for fire resistance are P225, P230, P259, P508, P510, P514, P701, P717, P719, P723, P728, P732, P734, P739, P801, P815, and P819. See UL Fire Resistance Directory.

CrossVent® RB is covered by one or more claims of Patent #5,433,050.

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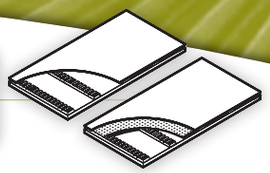
ACFOAM® CROSSVENT® & CROSSVENT® RB DATA SHEET



MULTI-LAYER INSTALLATION

Atlas recommends a staggered double layer application of ACFoam®-II as the first layer and CrossVent® or CrossVent® RB as the top layer. A two-layer application of ACFoam® is strongly recommended. The joints in each layer should be offset in order to avoid a vertically continuous joint through the total insulation thickness. Two layers (or more) with joints staggered can provide improved insulation performance by eliminating thermal bridges. This method also reduces condensation potential, thermal stress on the roof membrane, and air/moisture migration into the roof system. Refer to *Atlas Technical Bulletin #00-01*. This application will improve thermal performance and limit moisture and airflow through the roof system.

INSTALLATION OF ACFOAM® CROSSVENT® & ACFOAM® CROSSVENT® RB

CrossVent® or CrossVent® RB should be installed directly over the vapor retarder that has been applied over the deck. CrossVent® or CrossVent® RB should be installed with the 8 ft. dimension parallel to the eave and with the vent strips running up the slope of the roof. CrossVent® or CrossVent® RB shall be fastened directly through the venting strips in accordance with fastening patterns contained in the Atlas publication, *Guide Details for Atlas Nailable Insulations* (Current Edition). Leave 1/8" spacing between OSB panels to allow for expansion and contraction and stagger end joints in successive panel rows.

Atlas requires the use of Atlas Nail Base Fasteners. Refer to *Guide Details for Atlas Nailable Insulations* (Current Edition) for fastening patterns and other application recommendations.

Heavy snow and ice loads, very steep pitches, high interior humidity conditions, or very high wind areas may necessitate custom fastening patterns and design. For design conditions beyond those contained in the above referenced *Guide Details for Atlas Nailable Insulations* (Current Edition), a professional engineer or architect should be consulted.

Cover with Atlas No.15 roofing felt, No.30 roofing felt, or Summit Synthetic underlayments. Use only enough nails as required to keep underlayment in place. Insulation that has become wet must be replaced with dry product prior to applying the roof coverings. Atlas also offers a wide variety of roof shingle products including three-tab and laminated shingles, as well as felts and accessories.

Ridge and soffit vents are necessary to create an effective ventilating roof system, and should be matched in ventilating capability (NFA/LF) to the CrossVent® & CrossVent® RB.

VAPOR RETARDERS

Moisture vapor tends to migrate from warmer to cooler areas. In building construction, vapor retarders are used to inhibit or block the passage of moisture into walls or roofing assemblies. Sealed vapor retarders also serve as air barriers to limit the movement of moisture-laden air from the interior to the exterior. To determine whether a vapor retarder is necessary, calculations based on interior relative humidity, interior temperature, and the outside design temperature must be performed. Consult the *NRCA Roofing Manual, Membrane Roof Systems 2007* for more information regarding vapor retarders and dew point calculations.

The designer must be aware of the actual conditions of the specific installation. The designer has the responsibility to determine whether a vapor retarder is required and what type should be used; however, Atlas strongly recommends the use of a vapor retarder with a perm rating of 0.5 or less on all projects except those in extreme cooling climates. The vapor retarder should be placed over the structural deck. This recommendation is made to prevent excessive moisture (from construction materials or design conditions) from migrating through the roof assembly and causing ridging of asphalt shingles. For more information on vapor retarders, refer to *Guide Details for Atlas Nailable Insulations* (Current Edition).

WARNING - DO NOT LEAVE EXPOSED

This product is a polyiso organic plastic foam and will burn if exposed to an ignition source of sufficient heat and intensity, or open flame, such as a welder's torch. Like other organic materials, this product will release smoke if ignited. Do not apply flame directly to ACFoam® Roof Insulation when installing a torch applied modified bitumen system. This product should be used only in strict accordance with Atlas recommended uses and application instructions.

LIMITATION OF LIABILITY

The Seller shall not be liable for any incidental or consequential damages including the cost of installation, removal, repair or replacement of this product. The Buyer's remedies shall be limited exclusively to, at Seller's option, the repayment of the purchase price or resupply of product manufactured by Atlas in a quantity equal to that of the nonconforming product. Atlas distributors, agents, salespersons or other independent representatives have no authority to waive or alter the above limitation of liability and remedies.

PROPERTY	TEST METHOD	TYPICAL RESULTS
Dimensional Stability (Length and Width)	ASTM D 2126	<2 %
Comprehensive Strength (10% Deformation)	ASTM D 1621	20 psi (140 kPa) or 25 psi (172 kPa)
Water Absorption	ASTM C 209 / ASTM D 2842	<1 %, <3.5 %
Moisture Vapor Transmission	ASTM E 96	<1.0 perm (85.0 ng / (Pa•s•m2))
Product Density	ASTM D 1622	Nominal 2.0 pcf (32.04 kg/m3)
Flame Spread	ASTM E 84 (Full 10 min.)	40-60*
Smoke Developed	ASTM E 84 (Full 10 min.)	50-170*
Tensile Strength	ASTM D 1623	>730 psf (35 kPa)
Service Temperature	-	-40 to 200° F**

*The numerical ratings as determined by ASTM Test Method E 84 are not intended to reflect hazards presented by this or any other material under actual fire conditions. A flame spread index of 75 or less and smoke development of 450 or less meet code requirements regarding flame spread and smoke development for foam plastic roof insulation. However, the codes exempt foam plastic insulation when used in roof deck constructions that comply as an assembly with FM 4450 or UL 1256 (see IBC, NBC, UBC, and SBC Sections on Foam Plastic Insulation (Chapter 26). Smoke development does not apply to roofing.

**ASTM C 1289 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

The physical properties listed above are presented as typical average values as determined by accepted ASTM test methods and are subject to normal manufacturing variation.

FASTENER TECHNICAL INFORMATION

Atlas Nail Base Fasteners are specially engineered fasteners for installing CrossVent® and are required as a part of the CrossVent® Insulation System.

AVAILABLE LENGTHS FOR ACFOAM® CROSSVENT® FASTENERS													
2-5/8"	3"	3-1/2"	4"	4-1/2"	5"	5-1/2"	6"	6-1/2"	7"	7-1/2"	8"	8-1/2"	9"	9-1/2"

TECHNICAL DATA FOR ACFOAM® CROSSVENT® FASTENERS			
MATERIAL	MAJOR DIAMETER	HEAD TYPE	HEAD SIZE
Carbon Steel with Epoxy Coating	.245 Nominal	Flat Head with Recessed Drive	5/8" Nominal

For engineered fastening requirements, refer to Guide Details for Atlas Nailable Insulations. Atlas Nail Base Fasteners are required on all Atlas CrossVent® Insulation Systems.

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