

TOILON THERMOTEC[®]

Thermal CrossLinked Closed Cell FR CLASS O



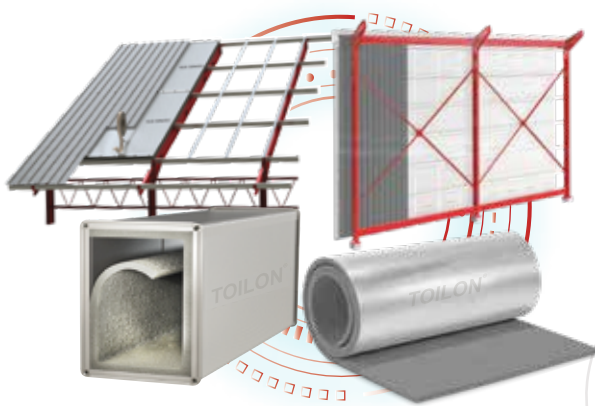
*TERM AND CONDITIONS APPLY



IXPE

PHYSICALLY CROSSLINKED
CLOSED CELL FOAM FR CLASS O

CROSS-LINKED FOAM
HVAC & DUCT INSULATION
ROOF & CLADDING INSULATION



SAVE ENERGY & COOLING COST



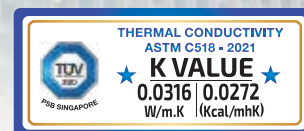
CLOSED CELL FOAM FR CLASS O



thermo.co.id

thermotech indonesia

SAVE ENERGY & COOLING COST
With CrossLinked Foam



Building & Constructions Safety Regulation & Standard International (Certification and Testing Report)

Toilon Thermotech® is crosslinked foam technology manufactured, which is polyolefin material is very suitable for insulation used in HVAC & Duct, Roof, Wall, Cladding, Pipe, Raised Floor & Underlayer which provides excellent performance.

Toilon Thermotech® products are guaranteed up to 18 Years certified warranty so that Toilon Thermotech® products are extremely durable and long lasting. Our commitment to maintaining quality and it is proven by conducting ISO 9001.

Toilon Thermotech® product certified with FR Rating Class O (TUV), and ASTM E84-24 with Flame Spread index = 0 & Smoked Development Index = 50 with Compliance of Certificate from UL94, etc. All Certificate recommended for safety building materials.

Toilon Thermotech® crosslinked foam closed cell technology is a product with high innovation with two type Crosslinked Product :

- IXPE – Physically Crosslinked Foam Closed Cell**, produces with electron beam machine for Crosslinking Polymer Progress.
- XLPE – Chemically CrossLinked Foam Closed Cell**, with chemically mixing machine for crosslinking polymer progress.

Proven Reliability & Experience Since 2001 (special quality material control)

Toilon Thermotech® thermal insulation technology has been experienced in foam insulation field since 2001. Toilon Thermotech® is The FIRST & BIGGEST CrossLinked Technology with experience more than 20 years and leading number 1 in local market Indonesia.

Therefore, we are here in Indonesia to meet all your insulation needs such as : HVAC, roof, walling, pipe, raised floor, underlay and building insulation, etc. Which provides excellent performance and best quality of production.

Technically Superior

Our distinctive CrossLinked technology produces a smaller and more evenly fine cell structure. Thermal conductivity and vapour permeability, which are the key factors in insulation performance, are directly affected by the cell structure.

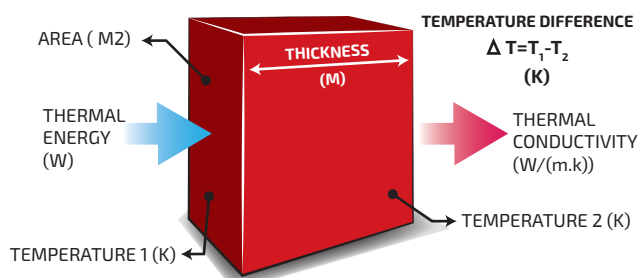
Thermal Conductivity (ASTM C-518)

0.0316 W/m.K

0.0272 (Kcal/mhK)

Mean Temp : 23°C

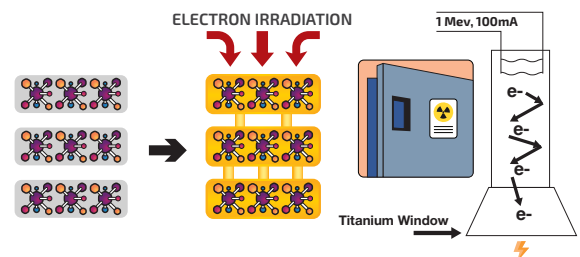
It is the lowest amount of any flexible insulation material.



Physically Crosslinked Technology

IXPE Physically Crosslinked Technology :

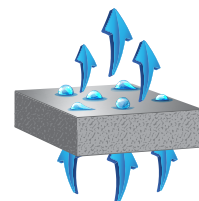
- Small cell size > lowest thermal conductivity than any other flexible insulation
- Extremely high vapour permeability resistance



Irradiation / Electron Beam Machine
(IXPE-Physically CrossLinking polymer Process)

Almost Zero Vapour Permeability

Permeability This property guarantees that the thermal conductivity stays relatively constant for up to 18 years which will give a significant contribution to building sustainability and lowering energy cost.



Third Party Certification & Testing

To maintain the quality of products that are produced in house from our factory, we carry out certification testing periodically through a credible and internationally recognized institution :

- ✔ American Standard Testing and Material (ASTM) - USA
- ✔ British Standards (BS) - United Kingdom
- ✔ Intertek Testing Services - United Kingdom
- ✔ Australian Wool Testing Authority - Australia
- ✔ Underwriters Laboratories - USA (UL 94)
- ✔ Technischer Überwachungs Verein - Germany (TUV - PSB Singapore)
- ✔ Societe Generale de Surveillance - Switzerland (SGS - Korea)
- ✔ Korea Laboratory Accreditation Scheme (KOLAS) - Korea
- ✔ International Laboratory Accreditation Cooperation (ILAC - MRA)
- ✔ Tingkat Komponen Dalam Negeri (TKDN) - Indonesia
- ✔ Kementerian Perindustrian - Indonesia
- ✔ International Organization for Standardization (ISO) - United Kingdom
- ✔ MSA Certification - SNI ISO 9001:2015 - Indonesia
- ✔ MSA Certification - SNI ISO 14001:2015 - Indonesia



International Fire & Smoke Standards for Building Insulation (Duct/Raised Floor/Roof/Cladding)

- ✔ British Standards BS 476 (Parts 6 & 7)
- ✔ American Standards ASTM E84
- ✔ AWTA Product Testing Method : AS/NZS 1530.3-1999
- ✔ Underwriters Laboratories - USA (UL 94)

Quality Materials

To maintain the stability of the quality of our products, we conduct routine Product Testing compiled with *Underwriters Laboratories - USA (UL 94)* for raw material and product line audits every 3 months.



Raw Material & Compounder Mixing Machine



Progress Master Sheet (Extruder Machine)



Irradiation / Electron Beam Machine (IXPE-Physically CrossLinking polymer Process)



Storage



Packing Machine



Finishing / Flaming Lamination



Foam Oven Expanding Machine

Product Application



✓ HVAC & Duct Insulation

Insulation from crosslinked Polyolefin foam. It has low thermal conductivity and a closed cell structure and is reinforced with a layer of lamination on the outer surface.



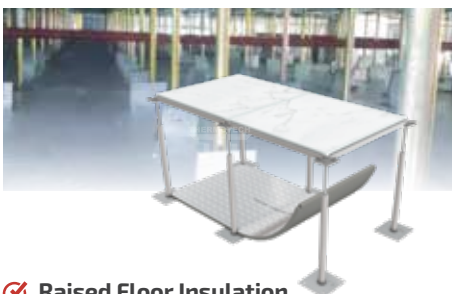
✓ Underlayer Insulation

Placing acoustic or insulation underlay underneath your flooring greatly enhances your living comfort, as it noticeably reduces reflected walking noise.



✓ Roof Insulation

The use of roof insulation Heat Absorbers can reduce energy loss. Maintaining Consistent Stable Room Temperature.



✓ Raised Floor Insulation

Raised Floor is a model and construction method in data center buildings by creating additional floors with a height of several centimeters from the concrete floor or main floor of a building.



✓ Pipe Insulation (ThermoTube)

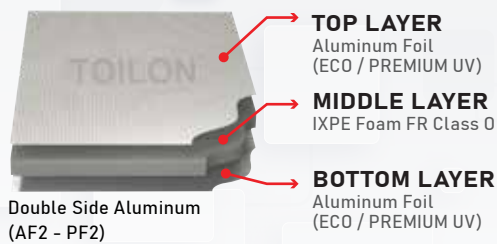
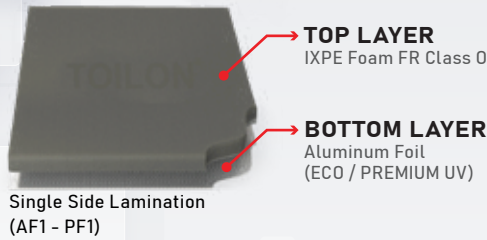
Insulation has excellent durability & flexibility power. It is used in flexible temperature between -80°C~100°C.



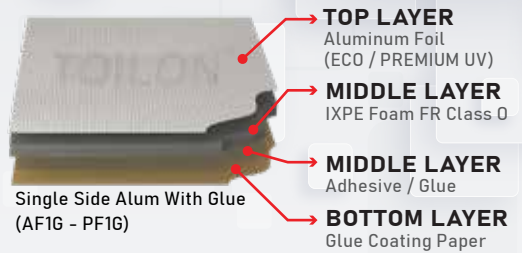
✓ Cladding Insulation

Cladding is the outer layer that protects the core and reflects the light that radiates out back into the core.

ROOF & CLADDING INSULATION

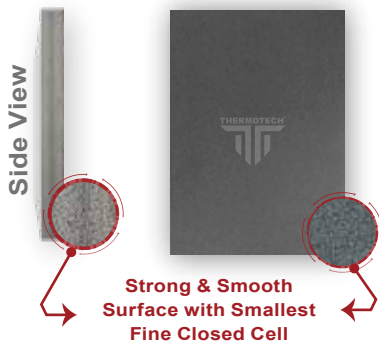


HVAC & DUCT INSULATION



Type of CrossLinked IXPE Foam

- ✓ Physically / Irradiation CrossLinked Tecnology
- ✓ PREMIUM & Stability Thermal Foam Insulation
- ✓ The highest Fire Rating Class 0
- ✓ Strong & Smooth Surface with Smallest Fine Closed Cell
- ✓ Extremely High Vapour Permeability Resistance
- ✓ Water Resistance Protect
- ✓ Lifetime More Than 18 Years** (T&C Applied)



A. Premium Protection for Indoor & Outdoor (Premium UV)

- ✓ Total Alum Thickness Material : 70 ~ 80 micron
- ✓ Radiant Reflectivity up to 95.7 %
- ✓ Emissivity : 0.13 (Low Re-radiation)
- ✓ Strong with Anti Tear Aluminum
- ✓ Anti Corrosion & Anti UV Protection Aluminum



B. General Protection for Indoor (Eco)

- ✓ Total Alum Thickness Material : 50 ~ 60 micron
- ✓ Radiant Reflectivity up to 85 %
- ✓ Emissivity : 0.06 (Low Re-radiation)
- ✓ Strong with Anti Tear Aluminum

Product Accessories

• THERMAL FOAM TAPE



Type Product :

- > Foam Only With Glue (F0G)
- > Alum Foil With Glue (AF1G)

Size Availability :

- > 5 mm x 1 inch x 10 mtr
- > 5 mm x 2 inch x 10 mtr

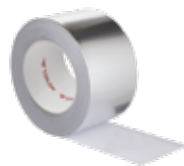
• ALUMINUM TAPE (DUCT TAPE)



Size Availability :

- > 48 mm x 30 mtr (2 Inch)
- > 72 mm x 30 mtr (3 Inch)

• METALIZE TAPE



Size Availability :

- > 48 mm x 30 mtr (2 Inch)

• PLATSTREEP ZINCALUME



Size Availability :

- > 30 mtr x 5 cm (0,3 mm TCT)
- > 30 mtr x 8 cm (0,3 mm TCT)

• GLUE BLACK PREMIUM



Type Product :

- Glue Black Premium 220
- Size Availability : Uk.10kg / Blek

ThermoTech Support Technology is a simple and accurate software tool for calculating insulation thickness using Overall Thermal Transfer Value (OTTV) and Roof Thermal Transfer Value (RTTV) calculations for green building standards.

Thermo calculator provides solutions with accurate calculations, which can provide the following benefits :

✓ Save Energy Costs

- With proper insulation, heat is not easily lost or absorbed, thus reducing electricity or fuel consumption for heating/cooling.
- Reduces over insulation (insulation that is too thick wasted material costs) and under insulation (insulation that is too thin wasted energy).

✓ Reduced Maintenance Costs

- Avoids condensation on surfaces, which can cause corrosion.
- Reduces equipment wear and tear due to temperature fluctuations.
- Reduces the risk of fire or thermal leakage.

✓ Standards Compliance

- Many industry standards (e.g., SNI, ISO, ASHRAE, Green Building) require certain levels of insulation for energy efficiency. The Thermo Calculator helps ensure designs comply with these standards.



ThermoTech Support Technology

www.thermocalculator.co.id



Project Reference





GEDUNG GWW IPB



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



INDOFOOD PONTIANAK



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



WAREHOUSE SPIL CIBITUNG



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



WAREHOUSE BEKA SUBANG



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



JAINDO PDIP PURWAKARTA



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



GEDUNG PERTEMUAN SLEMAN



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



BIZPARK - PIK 2



ROOFING INSULATION



ROOFING INSULATION



ROOFING INSULATION



SHINWON FACTORY



ROOFING INSULATION



ROOFING INSULATION



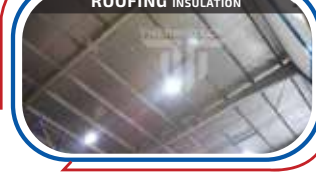
ROOFING INSULATION



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BETA PHARMACON



HVAC & DUCT INSULATION



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DAEWONG SELATOX



HVAC & DUCT INSULATION



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RS EDELWEISS



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DAIKIN FACTORY



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RS TRIA DIPa



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NESTLE



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PABRIK CERES BANDUNG



HVAC & DUCT INSULATION



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KINO SAYUNG DEMAK



HVAC & DUCT INSULATION



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UNILEVER SKIN ZARA



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GOLDEN SENSE INTERNATIONAL RESTAURANT



UNDERLAYER INSULATION



UNDERLAYER INSULATION



UNDERLAYER INSULATION



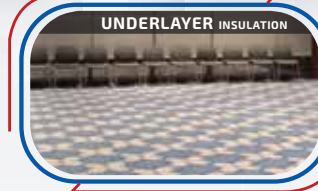
SWISSOTEL IKN



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UNDERLAYER INSULATION



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MESJID SYEIKH ZAYED



UNDERLAYER INSULATION



UNDERLAYER INSULATION



UNDERLAYER INSULATION



HOTEL LAXSTON



UNDERLAYER INSULATION



UNDERLAYER INSULATION



UNDERLAYER INSULATION



HOTEL MERCURE TANGERANG CENTRE



UNDERLAYER INSULATION



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MERCURE HOTEL



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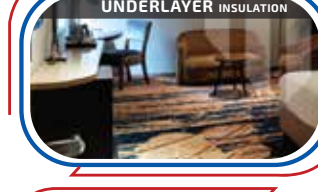
OAKWOOD



UNDERLAYER INSULATION



UNDERLAYER INSULATION



UNDERLAYER INSULATION



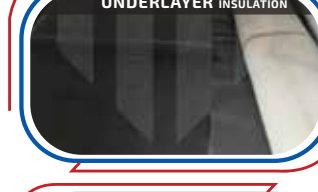
JAKARTA AIRPORT HOTEL



UNDERLAYER INSULATION



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GSG UNIVERSITAS DIPONEGORO



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Technical Specification



Density CrossLinked Foam (BS EN 1602 : 2013)	25 kg/m ³ (Standart Product)
TUV-SUD Singapore	62,75 Kg/m ³ (Density with alum)
	28 - 200 kg/m ³ (Custom Product By Request)
Thermal Conductivity (ASTM C518 : 2021)	0.0316 W/m.K
TUV - SUD Singapore	0.0272 (Kcal /mhK)
	Mean Temp : 23°C
Water Vapour Transmission (ASTM E96 / TUV Singapore)	0.13 g/m ² .h
Resistance to fungi (ASTM G21 / SGS Korea)	Zero Growth (Result Test : 0)
VOC Emission Rate (ASTM D5116)	Low VOC emitting
Korea Conformity Laboratories (KCL)	TVOC : 0.036 mg/m ² .h
TKDN Kementerian Perindustrian Republik Indonesia No.13618/SJ-IND.8/E-TKDN/9/2025	IXPE (Physically CrossLinked Foam FR Class O) 41,42%
Ozone Resistance	Excellent
UV Resistance TUV SUD PSB - SINGAPORE	Excellent
	ASTM E903:2020 (Solar Absorptance, Reflectance, & Transmittance)
	ASTM G173:2023 (Solar Spectral Irradiances)
	ASTM C1371:2015 (Determination Of Emittance Materials)
	ISO 4892-3: 2016 (96 hours UV Lamps Test)
World Green Building Council (GBCI)	As a Member of Green Building Council Indonesia
Operating Temperature Range	-80°C ~ 100°C (no adhesive)

SIZE AVAILABILITY

THICKNESS	LENGTH	WIDTH	SQUARE METER
3/4/5/8/10/12	30 m	1.2 m	36 m ² /roll
15/20/25	12 m	1.2 m	14.4 m ² /roll
30/35/40/45/50	2 m	1.2 m	2.4 m ² /sheet

**Custom Size By Request



ThermoTech Support Technology
to calculate the thickness of required insulation
based on learned project environment
www.thermoccalculator.co.id

FIRE & SMOKE PERFORMANCE

BS 476 part 6 & 7 (Fire Rating Class) CLASS 0
• TUV - PSB - Singapore

ASTM E84 (SGS-CSTC Standards Technical Services Co.,Ltd Anji Branch) • Flame Spread Index = 0 (<25)
• Smoke Developed Index = 50 (<450)
COMPLIES (NFPA 255 / UL 723 / UBC 8-1)

AWTA Product Testing AS/NZS 1530.3-1999
(Fire test on building materials, components and structures)

	Standard Error	Mean
Ignition Time :	Nil	Nil min
Flame propagation time :	Nil	Nil sec
Heat release integral :	Nil	Nil kJ/m2
Smoke release, log d :	0.1273	-2.4507
Optical density,d		0.0043 /metre

UL94 Horizontal Burn Approved (HF-1)

Aluminum Test Performance

A. Premium UV Aluminum

ASTM E903:2020 (Solar Absorptance, Reflectance, & Transmittance)
ASTM G173:2023 (Solar Spectral Irradiances)
ASTM C1371:2015 (Determination Of Emittance Materials)
ISO 4892-3: 2016 (96 hours UV Lamps Test)
TUV SUD PSB - SINGAPORE

Result :

Visible Light : > Total Reflectance, Front = 94.2 %
> Diffuse Reflectance, Front = 87.1 %
> Calculated Specular Reflectance, Front = 7.1 %

Solar : > Total Reflectance, Front = 95.7 %
> Diffuse Reflectance, Front = 89.0 %
> Calculated Specular Reflectance, Front = 6.7 %

Emittance (E) Average : > Front = 0.13
> Back = 0.13

Result :

Visual appearance after 96 hours exposure to Fluorescent UV Light
Exposure Test : > No Cracking, Peeling
> Very Slight Yellowing

B. ECO Aluminum

ASTM E903:2020 (Solar Absorptance, Reflectance, & Transmittance)
ASTM G173:2023 (Solar Spectral Irradiances)
ASTM C1371:2015 (Determination Of Emittance Materials)
TUV SUD PSB - SINGAPORE

Result :

Visible Light : > Total Reflectance, Front = 83.6 %
> Diffuse Reflectance, Front = 77.3 %
> Calculated Specular Reflectance, Front = 6.3 %

Solar : > Total Reflectance, Front = 85.0 %
> Diffuse Reflectance, Front = 79.0 %
> Calculated Specular Reflectance, Front = 6.0 %

Emittance (E) Average : > Front = 0.06
> Back = 0.06

PT. Thermo Tech Solutions
member of TOILON

Head Office

Green Lake City, Rukan Crown Blok H No. 25 - 26
Cipondoh - Tangerang - Indonesia 15147
Tlp. 021 - 5503 222 - 2252 8711 - 2940 5053

Surabaya Office

Ruko Northwest Boulevard NV-8 NO.11-12,
Babat Jerawat , Kec. Pakal Surabaya
Jawa Timur - 60196

Factory - Toilon ThermoTech

Jln. Raya Serang Km. 16,8
Desa Talaga Cikupa,
Tangerang - Indonesia



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