

Firestone Polyiso Insulation

ENERGY EFFICIENCY. POWERFUL PERFORMANCE.
SIGNIFICANT SAVINGS.



FIRESTONE ISO 95+™ GL FLAT INSULATION

FIRESTONE ISO 95+™ GL TAPERED INSULATION

RESISTA™ POLYISO INSULATION BOARD

FIRESTONE ISOGARD™ HD COVER BOARD

FIRESTONE HAILGARD™ COMPOSITE BOARD

Firestone
BUILDING PRODUCTS

NOBODY COVERS YOU BETTER™

THE PRODUCT OF CHOICE FOR LONG-TERM PERFORMANCE

Firestone Polyiso Insulation

WHAT IS POLYISO INSULATION?

Polyisocyanurate (polyiso) is a closed-cell, rigid foam insulation board made with recycled content that is widely used in commercial roofing.

WHY POLYISO INSULATION?

Polyiso insulation is the best choice as a cost-effective, energy efficient and environmentally responsible insulation product. A true environmental winner, polyiso is a good choice for Leadership in Energy and Environmental Design (LEED®) credits.

POLYISO'S UNIQUE BENEFITS INCLUDE –

- Highest R-value per inch
- Outstanding installed cost advantages
- Proven fire resistance
- Responsible impact on the environment through energy savings
- Preferred insurance ratings
- Superior strength
- Moisture resistance
- Building code approvals

Better for the Environment

- Firestone polyiso insulation products consist of a closed-cell polyiso foam core that is HCFC-free and has no Ozone Depletion Potential (Zero-ODP).
- All Firestone polyiso products comply with the United States Environmental Protection Agency and the Montreal Protocol requirements.



LEED BENEFITS

Energy and Atmosphere Credits

- EA Pre-requisite 2: Minimum Energy Performance
- EA Credit 1: Optimize Energy Performance (1 – 19 points)

Material & Resources Credits

- MR Credit 2: Construction Waste Management (1 – 2 points)
- MR Credit 3: Material Re-Use (1 – 2 points)
- MR Credit 4: Recycled Content (1 – 2 points)
- MR Credit 5: Regional Material (1 – 2 points)



Firestone Building Products belongs to the Polyisocyanurate Insulation Manufacturers Association and has certified LTTR-value products verified by the Quality Mark[™] Program.



POLYISO FOR LOWER HEATING COSTS & TAX INCENTIVES

The Energy Policy Act of 2005 provides tax deductions for owners of commercial buildings that exceed ASHRAE 90.1. Because polyiso insulation has the greatest energy efficiency performance of any building insulation on the market, it can help building owners meet and exceed the requirements to earn these tax benefits.

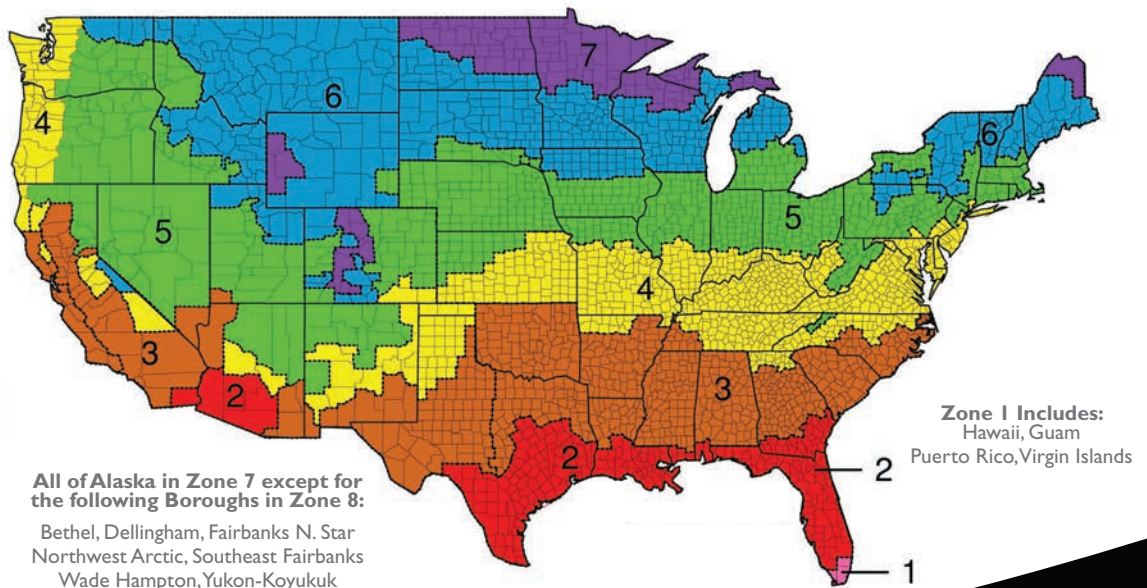
WHY FIRESTONE POLYISO INSULATION?

When installing a new roofing system, insulation can account for more than half of your investment. That's why using insulation from a manufacturer you trust is so important. Installing Firestone polyiso insulation as a part of a Firestone Total Roofing System provides a single source of quality, materials and warranty responsibility. Firestone Building Products is the only North American manufacturer to produce a complete line of roofing systems including insulation, EPDM, TPO, Modified Bitumen (APP and SBS), Built-up, and Metal roofing, plus standard and custom accessories. With Firestone, you get one source with everything needed for any roof design.

The R-value of Your Insulation Can Optimize Your Energy Savings in Any Zone

Commercial Roof Insulation Recommendations

- Zones 1 – 3
PIMA Recommended R-value — R-20
- Zones 4 – 6
PIMA Recommended R-value — R-25
- Zones 7 and 8
PIMA Recommended R-value — R-30



Firestone ISO 95+™ GL Insulation

BECAUSE IT'S HIGHLY ENERGY EFFICIENT WITH THE HIGHEST R-VALUE RATINGS PER INCH, THE USE OF ISO 95+ GL IN A FIRESTONE ROOFING SYSTEM PROVIDES A COST EFFECTIVE SOLUTION FOR TODAY'S ROOF DESIGN CHALLENGES AND IS PREFERRED FOR ANY AND EVERY ROOFING SYSTEM.



THE HIGHEST THERMAL RATINGS. THE HIGHEST VERSATILITY.

This versatile insulation is especially suited for FM approved and UL classified direct-to-deck applications/assemblies without an additional thermal barrier in most installations.

ISO 95+ GL polyiso insulation boards have a glass reinforced facer on both sides of the foam core and can be attached with hot asphalt or low rise foam adhesive to various substrates, or mechanically fastened with Firestone fasteners and plates.

PHYSICAL PROPERTIES		
PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM D 1622	2 pcf
Compressive Strength*	ASTM D 1621	20 psi
Dimensional Stability	ASTM D 2126	2% max.
Moisture Vapor Transmission	ASTM E 96	<1.0 perm
Water Absorption	ASTM C 209	<1.0% volume
Service Temperature	—	100°F to +250°F

* For requirements greater than 20 PSI, phone Firestone's Estimating Services Department at 800-428-4442.



THERMAL PROPERTIES

NOMINAL THICKNESS	NOMINAL THICKNESS	LTTR*	MAXIMUM FLUTE SPAN	MAXIMUM FLUTE SPAN
IN	MM		IN	MM
1.00	25.4	6.0	2.625	66.70
1.25	31.7	7.5	3.675	93.35
1.50	38.1	9.0	4.375	111.10
1.75	44.5	10.5	4.375	111.10
2.00	50.8	12.1	4.375	111.10
2.30	58.4	14.0	4.375	111.10
2.50	63.5	15.3	4.375	111.10
2.80	71.1	17.2	4.375	111.10
3.00	76.2	18.5	4.375	111.10
3.25	82.6	20.1	4.375	111.10
3.50	88.9	21.7	4.375	111.10
3.75	95.3	23.4	4.375	111.10
4.00	101.6	25.0	4.500	114.30

* Note: Long Term Thermal Resistance (LTTR) values have been determined in accordance with CAN/ULC S770.

Product Availability

Board sizes of 4' x 4' and 4' x 8' and in thicknesses of 1.0" to 4.0". Other sizes and thicknesses may be special ordered. Minimum order quantities may apply.

Firestone ISO 95+™ GL Tapered Insulation

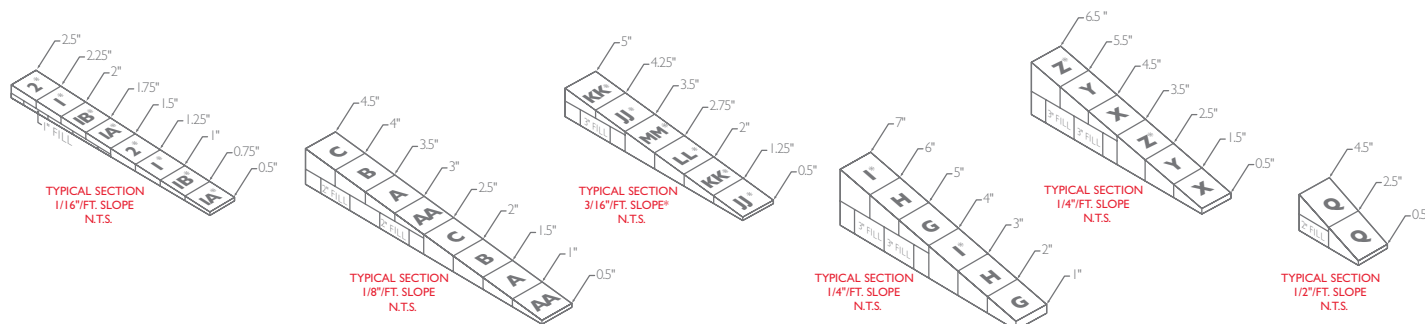
WHEN A SUBSTRATE SLOPE WILL NOT PERMIT EFFICIENT DRAINAGE, FIRESTONE TAPERED ISO 95+ GL POLYISO INSULATION PROVIDES AN EFFECTIVE AND ECONOMICAL SOLUTION. PROPERLY INSTALLED TAPERED ISO 95+ GL CAN EXTEND THE LIFE OF THE ROOF ASSEMBLY BY ELIMINATING PROBLEMS ASSOCIATED WITH PONDED WATER.



TAPERED INSULATION EXPERTISE AND PRODUCT SUPPORT

Firestone is committed to providing accurate and timely tapered take-offs that encompass all critical elements affecting proper drainage. The Firestone Tapered Network, a free service, uses the latest technology to offer architects, consultants, general contractors, distributors and roofing contractors a complete and accurate tapered insulation system for any project.

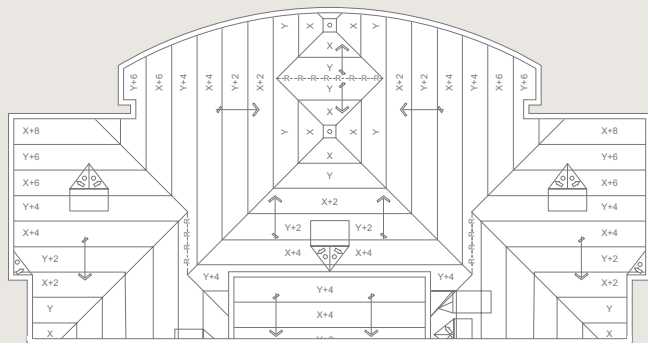
Working closely with the customer, Firestone's Tapered Network team will generate a proprietary CAD drawing that clearly identifies the proper placement of tapered insulation on the roof, including the location of crickets, drains and other elements critical to proper drainage.



Contact your local Firestone Sales Representative for additional information.



TAPERED INSULATION PLAN



These CAD capabilities enable the Estimating Services Department to generate customized drawings tailored to the unique requirements of the installation, minimizing the labor and material costs of the finished installation.

Contact Firestone's Estimating Services Department for a project quotation or layout guidance.
For site assistance or contractor support, contact Firestone's Tapered Project Management Team.
Call: 1-800-428-4442 • E-mail: estimatingervicesdept@firestonebp.com.

Product Availability

Board sizes of both 4' x 4' and 4' x 8' (special order), at standard slopes of $\frac{1}{16}$ ", $\frac{1}{8}$ ", $\frac{1}{4}$ " and $\frac{1}{2}$ "
Boards with slopes of $\frac{3}{16}$ " and $\frac{3}{8}$ " may be special-ordered. Board thickness ranges from 0.5" to 4.0" maximum in one layer.

Resista™ Polyiso Insulation Board

WHEN CONSIDERING INSULATION, ORGANIC FACED MATERIAL IS A POPULAR CHOICE. BUT FIRESTONE HAS INNOVATED THE NEW RESISTA POLYISO INSULATION BOARD—AN ECONOMICAL NEW CHOICE THAT PROVIDES COMPARABLE OR BETTER FIRE, WIND AND ENVIRONMENTAL PROTECTION.



THE BEST POLYISO INSULATION BOARD JUST GOT BETTER.

Firestone's Resista is rewriting the specs on what you think you know about polyisocyanurate insulation. Resista is a smart choice to add an enhanced degree of resistance to any roofing system, standing out in three critical areas:

• **Thermal Resistance** • **Fire Resistance** • **Mold Resistance**

Resista can also help contribute to overall LEED® certification due to its thermal efficiency, recycled content and zero ozone depletion.

FIRE RESISTANCE

Resista is the only 1" polyisocyanurate insulation board with a UL Class A rating for fire resistance when used over combustible decks and is compatible with single-ply and modified bitumen roofing systems. Competitors may require up to 3.1" of insulation to achieve comparable ratings.

UL ROOF ASSEMBLIES AND FIRE RATINGS

UL RATING	ROOF SLOPE	DECK TYPE	INSULATION	MEMBRANE
Class A	Max. ½":12"	Combustible	Min. 1" Resista	UltraPly™ TPO Mechanically Attached or Fully Adhered
Class A	Max. 1":12"	Non-Combustible	Min. 1" Resista	UltraPly TPO Mechanically Attached or Fully Adhered
Class B	Max 2":12"	Combustible	Min. 1" Resista	UltraPly TPO Mechanically Attached or Fully Adhered
Class A	Max ½":12"	Non-Combustible	Min. 1" Resista	FR EPDM, MAX, EcoWhite™ & LS-FR Fully Adhered or Mechanically Attached
Class A	Max. 2½":12"	Non-Combustible	Min. 1" Resista	Max FR Fully Adhered or Mechanically Attached
Class A	Max ½":12"	Combustible	Min. 1" Resista	Standard EPDM FR EPDM, MAX, EcoWhite & LS-FR Fully Adhered or Mechanically Attached
Class A	Max. ¼":12"	Non-Combustible	Min. 1" Resista	SBS or APP Torch or Cold Adhesively Applied
Class A	Unlimited	Combustible	Min. 1" Resista	UNA-CLAD™ Warranted metal roofing systems

* This chart is a brief synopsis of approvals utilizing Firestone Resista insulation board. Please refer to the Technical Database at www.firestonebpco.com for specific requirements and additional approvals.



MOLD RESISTANCE

Resista™ meets ASTM D3273 standards for mold resistance. It is double coated on both sides with a unique non-organic facer material, providing it with exceptional mold inhibiting properties.

BENEFITS

- Environmentally friendly (contains no hydrochlorofluorocarbons)
- Mold-resistant per ASTM D3273
- Recognized by the GREENGUARD Environmental Institute as highly resistant to mold growth based on independent testing using GREENGUARD test method GGTM.P040 for microbial resistance.
- Offers more roofing system choices
- Provides valuable energy savings
- Helps sustain the environment
- Enhanced FM codes utilizing reduced fastening with Resista Polyiso and ISOGARD™ HD Board
- LEED® credits for energy optimizations/material resources
- UL Class A over combustible decks
- May reduce installation time and labor costs
- Easy manipulation and placement

Product Availability

Flat Board sizes of 4' x 4' and 4' x 8'

Tapered Board sizes of 4' x 4' and 4' x 8'

Slopes ranging 1/8" per foot (.5%) to 1/2" per foot (4%)

Firestone ISOGARD™ HD Cover Board

Added protection for any roof.

A HIGH-DENSITY COVER BOARD, ISOGARD HD COVER BOARD COMBINES IMPACT RESISTANCE, MOLD RESISTANCE, ENERGY SAVINGS AND EASE OF INSTALLATION IN A SINGLE, DURABLE PRODUCT. AND BECAUSE IT'S LIGHTWEIGHT AND EASY TO CUT AND INSTALL, ISOGARD HD COVER BOARD CAN OFFER SAVINGS FROM REDUCED TRANSPORTATION COSTS, LABOR AND MATERIAL DURING APPLICATION. PLUS, IT PROVIDES THE HIGHEST THERMAL PERFORMANCE OF ANY ½" INSULATION COVER BOARD PRODUCT ON THE MARKET.



A WINNER IN WIND UPLIFT PERFORMANCE

Excellent wind uplift performance means Firestone ISOGARD HD requires fewer fasteners than other comparable products. In terms of energy efficiency, easy handling and other important advantages, Firestone ISOGARD HD is the clear winner.

REDUCE COSTS BY ACHIEVING DESIRED R-VALUE WITH ISOGARD HD

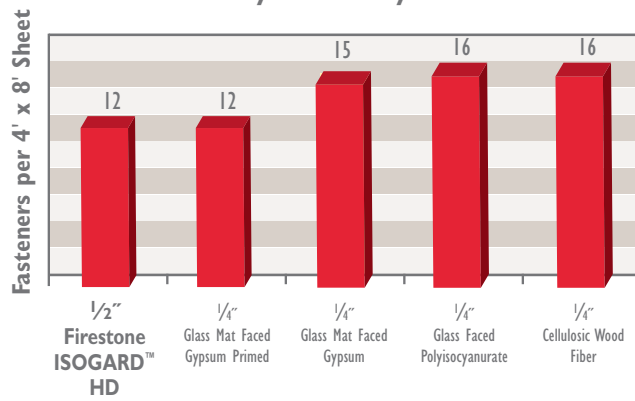
Suppose a design specification for a new warehouse calls for an R-value of 20 with a cover board. The following example demonstrates why ISOGARD HD is a better value:

SYSTEM 1			SYSTEM 2	
2 layers of 1.5" ISO = 18.0 R-value	vs.		2 layers of 1.75" ISO = 21.0 R-value	
½" HD Board = 2.5 R-Value	vs.		¼" gypsum = .28	
Total R-value = 20.5	vs.		Total R-value = 21.28	

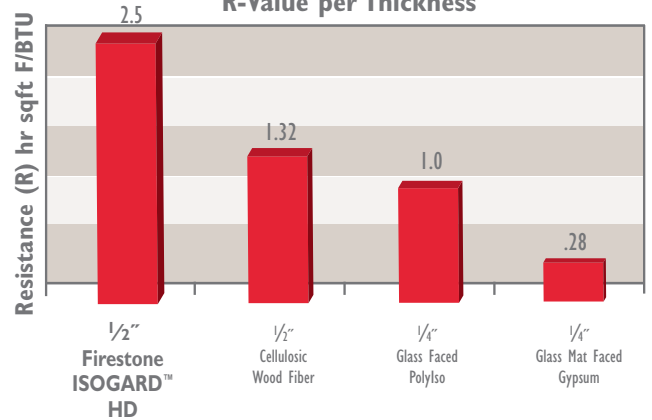
Utilizing the Firestone HD Cover Board helps reduce the thickness of the initial layers of insulation and thereby reduces the costs of the project.



**Fastener Density for I-90 Rating
Fully Adhered Systems**



R-Value per Thickness



Product Availability

Board sizes of 4' x 4' and 4' x 8'. Weight of 12 lbs. per 1/16" 4' x 8' sheets.

Wind uplift performance I-90 (at 12 fasteners per 4' x 8' board).

Firestone HailGard™ Composite Board

— Added protection for any roof. —

HAILGARD IS AN INSULATION PANEL CONSISTING OF A POLYISO FOAM CORE LAMINATED TO A 7/16" ORIENTED STRAND BOARD (OSB) ON ONE SIDE, AND A BLACK GLASS REINFORCED MAT FACER ON THE OTHER SIDE. THIS NAILABLE OSB SURFACE MAKES HAILGARD SUITABLE FOR USE WITH EPDM, TPO, MODIFIED BITUMEN AND METAL ROOFING SYSTEMS.



HailGard provides excellent thermal performance and is a suitable substrate over structural decks on low and steep roofing systems. Plus, it can be used as a component of a Firestone Platinum system to achieve a 30-year Platinum-PHW Warranty, protecting against accidental puncture, hail up to two inches in diameter and 100 mph winds.





THERMAL PROPERTIES			
NOMINAL THICKNESS	NOMINAL THICKNESS	LTTR*	WEIGHT
IN	MM		lb/sq ft
1.5	12.7	6.6	1.60
2.0	50.8	9.6	1.69
2.5	63.5	12.7	1.77
3.0	76.2	15.9	1.85
3.5	88.9	19.1	1.93
4.0	101.6	22.3	2.02

* Long-term thermal resistance (LTTR) values have been determined in accordance with CAN/ULC S770.



PLANT LOCATIONS

Firestone insulations are manufactured in eight plants located throughout North America:



• Jacksonville, FL

• Florence, KY

• Bristol, CT

• Corsicana, TX

• Salt Lake City, UT

• Youngwood, PA

• DeForest, WI

PACKAGING & SAFETY

Firestone ISO 95+™ GL Flat and Tapered insulation is wrapped during product packaging with Firestone TuffWrap™. Wrapping the product makes it easier and safer to work with—for those who ship the product and for those who install it. It's another example of our commitment to safety before, during and after our products are installed.

CAUTIONS & LIMITATIONS

Firestone insulation products are non-structural, non-load-bearing materials. The finished roof assembly should be protected from excessive roof traffic with proper walkway materials. Firestone's insulation products have been designed and engineered for use in commercial and industrial roofing applications. The manufacturer makes no claim as to their performance or suitability in residential applications.

WARNING

Polyiso foam will burn if exposed to a flame of sufficient heat and intensity. Firestone ISO 95+ GL polyiso insulation and Tapered ISO 95+ insulation should not be used in exposed or inadequately protected applications. Polyiso insulation must be installed in accordance with the manufacturer's recommendations.

LIMITED WARRANTY

Firestone warrants its insulation products sold to customers to be free of manufacturing defects and to meet Firestone's physical specifications. Under this limited warranty, any product that is proven to be defective when applied in accordance with Firestone's written instructions and in applications recommended by Firestone as suitable for this product would be replaced with like product (material only) at no charge. This is the buyer's sole and exclusive remedy. All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product. This limited warranty shall be IN LIEU OF any other warranty, express or implied, and including but not limited to any implied warranty of MERCHANTABILITY or fitness for a particular purpose. Firestone shall not be liable for any consequential or incidental damages.

THE FIRESTONE DIFFERENCE

One Source. Many Choices.

SERVICE, STATE-OF-THE-ART PRODUCTS, EXPERTISE – THESE ARE JUST A FEW REASONS WHY CONTRACTORS, BUILDING OWNERS, ARCHITECTS AND SPECIFIERS HAVE TRUSTED FIRESTONE BUILDING PRODUCTS FOR THEIR ROOFING NEEDS.

SINCE THE FIRST FIRESTONE BUILDING PRODUCTS WERE INSTALLED IN 1980, FIRESTONE ROOFING SYSTEMS HAVE CONSISTENTLY DELIVERED THE TWO CRITICAL NEEDS ALL BUILDING OWNERS DEMAND: OUTSTANDING DURABILITY AND LOW LIFE-CYCLE COST. TRUST FIRESTONE TO BRING YOU THE DEPTH OF RESOURCES TO ENSURE THE RIGHT SYSTEM FOR YOUR NEEDS, WHETHER FOR ONE BUILDING OR MANY.

A TRUE SINGLE SOURCE FOR ALL YOUR ROOFING NEEDS

MANUFACTURING

19 facilities throughout North America

PRODUCTS

Offers EPDM, TPO, APP/SBS modified bitumen roofing systems, metal roofing systems and a full line of accessories

QUALITY CONTROL

ISO 9001/ISO 14001 certifications

EXPERTISE

Installation experts and product support, plus a wide-ranging network of contractors, distributors and field sales representatives

STABILITY AND INNOVATION

More than 100 years of success in rubber polymer technology

RESOURCES

Part of Bridgestone/Firestone, the world's largest tire and rubber company offering a broad depth of raw materials availability for your convenience

R&D COMMITMENT

Annually invests millions of dollars in research and development

GREEN FOCUSED

Plays a global role in protecting the environment by focusing on recyclability, reflectivity, conservation and sustainability including the elimination of PVC membrane.

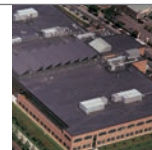


FIRESTONE ROOFING SYSTEMS

A Full Line of Products Designed to Perform and Endure

FIRESTONE RUBBERGARD™ EPDM

The most popular material for both new and reroof low-slope roofing applications. RubberGard EPDM provides outstanding durability and low life-cycle cost, along with design versatility and ease of installation.



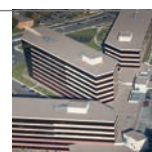
FIRESTONE ULTRAPLY™ TPO

White reflective surfaced UltraPly TPO conforms to the EPA's ENERGY STAR® requirements. UltraPly or ReflexEON™ TPO provide enhanced puncture, tear and abrasion resistance, as well as outstanding resistance to degradation from Ultraviolet (UV) radiation, ozone and chemical exposure.



FIRESTONE APP AND SBS MODIFIED BITUMEN

APP and SBS Modified Bitumen asphalt-based systems are available with smooth or granule surfaces. The diverse Firestone asphalt product line offers flexibility in roof design for specifiers and building owners.



FIRESTONE UNA-CLAD™ METAL

For steep slopes, Firestone offers metal roofing systems for both new construction and reroofing applications. In addition, Firestone offers multiple roof edge and coping systems for low-slope applications. A variety of metals, profiles and colors are available to meet inventive architectural needs.





Code Compliance — Firestone polyiso insulations bear a variety of code body compliances noted below:

- *Factory Mutual (FM) approved for Class 1 insulated steel deck construction. (Tested to FM 4450 standard)*
- *Foamed plastic for built-up roof covering classified by Underwriters Laboratories, Inc. (UL), as to an external fire exposure only (per UL-790)*
- *Foamed plastic classified by UL as roof deck construction material with resistance to internal fire exposure for use in Construction Nos. 120 and 123 (tested to UL 1256)*
- *UL Design numbers: P225, P230, P232, P259, P302, P508, P510, P514, P519, P701, P710, P713, P717, P718, P719, P720, P722, P723, P727, P728, P729, P730, P732, P741, P801, P814, P815, P818, P819, P824, P828*
- *Federal Specifications: HH-I-1972/ Gen. and HH-I-1972/2*
- *ASTM C-1289*
- *Based on current UL and FM test data, Firestone ISO 95+ GL complies with the IBC when installed in accordance with UL and/or FM requirements.*
- *Firestone ISO 95+™ GL insulation also meets Metro-Dade 03-0123.03 and Canadian standards CGSB-15.26-M86.*
- *National Research Council of Canada (NRC) Evaluation Listing CCMC 13274-L.*

Firestone
BUILDING PRODUCTS
NOBODY COVERS YOU BETTER™

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www.firestonebpco.com

Note: This brochure is meant only to highlight Firestone's products and specifications. Information is subject to change without notice. ALL products and specifications are listed in approximate weights and measurements. For complete product and detail information, please refer to the Technical Manual. Firestone takes responsibility for furnishing quality materials which meet Firestone's published product specifications. As neither Firestone itself nor its representatives practice architecture, Firestone offers no opinion on, and expressly disclaims any responsibility for, the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the owner should obtain opinions of competent structural engineers before proceeding. Firestone accepts no liability for any structural failure or for resultant damages, and no Firestone representative is authorized to vary this disclaimer.



HPG Uses 100% Green Power.
www.hardingpoorman.com



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100% WIND ENERGY



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