

Airflow AC Middle East FZE-LLC



AIRFLOW AC

www.airflowac.me,

Email:- airflowacme@gmail.com, Tel:00971509293811

AIRFLOW THERMbarrier Thermal Insulation Product Range



Thermal Insulation Solution for the HVAC&R Industry



Airflow AC middle East FZE LLC

THERMbarrier

Insulation a key driver for Energy Conservation.....

Today, it is a known fact that a considerable amount of energy utilised in industries, residences, corporate Offices, educational institutes and many such places is lost due to inappropriate insulation, which eventually slows down the overall economic development.

Much more than desired amount of energy is being consumed by air- conditioning due to improper insulation. This is mainly due to the fact that buildings are not being insulated properly resulting in huge loss of energy.

Even, refrigeration systems with poor insulation lead to a great loss of energy. Automotive industry also, faces this challenge of energy conservation as inadequate insulation in the vehicles directly gives rise to more fuel consumption.

The situation is very alarming, and we need to take a step forward towards conservation of energy and thus contribute towards the global growth.

We at Goldcoin, have made a sincere attempt in terms of energy conservation, by getting into the production of XLPE, which is the best insulation material used to save energy.

"Our vision is to enhance the value of life by taking a step forward to conserve energy through our extensive range of XLPE products all across the globe."





Airflow Group of Companies

A brief introduction

The journey of Airflow Group began in 2018, when the founder members Mr. Sudharshan Reddy laid the foundation stone for the company (Airflow Ac Middle East FZE LLC). In a span of 5 years, with the support & dedicated hard work put in by the team & of course with a strong vision & conviction from Mr. Sudharshan reddy

In such a short span of 5 years, the Group has expanded its manufacturing to 12 different products mainly in Airoutlets & insulation. T

– XLPE Foam THERMbarrier

Apart from strong sales in India, the Group exports its products to countries like United Kingdom, Sharjah, Dubai, Australia, Thailand etc.

The Group's growth since inception has been phenomenal, thanks to the dynamic & progressive management. The driving force behind the success has been enthusiasm in exploring new products.

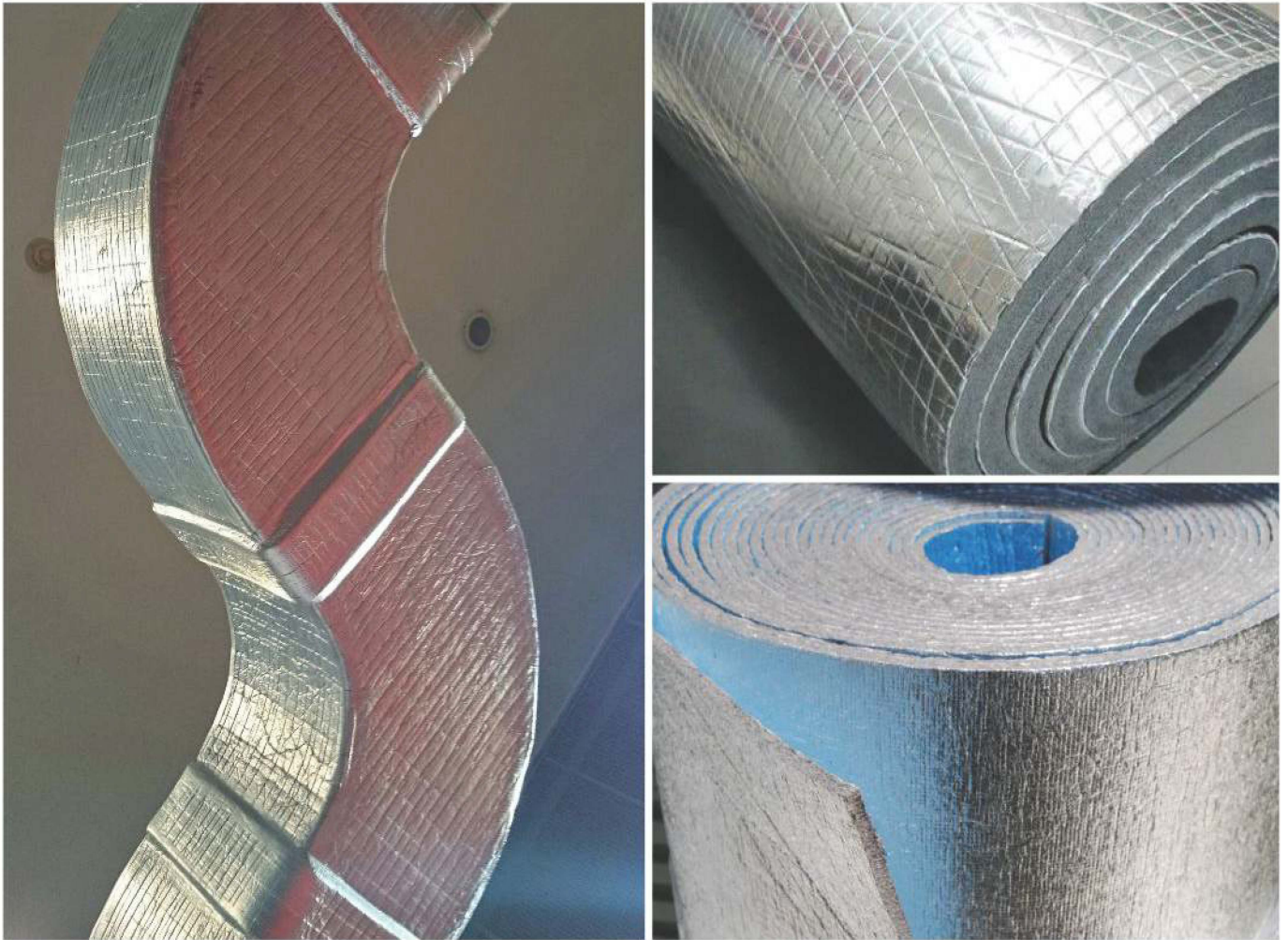
The Group has latest manufacturing facilities with all State Of The Art extrusion lines mainly from Korea & Taiwan.

We pledge to offer the best quality products to all our customers, with continuous quality improvisation.

We are growing.....

***“GROWTH IS NEVER BY CHANCE.;
IT IS THE RESULT OF FORCES WORKING TOGETHER.”***

XLPE FOAM FOR DUCT INSULATION





THERMbarrier Technical Specifications

Property	THERMbarrier Typical Values			Test Method
Material description	Fire retardant, closed cell, chemically crosslinked polyethylene			
Material form	Rolls, sheets and tubing			
Application	Thermal & Acoustic Insulation			
Area of applications	A/c Humidification ducts, Spandrel insulation, Underdeck,			
	Hot & cold water pipelines & acoustic flooring			
Operating temperature	-40° C to + 115° C			
Thermal stability	Less than 5 % shrinkage at 90° C for 24 hours			
Colour	Grey			
Nominal density (Kg/m³)	33 ± 3kg/m³			BS 4370 Part 1
Thermal conductivity (W/m° K)	Mean Temperature (°C)	W/m°k	K Cal/hr m°C	IS:3346 / 1980
	0°C	0.0318	0.0273	
	23° C	0.0328	0.0282	
	46° C	0.0383	0.0329	
Water absorption	<2 %			ASTM D 1056-98
Water vapour permeance (28 days)	<6x10 ⁻³ ng			ASTM E-96
Water vapour transmission				
(7 Days)	Negligible			
(28 Days)	<1100 µg / m2s			
Water vapour resistance factor (µ)	Plain	> 11000		DIN 52615
	Aluminum foil face one side	> 14000		
Tensile strength (N/m²)	Min. 25			BS 4370 Part 2
Dimensional stability	No visible changes observed			BS 4370 Part 1
(RH-60%, temp 35° C for 24 hrs.)				
Volume percentage of closed cell	>90%			BS 4370 Part 2
Oxygen index, %	29 - 34			ASTM D 2863
Fire characteristic	a) Surface spread of flame	Class 1		BS 476 Part 7
	(For both plain and foil faced material)			
	b) Fire propagation	Class 0		BS 476 Part 6
	(for aluminium foil faced material only)			
Resistance to chemicals	No effect			ASTM C 543
(for both mild acidic & alkaline)				
Sound transmission class	40db			IS:9301 / ISO 140 / ASTM E 413
(9 MM THERMbarrier laminated				
with 12 mm gypsum board)				

Applications

- AC / Humidification Duct insulation
- Under deck insulation
- Pipelines
- Acoustic flooring etc.

Product Range

Thickness in mm	Width in mm Plain	Width in mm Met Pet / Aluminium / UV Film	Length in Mtr
3mm	1250mm	1220mm	100Mtr
4mm	1250mm	1220mm	70Mtr
5mm	1250mm	1220mm	60Mtr
6mm	1250mm	1220mm	50Mtr
8mm	1250mm	1220mm	40Mtr
9mm	1250mm	1220mm	40Mtr
10mm	1250mm	1220mm	40Mtr
12mm	1250mm	1220mm	25Mtr
13mm	1220mm	1220mm	25Mtr
15mm	1220mm	1220mm	25Mtr
19mm	1220mm	1220mm	20Mtr
20mm	1220mm	1220mm	20Mtr
25mm	1220mm	1220mm	15Mtr

Note:

1. Available in various thicknesses as per customer requirement.
2. All material have standard density 33(+/- 3)kg/m3.
3. All material available as a (FR) Fire Retardant as per BS-476 Part 6 & Part 7 respectively.
4. Available with Adhesive Backing on customer request.
5. Available with various factor applied lamination such as Metalized Film, Aluminum Foil, UV Film one side & both side is available on customer request.

Applications

Insulation

Air duct and pipe insulation for cooling, heating and refrigeration pipes, insulating wrapping, impact sound insulation, air conditioning parts, etc.

Construction

Gasket tape, padding for remote heating, corrugated panel seals, screed floors, joint fillers, parquet underlay, corrugated roof insulation, tunnel insulation, membrane protection, etc.

Sports and Leisure

Sport shoes insoles and inners, camping mats, sports and gymnastics mats, swimming board, seat cushions, life jackets, swimming accessories and other toys, etc.

Automotive Industry

For moulded and stamped parts used in interior cladding, e.g. linings for wheel arches and car boots, door insulation seat covers, insulation for heating and air conditioning, etc.

Orthopaedics and Body Protection

Shoe inserts, skate and ski boot padding, knee-protectors, inserts for children's seats, body protection for various kinds of sports, etc.

Packaging

Packaging interlayer, reusable packaging for the motor and electrical industries, load-carriers, corner protection, outer packaging, tray holder, distance holder, etc.

Comparison between THERMbarrier and Nitrile Rubber / Foam

THERMbarrier	Nitrile Rubber / Foam
Fire Characteristic	
Fire retardant closed cell chemically crosslinked polyethylene does not spread the fire. The material does not release toxic fumes or any dense smoke, in the event of a fire	Nitrile foam products are rubber based and though claimed as Class `1` and Class `0` spread of fire characteristics, these products release highly toxic gases and fumes which reduce oxygen content in the atmosphere and thus hamper rescue operations
Cell Structure	
Chemically crosslinked polyethylene has a closed cell structure, thus offering high resistance to water vapour transmission	Nitrile Rubber / Foam materials have only the surface layer with closed cells. The inner material is porous and prone to moisture ingress, thus decreasing its thermal resistance with time
Temperature Range	
Service temperature range is from -40°C to + 115°C	Service temperature range is from -40°C to + 115°C
Thermal Conductivity	
The closed cell chemically crosslinked structure of material provides lower thermal conductivity and thus higher thermal resistance for same thickness of material	Nitrile rubber / foam has higher thermal conductivity, thus offering lower thermal resistance under similar conditions
Mechanical Properties	
Closed cell chemically crosslinked polyethylene foam performs even at lower density of 30 kg / m ³ , offering higher resistance to compression improved tensile and tear strength	Nitrile rubber / foam is available in density from 60 kgm ³ to 70 kg/m ³ . The rubber based structure of material, offers lower resistance to compression. The outer closed cell layer tends to crack and wear off early, leading to moisture absorption and gradual deterioration of material

Comparison between THERMbarrier and Rockwool / Slagwool

THERMbarrier	Rockwool / Slagwool
Material construction	
THERMbarrier is a closed cell chemically crosslinked product which offers high resistance to moisture transmission	Rockwool / Slagwool products are open cell structure materials containing a major content of slg, the waster from steel plant industry. Both physical and chemical impurities within the material tend to absorb moisture from the atmosphere and cause deterioration of material.
Thermal conductivity	
THERMbarrier is a closed cell material whose thermal conductivity remains unaffected with atmospheric changes. Thermal conductivity is lower in comparison	Rockwool / Slagwool material contains chemical impurities as Sulphides and Chlorides which absorb moisture from the atmosphere, thereby increasing its thermal conductivity and lowering its thermal resistance
Handleability	
THERMbarrier give ease of handling. It is convenient to carry to heights for placing both in vertical and horizontal positions without sagging	Grab strength of material is very poor. Physical impurities as unfiberised particles in the form of steel shots only add to the weight of the material, without contributing towards the insulating properties. The steel shots tend to disintegrate the material, which sags with time. Even high density material requires support of wire netting. Minimum density of material is 48 Kg/m ³ .
Vapour barrier lamination	
THERMbarrier is a closed cell insulation material offering a smooth surface for lamination of vapour barrier. The adhesion is proper, uniform and without any air entrapment	Rockwool / Slagwool material contains many impurities which do not allow adhesive of vapour barrie, without which open cell structure materials are not suited for low temperature applications
Application	
THERMbarrier is easy to work with, provides a uniform furnish and requires lower thickness for similar conditions, thereby providing more space for other utilities	Application with Rockwool / Slagwool is messy. Fibers released in the atmosphere is a matter of concern, for all those associated i.e. the applicators and occupants in the comfort conditioned spaces
Acoustic property	
THERMbarrier is a good vibration dampener material. It does not settle, should the appliation envisage high frequency or vibration	Rockwool / Slagwool materials sag and settle down with time under their own weight due to poor inter meshing of the fibre structure. This leaves a cavity on the upper side allowing sound to pass through

Comparison between THERMbarrier and Resin Bonded Fibreglass Wool

THERMbarrier	Resin Bonded Fibreglass wool
Fire Characteristic	
THERMbarrier - A closed cell chemically crosslinked material is fire retardant, does not propagate fire nor release dense smoke or toxic gases	The Binder is combustile and in case of fire, it continues to smoulder within the material. This could act as a source of fire itself
Water Absorption	
THERMbarrier has negligible water absorption and extremely low vapour transmission. Thus thermal conductivity is not affected under varying atmospheric conditions	Open cell structure material, absorbs moisture leading to increase of thermal conductivity tending towards that of water i.e. a conducting media
Application	
THERMbarrier is easy to work with and faster to apply. Provides a smooth uniform finish. Requires lower thickness fir similar conditions, saving space for other utilities	Application of material requires larger area, is messy and a health hazard. Fibres released in the atmosphere cause irritation
Acoustic Property	
Good vibration dampener materia. Improves sound transmission loss. Material does not settle should the application, envisage high frequency or vibration	Poor sound dampening property. Does not perform in preventing sound transmission, all by itself
Performance	
Closed cell chemically crosslinked products are recommended for clean room applications	Fibrous materials are not suitable for clean room area. Their thermal resistance is adversely affected in high humidity areas as open cell structure of material tends to absorb moisture. This also reduces the thickness of material with time
Packing and Transportation	
Easy to handle and transport without adversely affecting quality of material	Material is prone to damage in transit and fibre properties are adversely affected. The material may not recover to the required thickness when unpacked, as its resilience is adversely affected during transportation
Handleability	
Closed cell material has ease of handleablity, convenient to carry to heights to place in both vertical and horizontal locations. High srength to weight ratio	Grab strength of materials is poor Material sags in vertical applications

Comparison between THERMbarrier and Polyurethane foam (PU)

THERMbarrier	Polyurethane foam (PU)
Fire resistance	
THERMbarrier is fire retardant and meet requirements of BS 476 Part 7 Class 1. The material does not release toxic gases or dense smoke in the event of fire	Extremely inflammable, burns, releasing dense smoke and toxic gases which are highly hazardous
Thermal conductivity	
Initially higher than PU foam. However, there is hardly any change considering that material offers high resistance to water vapour ingress	Though thermal conductivity is low at time of production, it increases with time due to air replacing entrapped inert gas within. Thus; design of systems using the material require to be bases on stabilized product which have `aged`
Application	
Product offers high resistance to compression, is flexible and has versatility of applications	Material is rigid and tends to open up during contraction and expansion of substrate. Special care is require or joints in very lower temperature area, which adds to cost
Environmental effect	
CFC freem environmental friendly	CFC emission is a threat to the nvironment causing ozone depletion
Material construction	
Closed cell chemically crosslinked construction of maerial is well bonded offering a smooth uniform finish. Adhesion of aluminium foil and other laminations is very good	The surface powders away, thus adhesion of lamination is poor. Aluminium cladding is necessary to avoid surface erosion

Comparison between THERMbarrier and Expanded Polystyrene (EPS)

THERMbarrier	Expanded Polystyrene (EPS)
Fire resistance	
Meets requirements of BS 476 Part 7 Class 1, for surface spared of flame characteristics, In the event of fire material does not release toxic gases or dense smoke	Extremely inflammable, even with addition of inhibitors the material burns aggressively releasing toxic gases and dense smoke. These not only cause suffocation but also hamper rescue operations
Resistance to organisms	
Material is not attacked by rodents and is resistant to fungi and Vermin	Easily attacked by rodents and insects leading to deterioration of material
Chemical stability	
Unaffected by most acids and chemicals. Offers high resistance to ingress of moisture, thus its properties remain unaltered with time	Material is prone to damage by hydrocarbons. The cells break away with time leading to cavities for moisture entrapment, effecting its properties adversely
Temperature	
Material is suitable for temperature up to + 115°C	Upper temperature limit mentioned is +80°C only
Thermal conductivity	
Thermal conductivity of material is low and is unaffected by changes in atmospheric humidity	Thermal conductivity in service increases, as cells crack down due to weak structure and faster ageing of material occurs
Mechanical properties	
Material is flexible, offering high strength to weight ratio. It has high resistance to compression and versatility of applications	Material is rigid and non-flexible requiring special care at the joints, which may open up during contraction and expansion of substrate during service. Applications are limited due to fire hazards
Transportation	
Closed cell chemically crosslinked material is available in the form of rolls and easy to transport. With more quantity per truck, cost of transportation is less	Expanded Polystyrene available as slabs is prone to damage in transit and being voluminous material has high transportation cost



AIRFLOW AC MIDDLEEAST FZE LLC

A Airflow Group of Company

Let's Conserve Energy.....

