



PRODEX MAKES THE DIFFERENCE in reflective insulation for construction







www.prodexcr.com

¿WHAT IS **PRODEX?**



PRODEX is reflective thermal insulation made of closed-cell, polyethylene foam core and low-E reflective facings developed under the highest quality standards.

Our Insulation products are designed to save energy and reduce radiant heat transfer from roofs, walls, and floors inside buildings at any season of the year.

The quiality of our Insulation products and the service of our advisors, guarantee a good termal perfomace of your Project. The thermal resistance value of Prodex insulation products, backed by international certifications, ensures confort and energy efficiency in their design.

Our Insulation products are designed to **EXCEED** the expected service life of any construction system.

TECHNICAL FEATURES

- 100% closed-cell polyethylene structure.
- Waterproof.
- Resistant to fungal formation.
- Vapor barrier.
- Density from 20 30 kg/m3.
- Emittance 0.03.
- Foam **LAMBDA value of 0.032w/mk.

**LAMBDA:

Coefficient of thermal conductivity that shows the quantity of heat flow transferred through the unit area of a sample.





BENEFITS

- Saves energy by reducing the need to use air conditioning.
- Protects your building from heat in hot weather.
- Keeps interior temperature agreeable in cold places.
- Prevents fungal and bacteria formation.
- Hypoallergenic.
- Waterproof, hygienic, and resistant to agrochemicals, acids, bases, oils, coatings, and detergents.
- Lightweight and easy to handle and install.
- Free of toxic gases.



You can obtain more information by scanning the following QR code with your smartphone: *Prodex Aislantes – Empaque | Video Educativo Aislantes Térmicos Español.*

NEW PRODUCT LINE INDUSTRIAL THERMAL INSULATION

Prodex ESD

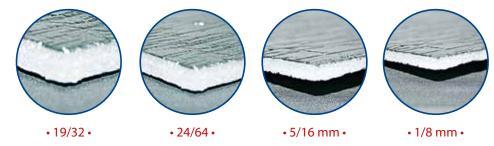


DESCRIPTION

Two layers of low-E reflective foil film with a polyethylene foam inner core.

ESD is the insulation product with a higher degree of technical development in our portfolio of technical solutions, which complies with:

- International Construction Code: ICC-ES.
- Human Safety Code: NFPA 101.
- Laboratory Fire Tests: NFPA 286 Y ASTM E84-12B.
- Requirements of Standard INTE C289.
- **RIMA** (Reflective Insulation Manufacturers Association) verified products.





ROOFS

Industrial

ESD INSULATION	Thickness in (mm)	Width ft (m)	Length ft (m)	Area per roll ft (m2)	Weight per area lbf/ ft2 (kg/m2)	Effective width ft (m)
ESD15	19/32 (15)	4 (1.22m)	65 (20m)	262 (24.4)	0.086 (0.42)	4 (1,22)
ESD10	24/64 (10)	4 (1.22m)	65 (20m)	262 (24.4)	0.06 (0.295)	4 (1,22)
ESD8	5/16 (8)	4 (1.22m)	65 (20m)	262 (24.4)	0.051 (0.251)	4 (1,22)
ESD5	13/64 (5)	4 (1.22m)	65 (20m)	262 (24.4)	0.038 (0.186)	3.84 (1,17)
ESD 3	1/8 (3)	4 (1.22m)	65 (20m)	262 (24.4)	0.029 (0.142)	3.84 (1,17)

Ask fou our **R17** installation system for strutures with separations of 5 ft between purlins of 4 in.

Prodex ESW



DESCRIPTION

Low-E reflective layer with polyethylene foam core + UV protecting White polyethylene layer

- **ESW** was manufactured with the purpose of meeting the most demanding safety standards required by the code of **HUMAN SAFETY NFPA 101.**
- Our insulation solutions for finishes complies with NFPA 286 and ASTM E84-12B criteria.
- Complies with the requirements of standard INTE C289.



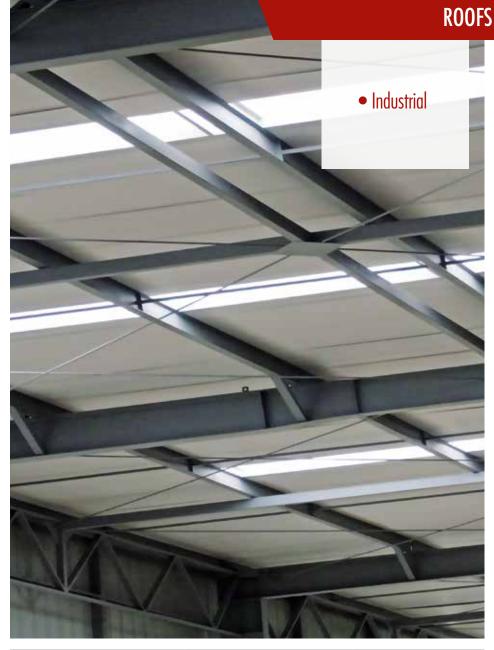
• 15 mm •

• 10 mm •

• 5 mm •

•8 mm •

A wide range of thicknesses that allow to speed up installation, reduce heat transfer from the roof to the structure, and improve overlapping finish.



ESW INSULATION	Thickness in (mm)	Width ft (m)	Length ft (m)	Area per roll ft (m2)	Weight per area lbf/ ft2 (kg/m2)	Effective width ft (m)
ESW 15	19/32 (15)	4 (1.22m)	65 (20m)	262 (24.4)	0.086 (0.42)	4 (1,22)
ESW 10	24/64 (10)	4 (1.22m)	65 (20m)	262 (24.4)	0.06 (0.295)	4 (1,22)
ESW 8	5/16 (8)	4 (1.22m)	65 (20m)	262 (24.4)	0.051 (0.251)	4 (1,22)
ESW 5	13/64 (5)	4 (1.22m)	65 (20m)	262 (24.4)	0.036 (0.176)	3.84 (1,17)
ESW 3	1/8 (3)	4 (1.22m)	65 (20m)	262 (24.4)	0.025 (0.126)	3.84 (1,17)

Prodex Alublock

Compound core for continuous cover systems



DESCRIPTION

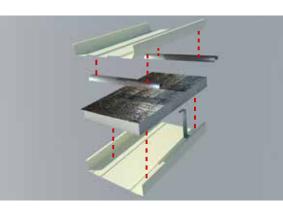
It is an insulated continuous roof system (S.S.R). Alublock provides an innovative core which combines the properties of mass insulation with those of reflective insulation by means of a low-E surface and high technology.

BENEFITS

- Reduces in up to 50% of purlins required when compared to a traditional metal building roof.
- Differences in surface temperatures of up to 30 °C between upper and lower covers under lab conditions, more efficient than other panel systems.
- Saves up to 50% energy in air conditioning systems due to Alublock's combination of insulation materials.

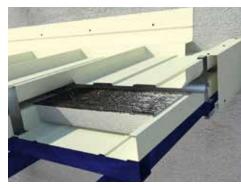
HOW DOES IT WORK?

Thanks to the incorporation of a spacer and Alublock's new patented core, it is possible to create airspaces that reduce conductivity and radiation inside SSR panels or corrugated continuous metal sheets.



The only patented and internationally certified insulated continuous roof system in Costa Rica. Prodex manufactures and markets the core.







Product Code	Thickness in (mm)	Width in (cm)	R-Value ft2.h.°F/Btu (m2.K/W)
A3550	1 3/8 (35)	17 3/32 (45)	11 (1.97)
A4845	1 57/64 (48)	17 3/32 (45)	14 (2.46)

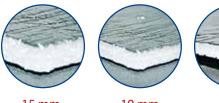
INSULATION SOLUTIONS **FOR METALS**



Prodex AD Aluminum + Aluminum

DESCRIPTION

Closed-cell polyethylene foam laminated with pure aluminum on both faces. Available in thickness of 15, 10, 8, 5 and 3 mm.







• 15 mm •



• 5 mm •

• 3 mm •

BENEFITS

- ➡ Increases energy efficiency in environments controlled by the use of air conditioning and heat.
- Side seals in thickness of 3 y 5 mm to ensure that foam will not be left exposed during the installation process.

AD15, AD10, AD8

→ With a 2" flange on the edge of the insulation roll to facilitate and improve piece overlapping.





AD Insulation	Thickness in (mm)	Width ft (m)	Length ft (m)	Area per roll ft2 (m2)	Weight per area lbf/ft2 (kg/m2)	Effective width ft (m)
AD 15	19/32 (15)	4 (1.22)	65 (20)	262 (24.4)	0.11 (0.56)	4 (1,22)
AD 10	24/64 (10)	4 (1.22)	65 (20)	262 (24.4)	0.085 (0.414)	4 (1,22)
AD 8	5/16 (8)	4 (1.22)	65 (20)	262 (24.4)	0.07 (0.35)	4 (1,22)
AD 5	13/64 (5)	4 (1.22)	65 (20)	262 (24.4)	0.051(0.25)	3.84 (1,17)
AD 3	1/8 (3)	4 (1.22)	32.8 (10)	131.32 (12.2)	0.041 (0.204)	3.84 (1,17)

Prodex AP Aluminum + Polyethylene

DESCRIPTION

Closed-cell polyethylene foam laminated with pure aluminum on one side and a white polyethylene film on the other side. It is available in thickness of 15, 10, 8, 5 and 3 mm.









• 15 mm •

• 10 mm • • 8 mm •

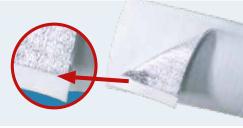
•5 mm • • 3 mm •

BENEFITS

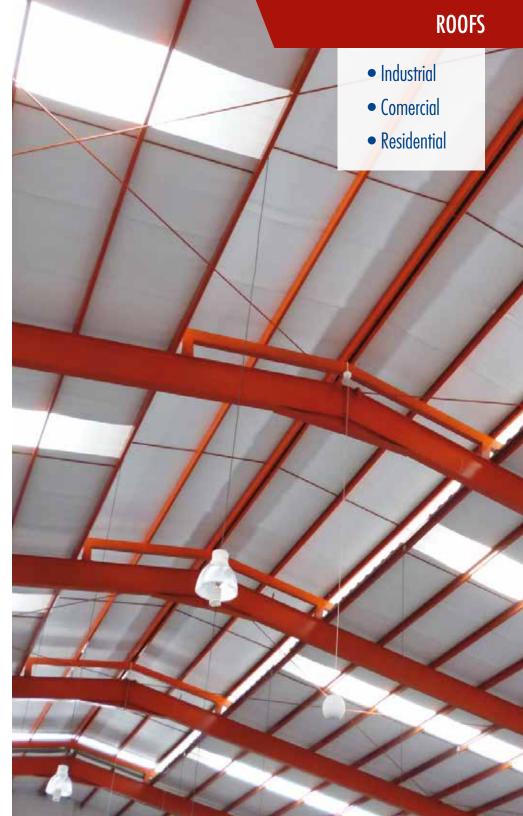
- Excellent finish for facilities without ceiling or with suspended ceiling.
- Excellent resistance to tear and high temperatures.

AP15, AP10, AP8

With a 2" flange on the edge of the insulation roll to facilitate and improve piece overlapping.



AD Insulation	Thickness in (mm)	Width ft (m)	Length ft (m)	Area per roll ft2 (m2)	Weight per area lbf/ft2 (kg/m2)	Effective width ft (m)
AP 15	19/32 (15)	4 (1.22)	65 (20)	262 (24.4)	0.086 (0.42)	4 (1,22)
AP 10	24/64 (10)	4 (1.22)	65 (20)	262 (24.4)	0.06 (0.295)	4 (1,22)
AP 8	5/16 (8)	4 (1.22)	65 (20)	262 (24.4)	0. 049 (0.24)	4 (1,22)
AP 5	13/64 (5)	4 (1.22)	65 (20)	262 (24.4)	0.034 (0.168)	3.84 (1,17)
AP 3	1/8 (3)	4 (1.22)	32.8 (10)	131.32 (12.2)	0.028 (0.140)	3.84 (1,17)

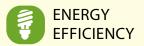


Prodex Rustic

Aluminum + Polyethylene + UV ink

Thermal reflective insulation with a wood-like finish, made from closed-cell polyethylene foam, 10 m long, 1.22 m wide, and a single thickness of 6 mm, laminated with pure aluminum foil on one side and a polyethylene film printed with UV ink on the other side, which insulates and adds to the aesthetics of your buildings.

BENEFITS





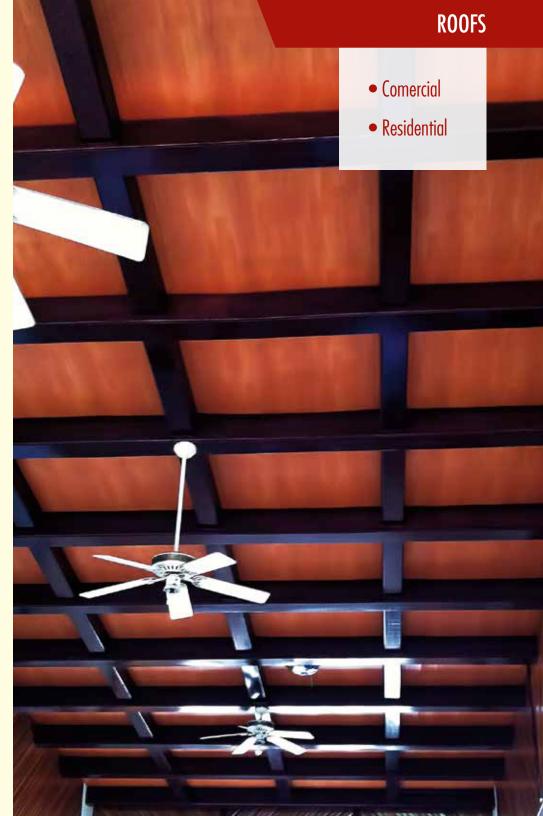


FEATURES

- Excellent finish.
- CFC free.
- Hypoallergenic.
- Eliminates radiant heat.
- Repels heat in hot weather.
- Retains heat in cold weather.
- Lightweight and easy to instal.

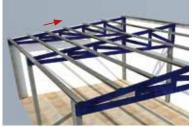




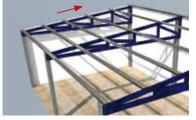


How to choose the roof thermal insulation that best suits your needs?

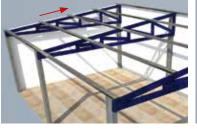
DEFINE THE DISTANCE BETWEEN PURLINS THAT BEST SUITS YOUR CONSTRUCTION



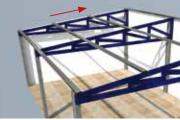
3 mm. Purlins 0 to 1.20 m apart.



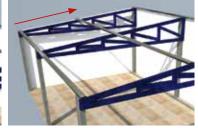
5 mm. Purlins 1.20 to 2.20 m apart.



8 mm. Purlins 2.20 to 3 m apart.



10 mm. Purlins 2.20 to 3.50 m apart.



15 mm. Purlins 3 to 4 m apart.

Distance between Purlins.

CHOOSE THE INSULATION PRODUCT THAT OFFERS YOU MORE BENEFITS





INSTALLATION WITH CONTACT ADHESIVE

(YELLOW ADHESIVE)

The **3mm and 5mm thick AP and AD** products may be bonded transversely through the application of contact adhesive, to obtain total protection against radiant heat, ensuring that roof radiated heat does not transfer to the building.



INSTALLATION WITH HEAT SEALING

Insulation **15**, **10 and 8mm thick** are bonded transversely through a process of foam melting (heat sealing) using a heat gun. Insulation material rolls are manufactured with a flange or tongue and groove 5mm thick and 5cm wide, which allows insulating material to align evenly when installing it throughout the roof. This creates an excellent finish and ensures 100% impervious sealing.



INSTALLATION WITH FAST ACTION

You may request your 3**mm and 5mm thick** products with Fast Action for a quick and easy installation, reducing labor, material, and tool costs.

ADF: Aluminum + Aluminum + Fast Action APF: Aluminum + Polyethylene + Fast Action



INSTALLATION INSTRUCTIONS



Spreading out roll Spread Prodex product roll towards the highest part of the roof.

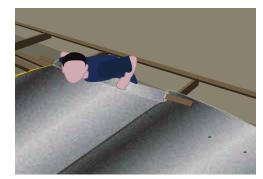


Stretching

Once the roll material is aligned, it should be stretched to allow optimal overlapping with the next Prodex insulation sheet.



Attachment of insulating material to roof ridge Once the material is on the highest part of the roof, it must be affixed to the structure.



3 Alignment After fixing insulation on the upper part of the roof, it must be aligned until it runs parallel to purlins.



Fixing insulation sheet to structure Insulation sheets should be fixed to roof structure on the first rafter. We recommend using plates at least ½" wide and drill tip screws.



6 Overlapping Sheets should be bonded laterally with an overlapping of 2.5 cm on each side to avoid hot air infiltration.



Roof installation

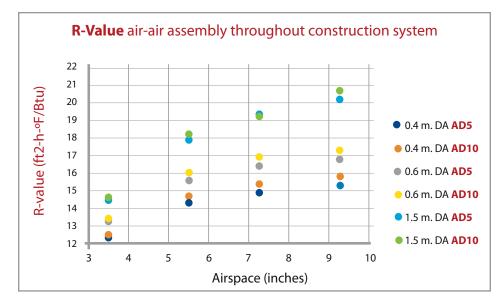
For every two rows of Prodex insulation material, a row of roof panels should be installed so that insulating material is not left exposed to draughts that may detach it. **NOTE**: Prodex thermal insulation may be installed either on top or underside of roof rafters.

You can obtain more information by scanning the following QR code with your smartphone:

Prodex Aislantes – Empaque Video de Instalación AP10.



THERMAL RESISTANCE VALUE - "R-VALUE"



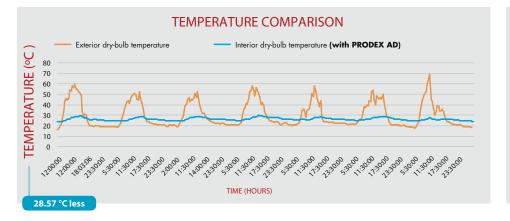
TOTAL TERMAL RESISTANCE VALUES FOR ASSEMBLY WITH LOWER FACER EXPOSED INSIDE DE BUILDING.					
Airspace	Distance between purlins	R-Value Ft2.h.°F/Btu (m2K/W)			
lm (cm)	In (cm)				
In (cm)	In (cm)	AD 5	AP 5		
7 ¼ (18.42)	58 ½ (150)	19.55 (3.44)	15 (2.64)		
9 ¼ (23.5)	22 ½ (60)	22.55 (3.97)	18 (3.17)		
9 ¼ (23.5)	58 ½ (150)	19.85 (3.49)	15.3 (2.69)		
9.25	58.5	23.25 (4.09)	18.7 (3.29)		

R-value= Thermal resistance. It represents the capacity of insulation material to resist heat flow. **DA**= Distance between roof purlins.

Source: Calculations for assemblies with reflective insulation were computed as described in:
 Desjarlais, A.O. and D. W. Yarbrough, "Prediction of the Thermal Performance of Single and Multi-Airspace Reflective Insulation Materials", ASTM STP 1116 (1991).

• Glicksman, Leon R., "Two-Dimensional Heat Transfer Effects on Vacuum and Reflective Insulation", J. of Thermal Insulation 14 281-294 (1991).

AP THERMAL PERFORMANCE RESULT



COUNTRY: Honduras.

PLACE: Drug storage warehouse.

ISSUE: Drugs exposed to potential damage due to high temperatures.

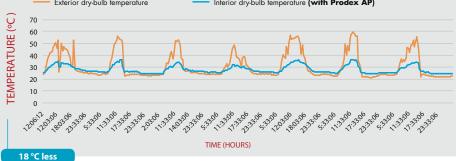
EXTERIOR TEMPERATURE: 57.43 °C.

SOLUTION: Installation of PRODEX AD10 underside of existing metal cover.

AD THERMAL PERFORMANCE RESULT

RESULTS: Average temperature of 28.86 °C during the day.

Exterior dry-bulb temperature Interior dry-bulb temperature (with Prodex AP)



COUNTRY: Nicaragua.

PLACE: Social assistance housing project.

ISSUE: Project located in an area with high solar radiation.

EXTERIOR TEMPERATURE: 46 °C.

SOLUTION: Installation of PRODEX AP3 underside of purlins holding metal panels.

RESULTS: Average temperature of 28 °C during the day.

INSULATION SOLUTIONS FOR WALLS



Prodex Building Wrap

Dry Walls

DESCRIPTION

A radiant air barrier to protect the structure of buildings from climate elements to which lightweight systems are commonly subject.

COMPOSITION

It consists of a 1.5 mm, low density polyethylene core: micro-perforated foam laminated with low-E aluminized PET. It features our system of self-adhesive tape Fast Action to ensure that overlapping areas between insulation sheets are fully sealed.

Step by step installation for lightweight construction systems



Verify that product is in optimal conditions. The roll must not have stains, tears or accumulation of water.

The reflective face should be placed to the interior side of the wall. This ensures that the heat irradiated by the external cover will not transfer to the interior of the building.



Measure the length of the wall section where you plan to place the first sheet of Prodex insulation. It is important to note that insulation sheets must be placed in ascending order and overlapped, that is, the first sheet must be placed in the lower part of the wall.

We recommend cutting first the piece of insulation material needed for the section to be covered to make work easier.



To secure Prodex Building Wrap, Tek self-drilling screws are required. These screws should be placed 60 cm apart from each other. If there are door openings, make sure to place Building Wrap membrane along the edge of such openings. This fixation will maintain Prodex Building Wrap insulation in place until frames are placed.

OPERATION

Prodex Building Wrap prevents vapor from passing through walls avoiding its concentration. By avoiding vapor accumulation in wall cavities, the structure is protected from damage.



You can obtain more information by scanning the following QR code with your smartphone:

Prodex Aislantes Empaque Video de Instalación Building Wrap Prodex.



After securing the first section of insulation, proceed to install the second sheet in ascending order, overlapping each run by 2.5 cm.





Remove the yellow film of the adhesive tape included to seal overlapping seams. This will reduce possible rain, air or dust infiltrations.





Cut excess insulation material in door and window openings.

After fully covering the wall frame with Prodex Building Wrap, place the external wall material per manufacturer's instructions.

INSULATION SOLUTIONS FOR FLOORS



Prodex Underfloor

Laminate Floors

DESCRIPTION

100% closed-cell polyethylene with one side laminated with polyethylene and a single thickness of 2 mm.

BENEFITS

- 100% waterproof avoiding moisture to pass to the side where laminate floor seats.
- It works as a membrane that corrects floor slab's irregularities, providing laminate floor a continuous support.

USE RECOMMENDATIONS

Used for post-tensioned as well as prestressed slab and in new buildings as well as for remodeling.

It is placed on existing slab system while leaving an excess flange towards the wall where baseboard is to be placed. After that, laminate floor should be placed per manufacturer's recommendations.





- Wood or laminate floor
- 2 Prodex Underfloor
- 3 Prestressed floor slab

Prodex Undercarpet

Carpets

DESCRIPTION

100% closed-cell polyethylene with a single 3mm thickness.

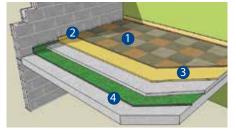
BENEFITS

- Being a 100% impervious product, it avoids the penetration of vapor, extending the useful life of carpets and preventing fungal and bacterial accumulation or growth.
- It works as a membrane that corrects floor slab's irregularities, providing carpet a continuous support.

USE RECOMMENDATIONS

Used for post-tensioned as well as prestressed slab and in new buildings as well as for remodeling. It is placed on existing slab system while leaving an excess flange towards the wall where baseboard is to be placed. After that, carpet should be placed per manufacturer's recommendations.





Carpet
 Excess foam to place baseboard
 Prodex Undercarpet
 Post-tensioned floor slab

Prodex Acoustics

Post-tensioned Slab

DESCRIPTION

Fully closed cell, polyethylene foam core insulation laminated with aluminum on both facings and a single thickness of 5mm.

BENEFITS

Impact sound insulation with a value of 19 dBA (in average).

USE RECOMMENDATIONS

It is used in new buildings with post-tensioned floors. Prodex Acoustics for impact sound insulation is installed over the slab leaving an excess flange towards the wall where baseboard is to be placed. Afterwards, a 5 cm thick cement topping enriched with structural fiber should be placed to avoid the use of steel reinforcing.



You can obtain more information by scanning the following QR code with your smartphone:

Prodex Aislantes Empaque Solución de aislamiento acústico en entrepiso liviano.



- **1** Excess foam to place baseboard
- 2 Carpet
- Operation of the second sec
- 4 Concrete topping (reinforced with nylon fiber)
- 5 Prodex Acoustics insulation
- 6 Post-tensioned floor slab



U-Value*= Global heat transfer coefficient, which reduces the risk of condensation in slabs.

Prodex Thermicfloor

Prestressed Slab

DESCRIPTION

Fully closed cell, polyethylene foam core insulation laminated with aluminum on both facings and a single thickness of 5mm.

BENEFITS

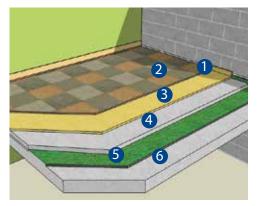
Adds value to floor thermal resistance reducing U-value*.

USE RECOMMENDATIONS

It is used in new buildings that require the use of air conditioning and achievement of maximum energy efficiency.







INSULATION SOLUTIONS FOR AIR CONDITIONING



Prodex Reflective Pipe Insulation

Polyethylene foam noodle laminated with aluminum

DESCRIPTION

Reflective Pipe Insulation is a closed cell polyethylene foam noodle laminated with aluminum foil film to increase its vapor barrier.

PREVENTION OF CONDENSATION AND WEATHER RESISTANCE

Prodex Reflective Pipe Insulation is made of polyethylene foam, a material highly resistant to vapor transfer, laminated with aluminum, which increases the vapor barrier providing the protection required for outdoor conditions. Additionally, it reflects radiant heat and prevents condensation in pipes.

ADVANTAGES

- Low thermal conductivity and reflective surface for greater thermal insulation.
- Outer aluminum layer which allows increasing thermal insulation value, repealing radiant heat.
- Weather-resistant cover, which allows installing insulation in exteriors without any additional treatment or work.

MAIN ADDED VALUE

- Full insulation
- Waterproof
- Low vapor transfer
- UV radiation resistant
- Flexible product
- Easy installation

THERMAL PERFORMANCE OF PRODEX REFLECTIVE PIPE INSULATION

Prodex Reflective Pipe Insulation provides the insulating protection required by air conditioning pipes, allowing greater energy efficiency.

Prodex Reflective Pipe Insulation is designed to be a high-quality product for greater thermal performance.

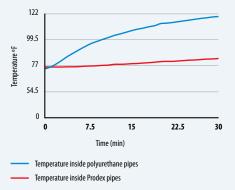
Our pipe insulation reflects radiant heat, increasing total insulation values, which in turns allows air conditioning equipment to operate more efficiently.



VAPOR RAIN UV RADIATION

PRODEX REFLECTIVE PIPE INSULATION WITH ALUMINUM FOIL FILM VS NOODLE

Temperature inside the polyurethane and Prodex pipes subject to direct radiation of 150W



INSULATION SOLUTIONS FOR EXPANSION JOINTS

EXPANSION JOINTS

Prodex Backer Rods

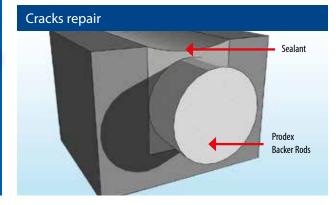
Closed-cell, polyethylene foam cord

DESCRIPTION

Insulation and expansion joints manufactured with closed-cell, low density, polyethylene foam extruded into cylindrical shape. It serves as filler and support for sealing materials used in building joints.

USES









CERTIFICATIONS AND LAB TESTS SUPPORTING OUR QUALITY



American Association for Technical Materials (ASTM)



Prodex insulation products comply with technical requirements established by standard **ASTM C1224**, which indicates the criteria that users need to consider before buying reflective insulation. This standard contains quality criteria as well as laboratory tests to be performed to insulation materials.



Prodex complies with the requirements of the American National Fire Prevention Association (**NFPA**). This allows our customers to trust the safety of our insulation products.



Verified by Rima:

A validation process performed by a third party in charge of verifying that reflective insulation products placed on the market comply with the technical requirements prescribed by the industry.

The good performance and operation of a product not verified by RIMA cannot be guaranteed.

Reflective Insulation Manufacturers Association (RIMA).



NTECO Technical Standards are technical guidelines that inform and educate end users about the best practices and quality criteria required to specify or choose thermal insulation for construction.

- **INTE C172 Building.** Thermal insulation. R-value for building wrap per climate zones. Specifications and verification.
- **INTE C289 Building.** Building applications of reflective thermal insulation. Specifications.



American company which assesses compliance of any building material with criteria established by international construction codes. PRODEX, A MANAGEMENT SYSTEM CERTIFIED COMPANY



Certification number for: Costa Rica: RE-005/03/2004, SGA-003/01/2009 y CRISJO00064-1-10 Panama: RE-005/03/2004



GREENER PRODUCT

Insulation products assessment. Our thermal solutions have been assessed to measure their compliance with LEED criteria for residential as well as commercial constructions.

USGBC

U.S. Green Building Council (USGBC) is a non-profit organization that promotes sustainable design, construction and operation of buildings in US.



LEED

PRODEX insulation solutions contribute points in the following categories of LEED (Leadership in Energy & Environmental Design) assessment:

SUSTAINABLE SITES (SS):

- Credit 7.2: Heat island effect: With Prodex, heat absorption is reduced and solar reflection is increased in the city.
- Energy and Atmosphere (EA):
- Requirement 2 minimum energy consumption.
- Materials and resources (MR):
- Credit 5.1: Regional materials.
- Interior Environmental Quality (IEQ):
- Credit 4.3: Low-emitting materials.
- Credit 6.2: Controllability of materials.
- Credit 7.0: Thermal comfort.



Sustainable building constitutes a way to meet present housing and infrastructure needs without putting at risk future generations' capacity to meet their own needs in the years to come. This is achieved through a construction system that promotes sustainable alterations of the environment and aims to meet the housing and space use needs of modern man while preserving the environment and natural resources. Actions are taken in different stages that impact a construction's useful life such as its design and management, material performance and resources use.

PRODEX PROMOTES ENERGY EFFICIENCY AND THE CREATION OF INSULATION STANDARDS THAT GUARANTEE QUALITY PRODUCTS AND THE ADEQUATE USE OF BUILDING MATERIALS.



BUILD RESPONSIBLY

WITHOUT PRODEX











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