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Solaro Shield™

Multi-Layer Reflective Insulation



2024



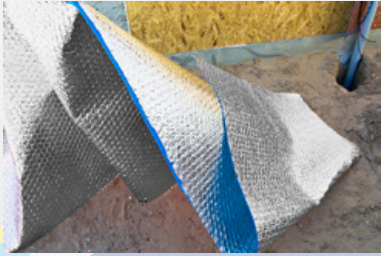
S O L A R O™

E N E R G Y

It's not different, it's better by design.

22955 McAuliffe Dr. • Suite A • Robertsdale, AL 36567

Multi-Layer Reflective INSULATION



Product Description

Solaro Multi-Layer Reflective Insulation (MRI) is engineered to increase energy efficiency, provide a clean finished appearance, and simplify installation for all residential, post frame, light-gauge steel, transportation and commercial insulation applications.

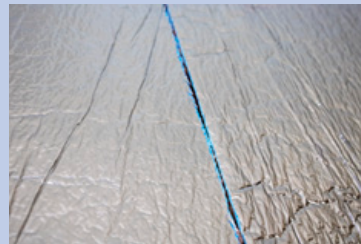
The core of the product is made of a proprietary flexible foam layer designed especially by Solaro that provides excellent reflectiveness and insulation characteristics. The core is 3/8" thick, providing additional insulation value and durability. In addition, the multiple facing combinations are thermally bonded in a unique process that provides a long term, quality finish to every insulation roll.

Solaro insulation can be thermally perforated, this system provides an easy permeability to moisture and allowing it to travel outside the structure, in the event no permeability is needed.

Models & Images

1. AL/AL - Perforated
 - 2'x50' = Super ML 2000
 - 4'x50' = Super ML 2001
 - 4'x150' = Super ML 2002

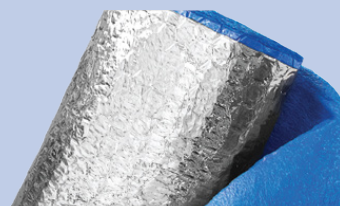
- Non-Perforated
 - Super ML 2003
 - Super ML 2004
 - Super ML 2005



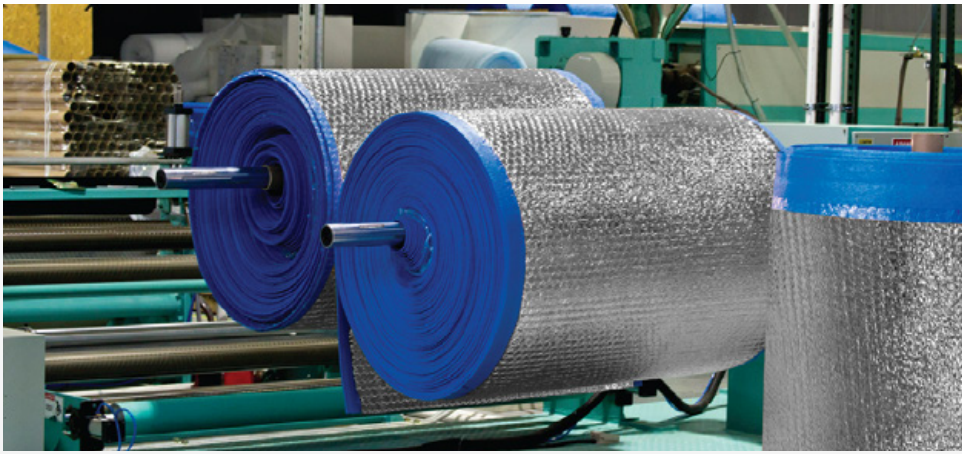
1. AL/AL - Perforated

2. Single Sided Aluminum
 - Perforated HW (House Wrap)
 - 2'x50' = Thermal HW 4000
 - 4'x50' = Thermal HW 4001
 - 4'x150' = Thermal HW 4002

- Non-Perforated
 - Thermal HW 4003
 - Thermal HW 4004
 - Thermal HW 4005



2. Single Sided Aluminum Perforated HW (House Wrap)



Product Use

Solaro products can be used for new construction as well as retrofit in a variety of applications, such as residential, commercial, horse, dairy or livestock building. As well as for finished walls, building insulation, condensation control, and as a thermal break and vapor barrier.

| | | |
|-------------|-------------------|---------------------------------|
| Wood Frame | Retrofit | EFX Spectra |
| Metal Frame | Light-Gauge Steel | 4'x125' (500 sq-ft) |
| Metal Roofs | Workshops | 2'x125' (6 rolls / 500 sq-ft) |
| Agriculture | House Wrap | 1.5'x125' (4 rolls / 500 sq-ft) |
| Residential | Attics | 1'x125' (3 rolls / 500 sq-ft) |

Features & Benefits

- Reflects up to 98% of IR (Infrared Rays)
- Nontoxic Lightweight Rolls
- Durable Construction and Long-Lasting Toughness
- Permeability Functions
- Multiple Facing Combinations
- Easy Installation with Utility Knife and Tape
- Insulation Improves Energy Savings by Improving Ventilation Systems Effectiveness
- Increase System Thermal Performance
- Use in retrofit or new construction
- Can be used for food storage
- Can be placed in tents for camping
- Cooler/Bags
- Body Thermal Wrap with Velcro Strips
- Car Thermal Protector Wrap





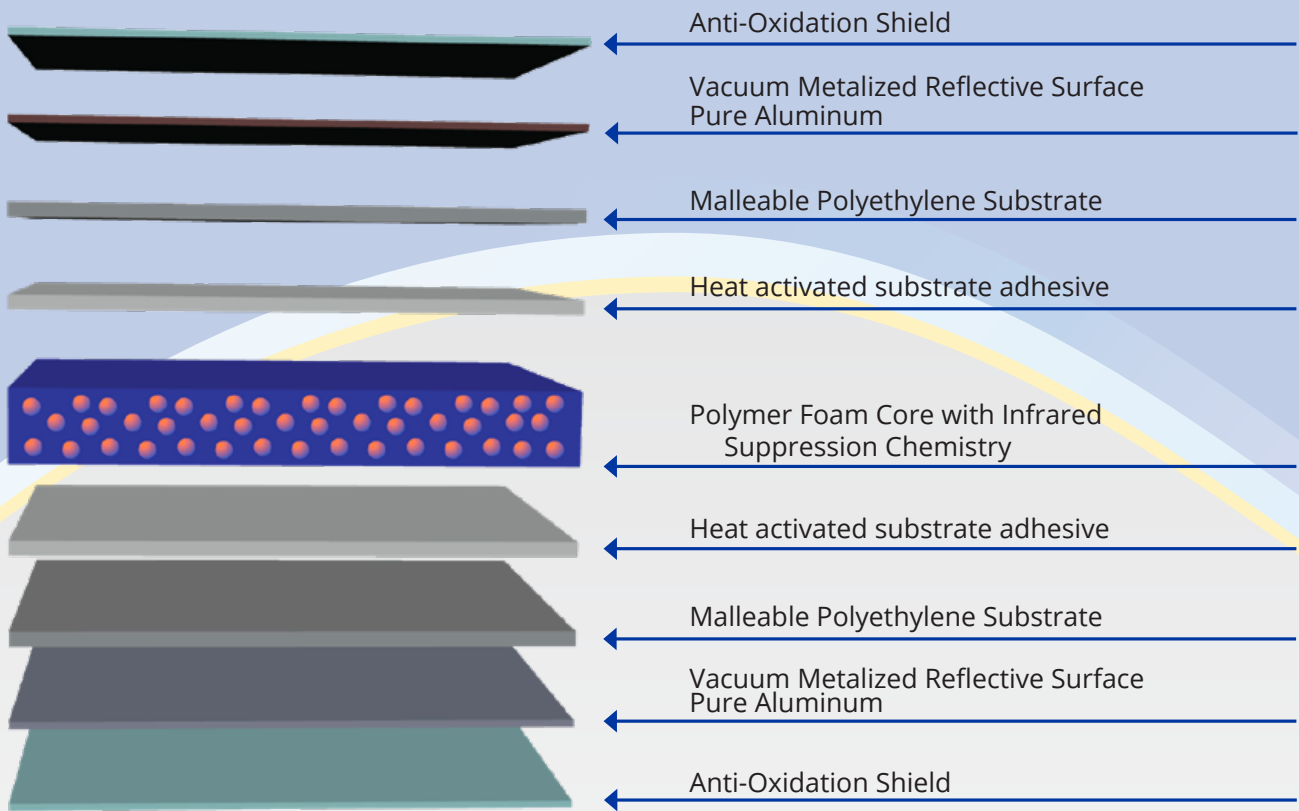
S o l a r o TM

E N E R G Y

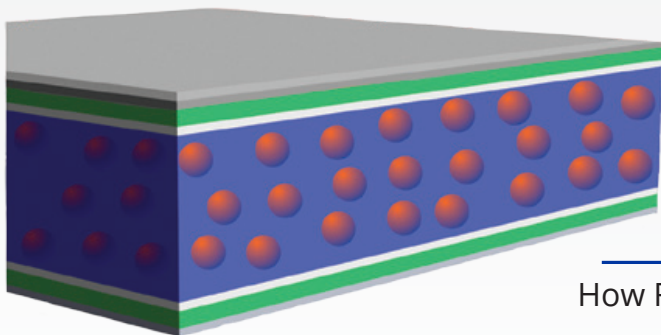
Surface REFLECTIVITY

Product Specifications

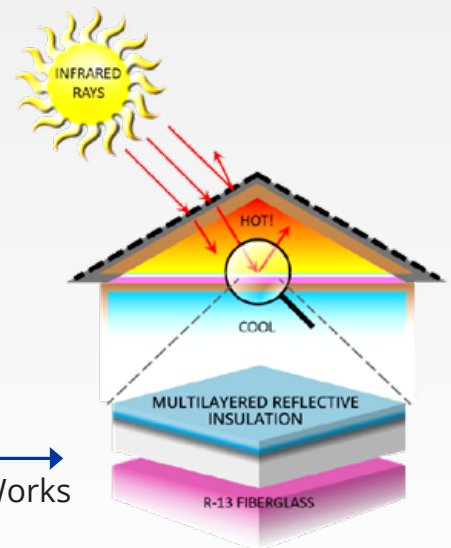
- High Quality Aluminum Layer
- Reflects up to 98% of IR (Infrared Rays)



Closer View of the Reflective Insulation



How Reflective Insulation Works



| <u>Physical Property Tested</u> | <u>ASTM Method</u> | <u>Results</u> |
|---|--------------------|----------------|
| Hemispherical Emittance • Aluminum Side of Product (side 1) • Aluminum Side of Product (side 2) | ASTM C1371 | 0.057 0.065 |
| Water Vapor Transmission (perm) | ASTM E96 | 3.72 |
| Temperature and Humidity Resistance | ASTM C1258 | PASS |
| Water Vapor Transmission (perm) (after C1258) | ASTM E96 | 3.98 |
| Adhesive Performance Bleeding and De-lamination | ASTM C1224 | PASS |
| Adhesive Performance Pliability | ASTM C1224 | PASS |
| Fungi Resistance • Aluminum Side of Product (side 1) • Aluminum Side of Product (side 1) | ASTM C1338 | PASS PASS |
| Surface Burning Characteristics • Flame Spread Index • Smoke Developed Index | ASTM E84 | 0 10 |

R-Value is up to 17.9 Depending on Installation Conditions

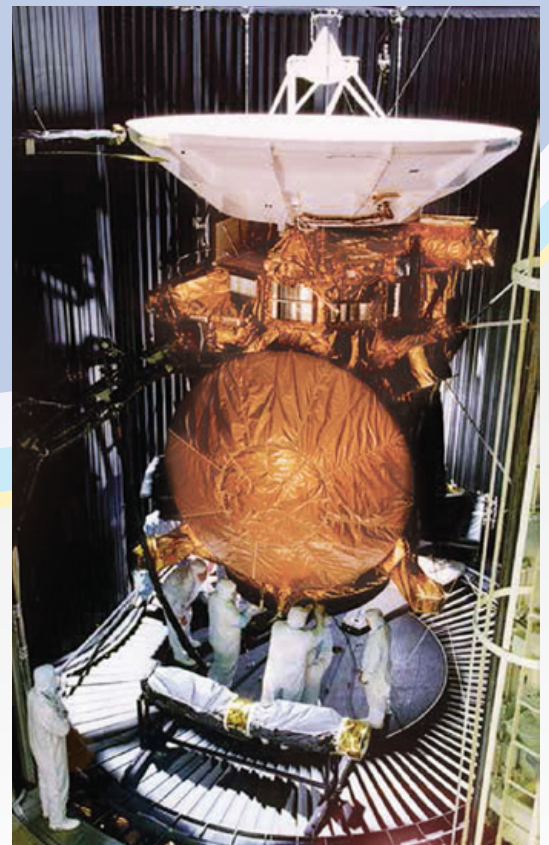
- Installation Method
- Effectiveness of Ventilation System in the Area.
- Flood / Ceiling and Roof Seal and Air Draft between Joints.



Project

H I S T O R Y

Solaro insulation is an improved highly reflective, multi-layer, insulation sheet. Developed at New Mexico Tech University and designed as roll-able attic sheets. The design uses copper based thin films for low emissions of mid-range infrared radiant form of heat, avoids misuses of plastics and instead specially tailors properties - infrared/ opaque where desirable instead of undesirable, and includes novel/unique possibilities such as the use of phase change materials (PCMs). The unique thermal perforation of the multi layers provides moisture with highest permeability without getting blocked in the future due to humidity or other weather impacts.





Specification Sheet

Model # SS-AL/AL-P49.125

Solaro Multi-Layer Reflective Insulation (MRI) is engineered to increase energy efficiency, provide a clean finished appearance, and simplify installation for all residential, post frame, light-gauge steel, transportation and commercial insulation applications. The core of the product is made of a flexible foam layer designed especially for Solaro that provides excellent reflectiveness and insulation characteristics. The core is 3/16" thick, providing additional insulation value and durability. In addition, the multiple facing combinations are thermally bonded in a unique process that provides a long term, quality finish to every insulation roll. Solaro insulation is thermally perforated, this system provides an easy permeability to moisture and allowing it to travel outside the structure.



Features & Benefits

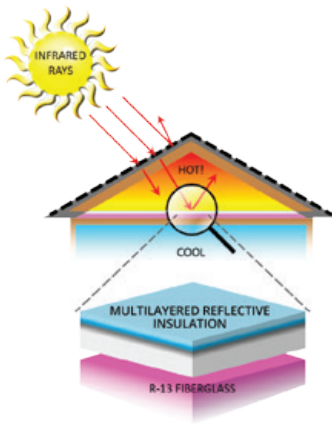
- Reflects up to 98% of IR (Infrared Rays)
- Nontoxic Lightweight Rolls
- Durable Construction and Long-Lasting Toughness
- Permeability Functions
- Multiple Facing Combinations
- Easy Installation with Utility Knife and Tape
- Insulation Improves Energy Savings by Helping Other
- Ventilation Systems Effectiveness

- Increase System Thermal Performance
- Use in retrofit or new construction
- Can be used for food storage
- Can be placed in tents for camping
- Cooler/Bags
- Body Thermal Wrap with Velcro Strips
- Car Thermal Protector Wrap

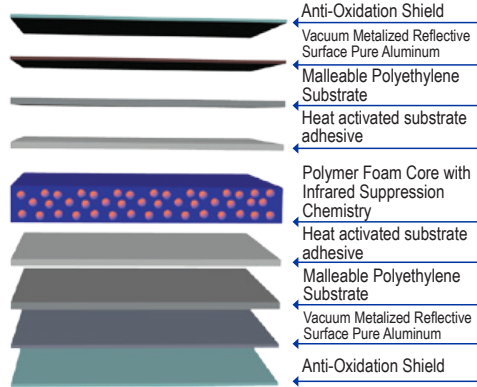
204 sq.ft. per roll

Specifications

How it Works

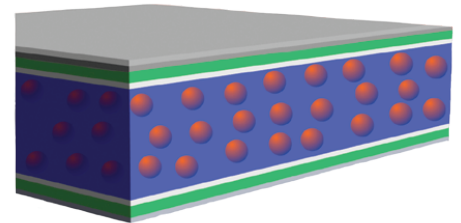


Layer Breakdown



Closer View of the Reflective Insulation

High Quality Aluminum Layer Reflects up to 98% of IR (Infrared Rays)



Pictures of Product



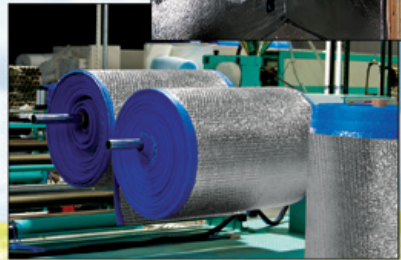
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available styles
SOLARO SHIELD

NanoHeat
Technology



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The Benefits of the Solaro Shield™

Multi-Layer Reflective Insulation



The Solaro Shield™ multi-layered reflective insulation product should be able to qualify for a tax credit starting in 2023, we are waiting for additional details of the program. The new program is called: Inflation Reduction Act of 2022



Solaro Shield™ multi-layer reflective insulation offers a 10 Year Warranty that is the strongest in the industry. Product must be installed according to manufacturer recommendations. See product warranty for additional details.



The Solaro Shield™ multi-layer reflective insulation will keep the heat out and the cool in.



Built to be dependable. The Solaro Shield™ is designed to provide a lifetime of energy saving service.



Shields out heat during the hot summer months. And is ventilated to remove moisture that can cause mold and mildew in the winter.

AMERICAN MADE

PRODUCTS DESIGNED AND MANUFACTURED IN AMERICA BY AMERICANS



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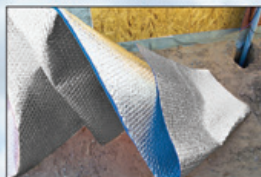
Solaro Shield™
Multi-Layer Reflective Insulation



Solaro products can be used for new construction as well as retrofit in a variety of applications, such as residential, commercial, horse, dairy or livestock building. As well as for finished walls, building insulation, condensation control, and as a thermal break and vapor barrier.

Features & Benefits SOLARO SHIELD

- Reflects up to 98% of IR (Infrared Rays)
- Nontoxic Lightweight Rolls
- Durable Construction and Long-Lasting Toughness
- Permeability Functions
- Multiple Facing Combinations
- Easy Installation with Utility Knife and Tape
- Insulation Improves Energy Savings by Improving Ventilation Systems Effectiveness
- Increase System Thermal Performance
- Use in Retrofit or New Construction
- Can be Used for Food Storage - Cold or Hot
- Can be Placed in Tents for Camping
- Cooler/Bags
- Body Thermal Wrap with Velcro Strips
- Car Thermal Protector Wrap



Multi-Layer Reflective INSULATION

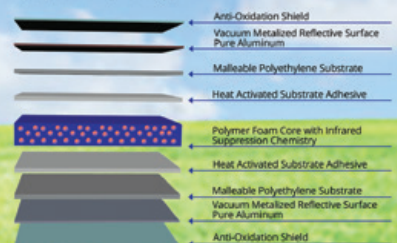
Solaro Multi-Layer Reflective Insulation (MRI) is engineered to increase energy efficiency, provide a clean finished appearance, and simplify installation for all residential, post frame, light-gauge steel, transportation and commercial insulation applications.

The core of the product is made of a proprietary flexible foam layer designed especially by Solaro that provides excellent reflectiveness and insulation characteristics. The core is 3/8" thick, providing additional insulation value and durability. In addition, the multiple facing combinations are thermally bonded in a unique process that provides a long term, quality finish to every insulation roll.

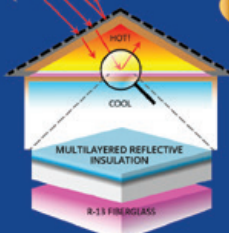
Solaro insulation can be thermally perforated, this system provides an easy permeability to moisture and allowing it to travel outside the structure, in the event permeability is not needed.

Product Specifications

- High Quality Aluminum Layer
- Reflects up to 98% of IR (Infrared Rays)



For more information, please call us toll free at **1-888-355-5786**

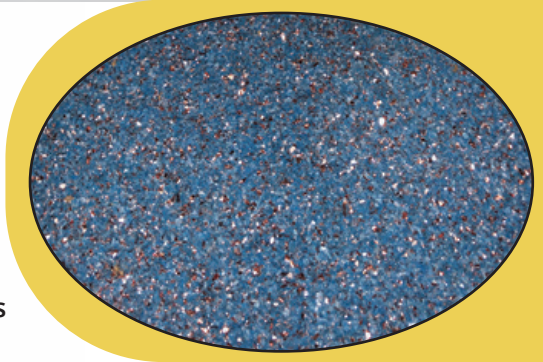


NanoHeat
Technology

Solaro Shield
Multi-Layer Reflective Insulation

Solaro insulation is an improved highly reflective, multi-layer, insulation sheet. Developed at New Mexico Tech University and designed as roll-able attic sheets. The design uses aluminum based thin films for low emissions of mid-range infrared radiant form of heat, avoids misuses of plastics and instead specially tailors properties - infrared/opaque where desirable instead of undesirable, and includes novel/unique possibilities such as the use of phase change materials (PCMs). The unique thermal perforation of the multi-layers provides moisture with highest permeability without getting blocked in the future due to humidity or other weather impacts.

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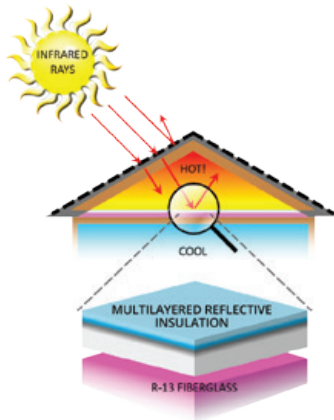


Features & Benefits

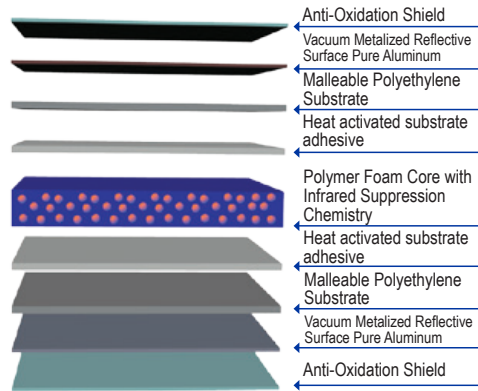
- Reflects up to 98% of IR (Infrared Rays)
- Nontoxic Shredded Insulation
- Durable Construction and Long-Lasting Toughness
- Permeability Functions
- Easy Installation with a Leaf Blower
- Insulation Improves Energy Savings by Helping Other Ventilation Systems Effectiveness
- Increase System Thermal Performance
- Use in Retrofit or New Construction
- Easy to Move Around Existing Duct Work and Other Structural Elements
- Recycled Product from Trimming
- Colors May Vary
- Radiant Barrier Technology

Specifications

How it Works

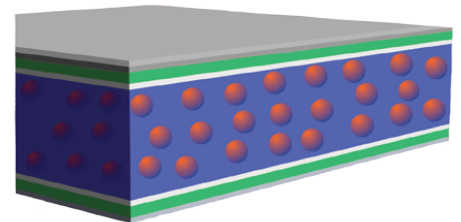


Layer Breakdown

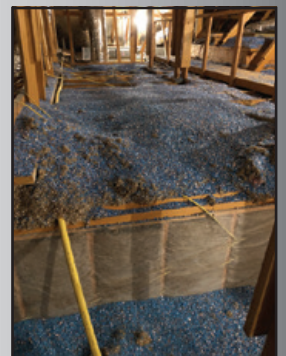
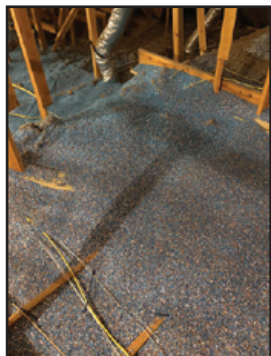


Closer View of the Reflective Insulation

High Quality Aluminum Layer
Reflects up to 98% of IR (Infrared Rays)



Pictures of Product



available styles
SOLARO SHIELD

NanoHeat
technology



1-888-355-5786

The Benefits of the Solaro Shield™

Insulation Enhancement Product



The Solaro Shield™ Insulation Enhancement product should be able to qualify for a tax credit starting in 2023, we are waiting for additional details of the program. The new program is called: Inflation Reduction Act of 2022



Solaro Shield™ Insulation Enhancement product offers a 10 Year Warranty that is the strongest in the industry. Product must be installed according to manufacturer recommendations. See product warranty for additional details.



The Solaro Shield™ Insulation Enhancement product will keep the heat out and the cool in.



Built to be dependable. The Solaro Shield™ is designed to provide a lifetime of energy saving service.



Shields out heat during the hot summer months. And is ventilated to remove moisture that can cause mold and mildew in the winter.

AMERICAN MADE

PRODUCTS DESIGNED AND MANUFACTURED IN AMERICA BY AMERICANS



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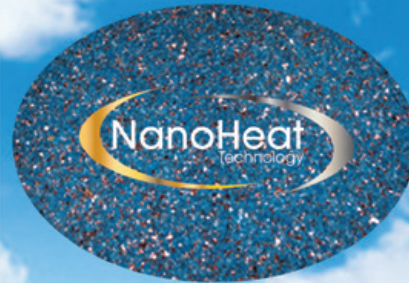
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Solaro Shield™
Insulation Enhancement Product

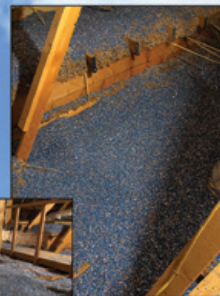
Blown Insulation



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Features & Benefits SOLARO SHIELD

- Reflects up to 98% of IR (Infrared Rays)
- Nontoxic Shredded Insulation
- Durable Construction and Long-Lasting Toughness
- Permeability Functions
- Easy Installation with a Leaf Blower
- Insulation Improves Energy Savings by Improving Ventilation Systems Effectiveness
- Increase System Thermal Performance
- Use in Retrofit or New Construction
- Easy to Move Around Existing Duct Work and Other Structural Elements
- Recycled Product from Trimming. Colors May Vary
- Radiant Barrier Technology



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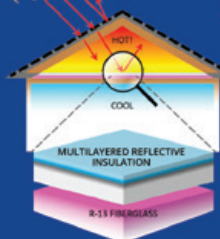
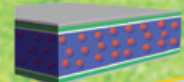
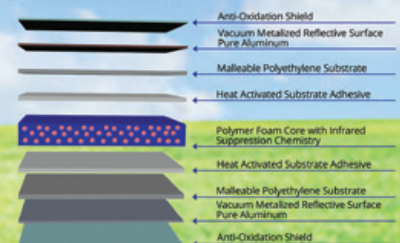
Multi-Layer Reflective INSULATION

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Product Specifications

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- Reflects up to 98% of IR (Infrared Rays)



NanoHeat
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SolaroTM
ENERGY



Solaro ShieldTM
Multi-Layer Reflective Insulation



Helping the Earth Stay Green

At Solaro Energy, we are committed to helping the planet stay green. We are focused on preserving the environment with green products and promoting off-grid independence. We have over 15 years experience in harnessing solar power, and over 25 years experience in manufacturing energy-efficient products.

It's not different, it's better by design.

Conserve Energy • Save Money • Protect the Environment

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