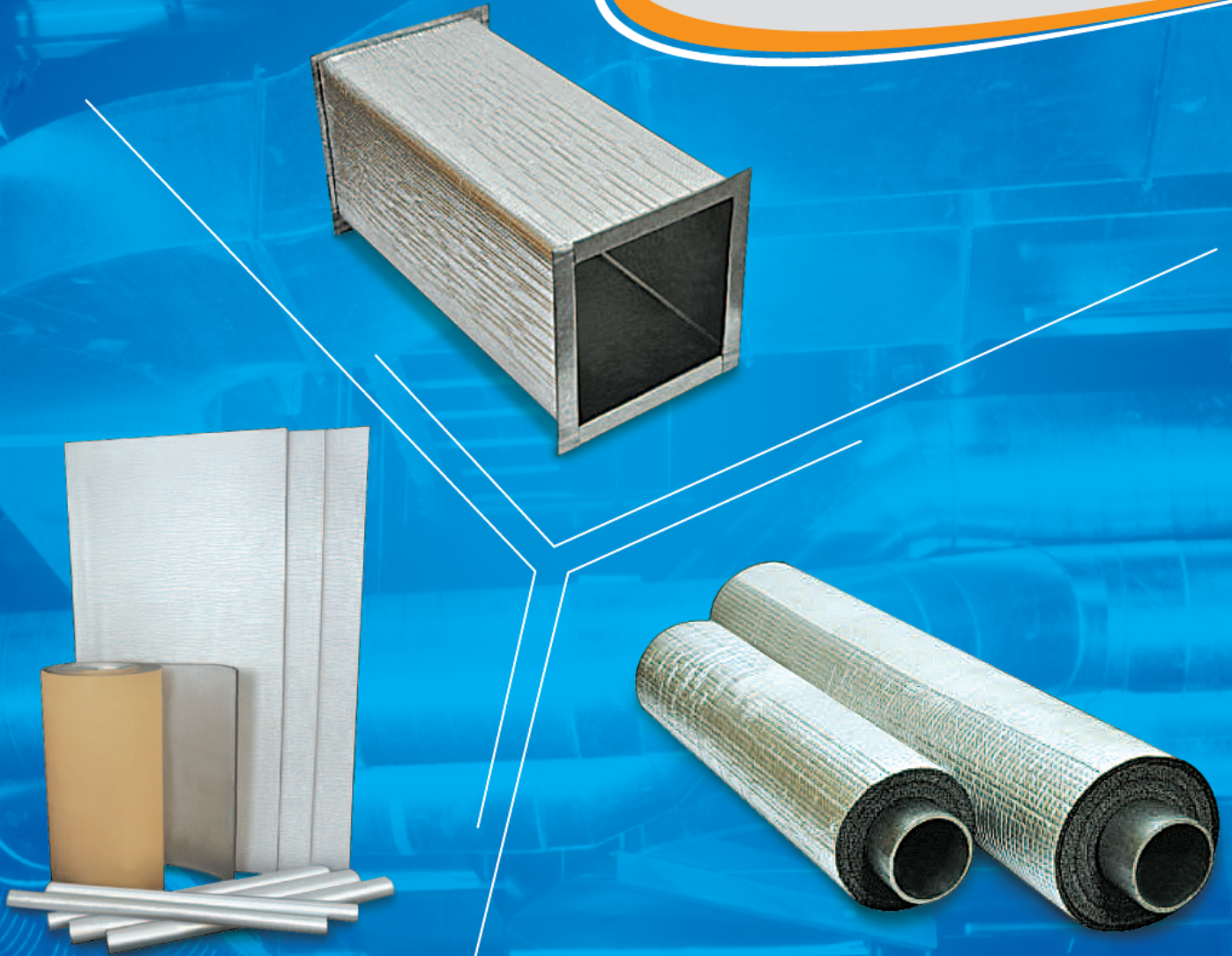


# GFlex® XPE

POLYOLEFIN CROSS LINKED INSULATION



جي مارك الشرق الأوسط ش.م.ح

**GMARK MIDDLE EAST FZC**

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ص.ب. ٤١٧٧٨، الشرق - الامارات العربية المتحدة، تليفون: ٠٦-٥٢٦٣٦٢٧، ٠٦-٥٢٦٠٠٣٥، فاكس: ٠٦-٥٢٦٠٠٣٤



ISO 9001:2008 Certified

## FEATURES

- **GFlex® XPE is a flexible thermal insulation made of closed cell cross linked polyolefin foam reinforced by heat laminated Aluminium foil.**

- **Almost Zero Water Vapour Permeability and Water Absorption.**

Condensation is the major problem caused by an insufficient insulation. GFlex®-XPE having more than 90% closed cell material in addition to the aluminium foil face can be classified as vapour barrier as per ASHRAE and British Standards recommendation even without additional vapour barrier coatings or foil.

- **Passed a Wide Range of Fire and Smoke Tests**

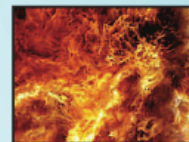
GFlex®-XPE had been tested and passed a variety of international standards for building materials. In cases of fire, people staying at high levels of a structure would not be harmed by the fire but by the smoke density and toxicity. GFlex®-XPE passed the concentration limits of combustion gases as per ISO 5659 - 2IMO resolution MSC 61 (67) 1996 ANNEX 1, PART 2

- **Safe, Fast & Easy Installation**

Being an integrated insulation material with closed cell polyolefin foam and aluminium foil face and further supplied with a specially developed acrylic adhesive, GFlex®-XPE does not require any additional materials like vapour barrier coatings thus cuts the installation time up to a third. GFlex®-XPE is a closed cell material and does not emit any loose fibres that can cause irritations to both installers and occupants.

- **Environmentally friendly**

GFlex®-XPE is CFC and HCFC free and does not contain nor use in its production any of the substances that contribute to Ozone depletion potential nor those listed as Non-Ozone depletion substances with global warming potential.



## TECHNICAL COMPARISON

### AGAINST COMMONLY USED INSULATION MATERIALS GFlex®-XPE FOAM vs FIBERGLASS vs ELASTOMERIC RUBBER

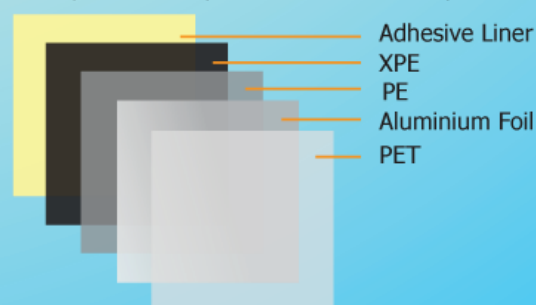
PROPERTY	GFlex®-XPE	FIBERGLASS	ELASTOMERIC RUBBER
Material Construction	Closed Cell cross linked polyolefin foam composite, heat laminated to aluminium foil face.	Resin bonded glass fibers	Extruded PVC-Nitrile rubber
Structure	Fine cells with completely closed cell structure. No loose fibers	Fibrous material, completely open cell, loose fibers	Closed cell material
Installation Requirements	Integrated material. No additional materials required. No special protective coverings required	Requires vapour barrier coatings and adhesives	UV Coatings required for outdoor installations
Thermal Conductivity, k ASTM C518	0.034 W/mK@23°C	0.035-0.037 W/mK@24°C	0.036-0.038 W/mK@24°C
Density, ASTM D1622	30 ±3 kg/m3	24 kg/m3	25-35 kg/m3
Water Vapour Permeability, ASTM E96	0.000 perm-in	75 perm-in (FG only)	0.2 perm-in
Smoke Density And Toxicity ISO 5659-2 with gas analysis to IMO MSC 61(67)	Smoke density: Dm<200 Smoke Toxicity: Satisfies maximum allowable concentrations for the ff combustion gases: CO, HCL, HBr, HF, HCN, Nox, SO	Not available	Halogenated/Chlorinated byproduct are produced upon combustion
Environmental Concerns CFC & HCFC Chlorinated Compounds ODP & GWP	CFC & HCFC Free: Does not contribute to Ozone Depletion potential and global warming potential	CFC & HCFC Free	CFC & HCFC Free: Presence of chlorinated and halogenated compounds

Information given above is good faith and to the best of our knowledge. Data are taken from common publications like brochure/catalogue, etc. However, due to large number of manufactures, some data may slightly vary. It is recommended that the data are verified by the interested parties before any decisions as to their suitability are made.

## PRODUCT STRUCTURE

GFlex®-XPE is a closed cell cross linked polyolefin foam mainly used as thermal insulation of air conditioning air ducts, water pipelines, as well as under slab and tank insulation.

GFlex®-XPE Insulation is reinforced with heat bonded pure aluminium foil and factory applied specially developed adhesive liner enabling fast and simple installation.





## PRODUCT SIZE

### GFlex®-XPE SHEETS

Thickness	Size of Roll/Sheet (length x width)
13mm	20m x 1.2m
20mm	20m x 1.2m
25mm	2.4m x 1.2m
30mm	2.4m x 1.2m

Note: Other size are available on request



## OTHER MATERIALS AVAILABLE

GFlex® SPECIALITY TAPES	Standard Sizes & Packaging		
	Width (mm)	Length (yards)	Rolls/Box
Special Aluminium Tape	48	30	24
	72	30	16
	96	30	12

### GFlex®-XPE TUBES

Thickness: 13mm, 20mm and 30mm  
ID Range: 22mm (1/2") to 165mm (6")

## TESTING STANDARDS

TEST PROCEDURE	TEST NAME	TESTED BY	PLACE OF TEST	TEST RESULTS
BS476 Part 7	Surface spread of flame	BW	UK	Class 1
BS6853:1999	Determination of Weighted Summation of Toxic Fume, R	BW	UK	R=0.77
ISO 5659(2) IMO Resolution MSC61 (67) 1996:Annex 1, Part 2	Smoke & Toxicity Test	BW	UK	Ds<200 (Gas toxicity analysis below)

BW-Bodycote Warrinton (Exova)

GAS	LIMIT (ppm)	Reading (ppm)		
		Condition 1	Condition 2	Condition 3
Carbon Monoxide CO	1450	9	B	23
Hydrochloric Acid HCL	600	ND	ND	ND
Hydrogen Bromide HBr	600	ND	ND	ND
Hydrogen Fluoride HF	600	ND	ND	ND
Hydrogen Cyanide HCN	140	ND	ND	3
Nitrous Fumes NO <sub>x</sub>	350	29	29	ND
Sulphur Dioxide SO <sub>2</sub>	120	ND	ND	ND

Condition 1 : 25kw/m<sup>2</sup> in the presence of a pilot flame  
Condition 2 : 25kw/m<sup>2</sup> in the absence of a pilot flame  
Condition 3 : 50kw/m<sup>2</sup> in the presence of a pilot flame

ND - Not Detected

## INSTALLATION INSTRUCTIONS

### I. Duct Insulation

#### A. Wrap Around Installation (usually used for 15mm thickness and below)

1. Cut GFlex® insulation to the required length. Always allow 10-15mm excess for final adjustment. Lay the duct on the floor. It is advisable to use a soft sheet, board or any other suitable covering to the floor to avoid damage on the insulation.
2. Peel off a small section of the adhesive paper. Start off with around 100mm. Align the insulation edge with duct edge and gently lower the sheet exposing only required adhesive and padding firmly the insulation as it lay on the duct from the fixed edge moving to the other edge ensuring air is expelled.
3. Once one side is fixed, turn the duct to expose bare side. Repeat until completely covered avoiding pulling of the insulation on the edges to ensure the insulation thickness on the corners will be maintained the same.
4. On the final side, ensure the insulation length reaches the same level as the starting edge. Trim off excess length with a sharp knife until it is leveled with adjacent side. Use GFlex® aluminium foil tape to seal the joints (2" on butted joints and 3" on corner joints). \*\*\*The same procedure is to be followed on around duct ensuring the edges are butted firmly and seal with GFlex®-XPE aluminium foil tape.



## B. Cut Section Installation (usually used for 20mm thickness and above)

1. Cut four sections of GFlex®-XPE insulation ensuring edges to be of the same level as adjacent sides.
2. Use GFlex®-XPE aluminium foil tape to seal the joints (2" on butted joints and 3" on corner joints).

## C. Special Shape Installation

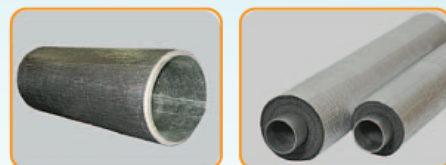
GFlex®-XPE polyolefin foam insulation is very flexible material and easily be shaped around any particular duct part like elbows, reducers and T-sections. Just cut

GFlex®-XPE according to shape and size and remove the adhesive paper and press to the shaped surface. Use GFlex®-XPE aluminium foil tape to seal the joints.



## II. Pipe Insulation

1. GFlex®-XPE pipe insulation for pipe size 1/2" (21mm ID) to 6" (165mm ID) are pre-formed to give a snug fit on pipes and comes with a longitudinal slit for ease of installation. For larger size, follow the same procedures as in round ducts.



2. Open the slit of the insulation and insert the pipe. Apply standard glue or sealant on the edges.

3. After ensuring the glue has been cured properly, cover the joints using GFlex®-XPE aluminium foil tapes.

## TECHNICAL DATA

Technical Specification	Test Standard	GFlex®-XPE
Material Characteristics		Crossed-Linked closed cell polyolefin foam reinforced with heat laminated embossed pure aluminium foil
Sheet / Rolls		Comes with foactory applied adhesive backing
Pipe Sections		Pre-formed to give a snug-fit on pipes and supplied with a longitudinal slit
Structure		Completely closed cell. No loose fibres
Malleability		Excellent flexibility and high resilience to deformation
Color		Grayish Black (other colors available depending on volume)
Density		30 kg/m <sup>3</sup> (foam only)
Thermal conductivity	ASTM C518	0.034 W/mK @ 24°C
Water Vapour Permeability	ASTM E96	0.00 g/h.m <sup>2</sup>
Water Vapour Permeance	ASTM E96	0.00 perms
Water Absorption (Vol.%) 28 days	BSEN 12087: 1997 Method 2A	0.3
Surface spread of flame	BS 476 Part 7	Class 1
Toxic Fume, R	BS6853:1999	0.77
Smoke & Toxicity	ISO 5659-2 IMO MSC 61 (67) 1996	Ds<200, passed toxicity level
Operating Temperature		-80°C to 100°C
Enviraonmental Concerns		CFC & HCFC Free Non Contributing to ODP & GWP
Ozone Resistance		Excellent
UV Resistance		Excellent. No Additional UV coatings required



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