

ASTM E-2129 & LEED™ Rating Points



GREEN Reflective Insulation and Radiant Barriers



SUSTAINABILITY

ASTM E-2129

Product Summaries

Alfol 1A

Alfol Type 1A multi-layer reflective insulation is layers of polyethylene coated paper, a liner board and aluminum foil. The board separates the paper from the foil for two air spaces, reducing cavity heat flow. Alfol makes an effective vapor retarder, and is available in standard widths for building cavities. Primary Application: Furred-out Masonry Walls.



AA2 Vapor Shield™

AA2 Vapor Shield reflective insulation is layers of polyethylene coated paper, a liner board and aluminum foil. The board expands and separates the paper from the foil to form two air spaces, reducing cavity heat flow. AA2 comes in a standard non-perforated version with vapor retarder uses and a Hi-Perm perforated version allowing vapor transmission. AA2 is available in standard widths for building cavities. Primary Application: Furred-out Masonry Walls.



VR Plus Shield™

VR Plus Shield reflective insulation is a layer of polyethylene-coated paper, foil-paper laminate, aluminum foil and layers of liner board. The board separates the materials for three air spaces, reducing cavity heat flow. VR Plus comes in a standard non-perforated version, with vapor retarder uses, and a Hi-Perm perforated version, allowing vapor transmission. VR Plus is available in standard widths for building cavities. Primary Application: Furred-out Masonry Walls



Silver Shield™

Silver Shield radiant barrier is a layer of aluminum foil laminated-paper strengthened with cross directional scrim, vacuum metalized PVC and layers of liner board. The board expands and separates layers to form an air space, reducing cavity heat flow. The product is installed to expose metalized PVC and foil to open air spaces, for significant radiant heat flow reduction. A Hi-Perm perforated version allows vapor transmission. Silver Shield is available in standard widths for building cavities or wider widths for hip roofs. Primary Application: Attic Radiant Barrier



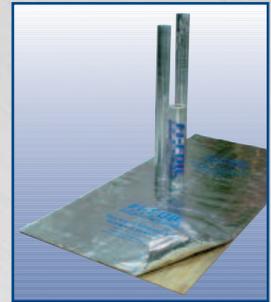
FSK Shield™

FSK single-layer foil scrim paper is laminated with fire retardant adhesive. The economical product is an insulation facing and a radiant barrier. The exposed foil reduces heat flow in the air spaces. FSK makes an effective vapor retarder. Primary Applications: FS25 Class A Insulation Facing and Roof Radiant Barrier



Radiant Shield NT™

Radiant Shield NT heavy-duty radiant barrier is two layers of aluminum foil laminated to woven poly and two layers of polyethylene for superior tear resistance. NT comes in a standard non-perforated version with vapor retarder uses and a Hi-Perm perforated version for vapor transmission. The foil when exposed to air reduces heat flow. Primary Applications: Attic Radiant Barrier and Bonus Room Walls



Concrete Shield™

Concrete Shield heavy-duty vapor retarder acts as insulation under concrete and is very effective with radiant floor heating. Its seven layers have two external layers of clear polyethylene enclosing two air-filled industrial grade plastic vacuum-formed bubbles with an internal layer of aluminum foil. The product comes in a 4' wide roll 125' long to block unwanted heat and vapor flow. Primary Application: Under Concrete Slabs with Radiant Heating Systems



RBI Shield™

RBI Shield or reflective bubble insulation is a multi-purpose reflective insulation and radiant barrier used in residential, commercial and agricultural applications. The air-filled industrial grade plastic vacuum-formed bubbles are enclosed with either two layers of aluminum foil or a layer of foil and a layer of white or black fire retardant polyethylene.

The foil when exposed to air reduces heat flow. RBI makes an effective vapor retarder. Primary Applications: Metal and Post Frame Buildings



RetroShield System®

Patented RetroShield System allows fast and easy installation in new and existing metal buildings. The system consists of RBI Shield Double Bubble with the integrated tape tab and the innovative Clip & Pin

fastening components. The system works alone or back-loaded with mass insulation to fit specific R-value requirements. The product is a vapor retarder and has a clean finished appearance. Primary Application: Metal Buildings



Patented Clip & Pin Systems

Installation is simple and fast with our innovative fastening systems. These clips make retrofit upgrades in metal buildings or new installations a snap.



Angle Clip Purlin Clip Beam Clip
Patent #6,324,808 B1 & #6,385,935 B2



Meets or Exceeds ASTM 1224 or ASTM 1313

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Radiant Barriers, Reflective Insulation and the Environment

There is a growing consciousness within the building community toward environmental responsibility. Many long standing initiatives, such as the standards defined by the American Society for Testing and Materials (ASTM) and Underwriters Laboratories (UL), have been amplified by new guidelines, like the U.S. Green Building Council's LEED™ rating System.

Reflective insulation and radiant barriers are a proven method for reducing energy costs that have been available long before the many green initiatives took root. In simple terms, reflective insulation and radiant barriers provide resistance to heat gain in summer and help reduce heat loss in winter. In addition to the obvious energy saving benefits, reflective insulation and radiant barrier products from Fi-Foil contain recycled content and are easily recycled at the time of deconstruction.

Fi-Foil's Leadership Position in Sustainable Construction

The Fi-Foil Company has been committed to the principles of sustainable construction, including energy conservation, life cycle performance, recyclability and minimal landfill impact. Our products are Energy Star compliant and meet or exceed various performance and code criteria established by national, regional and local governing bodies.

In all phases of our operations—product development, manufacturing, installation and maintenance—Fi-Foil strives for the highest standards of performance, safety and environmental protection.

ASTM E-2129

A significant reference in considering the sustainability of a building product is the ASTM Standard E-2129, Standard Practice for Data Collection for Sustainability Assessment of Building Products. First issued in 2001, this document offers a method for collecting data and accurately assessing the sustainable attributes of any given product.

Although this document does not assign a points system, Fi-Foil and its suppliers have answered the questions listed in E-2129 and these results are available from the company upon request.

LEAD DOG

Fi-Foil products have each been rated for their sustainability attributes in the Lead Dog GQ™ product rating system. These detailed results are also available upon request.



Understanding LEED

The Leadership in Energy and Environmental Design (LEED) rating system was developed and is administered by the U.S. Green Building Council (USGBC),

a national non-profit organization formed in 1993 to promote environmental responsibility with

the building construction industry. The council is comprised of a coalition of prominent industry leaders and encompasses building owners, developers, architects, bankers, manufacturers, trade organizations and government agencies.

It's important to understand that the LEED rating System and the U.S. Green Building Council certify projects, *not products*. However, it is the specific composition and/or use of products that contribute to various LEED points and to certification.

Fi-Foil Products Up To 17 LEED™



Interior Commercial Application – Metal Building



Saving the Planet

Products can contribute to certification in several ways. The composition of the product in terms of recycled content, the overall

recyclability of the product after it has achieved its life cycle of usefulness, where the product comes from, how the product

is used and how far the product travels from its point of manufacture to the construction site are only a few of the avenues toward earning potential certification points.

Can Contribute Project Credits



Interior Residential Application – Attic Radiant Barrier



Masonry Wall Application

Fi-Foil Radiant Insulation Potentially Contributes to the Following LEED Credits:

ENERGY & ATMOSPHERE – PREREQUISITE

Minimum Energy Performance

A required prerequisite of LEED is that the building meet minimal standards of energy efficiency, as defined by ASHRAE/IESNA Standard 90.1-1999 (without amendments) or meet the local energy code, whichever is more stringent.

The use of Fi-Foil Radiant Insulation on furred-out masonry walls, in vertical wall cavities, at the roofline and/or under floors contribute to energy efficiency by reducing heat flow and the transmission of radiant energy.

ENERGY & ATMOSPHERE – CREDIT 1

10 PTS.

Optimize Energy Performance

In accordance with ASHRAE/IESNA Standard 90.1-1999 (without amendments), up to 10 LEED points are available for lowering the energy costs in both new and existing buildings.

Just as with the previous prerequisite, Fi-Foil ALFOL 1A, AA2 Vapor Shield, VR Plus Shield, Silver Shield, FSK Shield, RSNT, Concrete Shield, RBI Shield and the RetroShield System can contribute to energy efficiency by reducing heat flow and the transmission of radiant energy in their appropriate floor, ceiling, wall and roof applications.

MATERIALS & RESOURCES – CREDIT 1

3 PTS.

Building Reuse

Up to 3 points are awarded for use of construction techniques and use of materials which serve to extend the life cycle of the building. Buildings that can be reused lessen the impact of new construction, transportation of materials and other negative effects.

The entire line of Fi-Foil reflective insulation and radiant barrier products are engineered to meet or exceed the longevity of the buildings framing components. This means that no amount of heat, light or atmospheric exposure will degrade the performance of these products for years and years to come.

MATERIALS & RESOURCES – CREDIT 3

2 PTS.

Resource Reuse

Up to 2 points can be earned if the materials on a project are salvaged or refurbished for reuse.

Most Fi-Foil products can be removed from an existing application and re-installed in a similar application.

MATERIALS & RESOURCES – CREDIT 5

2 PTS.

Regional Materials

Up to 2 points can be earned if Fi-Foil products are installed in a building located within a 500-mile radius of the Fi-Foil plant in Auburndale, Florida.

Total Potential LEED Credits

17 pts.