



# THERMAL INSULATION AIR DUCT INSULATION



## INSULATION

### Objective

- optimal temperature regulation for comfort and well-being

### Benefits

- suitably insulated air ducts minimize / avoid :
  - heat loss / increase
  - energy consumption
  - condensation
  - noise levels from pumps and / or fans
  - proliferation of mold and bacteria
  - structural damage (ie. false ceiling) due to dripping water

### Applications:

**TROCELLEN®** Cross-linked Polyethylene foam finds many applications in the HVAC, plumbing, construction and roofing industries. It is used for insulation of hot and cold water pipes, air ducts, computer raise floor, roofing structures, and many internal components found in large air handling units, heat exchangers and split air conditioning systems. In transportation markets, Trocellen can also be found in automotive, rail and marine applications.

In addition to thermal insulation of pipe and duct work, Trocellen provides effective solutions for roof insulation.

### Installing Roof Insulation Is Easy!

- Step 1. Roll over purlin / roof and secure
- Step 2. Mount roof sheets on top of the insulation

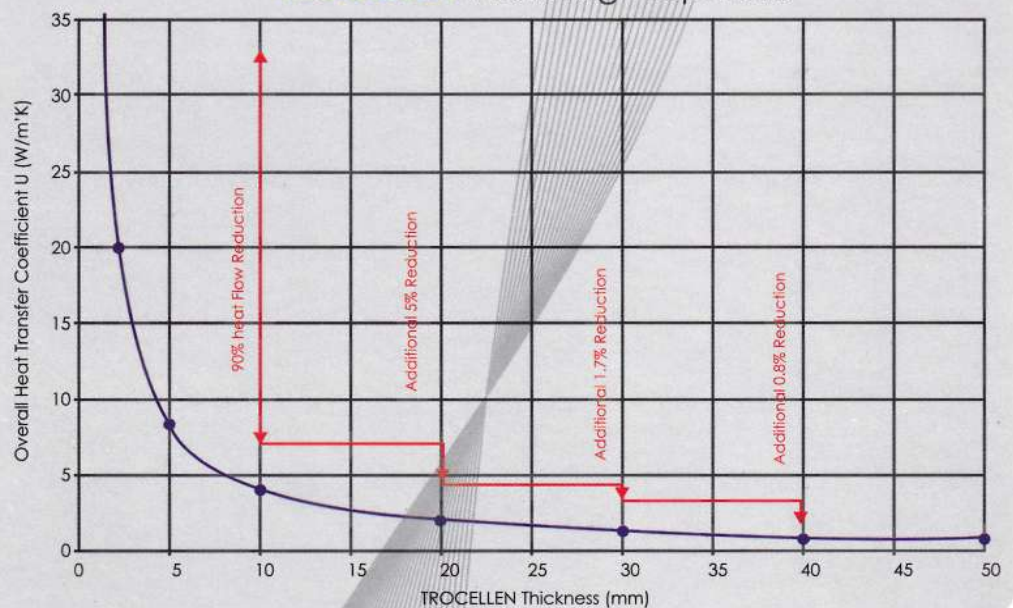
- Done – no chicken wire mesh required!

### TROCELLEN – the perfect material

- closed cell, chemically crosslinked, polyolefin resin foam
- high performing flame retardant protection in the event of fire
- lasting constant thermal performance and sound proofing



### TROCELLEN Insulating Properties



One of the determining factors governing the indoor temperature of a building is the rate of heat flow through the roof structure. Trocellen reduces this heat flow dramatically, even when using low thickness material (10mm Trocellen will block 90% of heat flow).

## PRODUCT RANGE

Flame Retardant Cross-linked Polyethylene Foam

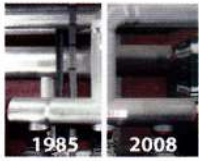
Flame Retardant Cross-linked Polyethylene Foam Laminated with Metalized Film

Flame Retardant Cross-linked Polyethylene Foam Laminated with Aluminum Foil

**TROCELLEN®** Insulation products can be fabricated with self-adhesive.

### Advantages and Features:

- Save Energy
- Good Thermal Insulation
- Easy to Install. Save Cost
- Constant Lasting Thermal and Sound Performance
- Durable
- Closed Cells
- Light Weight
- Non-toxic and Odourless
- Bacteria, Mold and Mildew Resistant
- Excellent Moisture Resistance
- Constant Form and Shape. Impact Resistant
- Easy to Clean
- Ultra Low Toxicity and Opacity of Fumes In The Event of Fire



Property	Unit	1985	2008
Thermal conductivity	W / mK	0,0394	0,0394

\*Trocellen tested after 23 years in operation and found the same thermal conductivity value. Project: Vintage, Italy

**Flame Retardant Cross-linked Polyethylene Foam compliant with stringent smoke density and toxicity test according to Airbus Directive.**

Description	Limit	Flaming	Non-Flaming	Result
Smoke Density	Dm<200ppm	89ppm	42ppm	Pass
Toxicity:				
HCN	max150ppm	5ppm	2ppm	Pass
CO	max1000ppm	100ppm	10ppm	Pass
NO + NO2	max100ppm	5ppm	0ppm	Pass
SO2 + H2S	max100ppm	0ppm	0ppm	Pass
HF	max100ppm	0ppm	0ppm	Pass
HCL	max150ppm	0ppm	0ppm	Pass

Trocellen Polyethylene Foam in Rolls  
(Width: 1.2m)

Thickness, mm	STD LENGTH, m
6	80
8	80
9	60
10	60
12	60
15	60
19	50
20	45
25	40

\*Sheets and non-standard length available upon request.

### TROCELLEN Self Adhesive Foam Tape

TROCELLEN self-adhesive foam tape is available in plain or laminated with Metalized Film / Aluminium Foil.

Standard Size: T3mm x W0.05m x L50m

These tapes should be used to join metal elements such as duct flanges or ventilation vents to guarantee hermetic sealing and vibration damping.



### Environment Friendly

All **TROCELLEN®** grades are free of cadmium, lead stabilisers, Tinorganic substances (eg Tributyltin), and other toxic / heavy metals. **TROCELLEN®** is produced without the use of CFC, HCFC or HC's.

TECHNICAL DATA		TEST STANDARD	UNIT	TROCELLEN W3CF2
DENSITY		ISO 845	Kg/m <sup>3</sup>	33
TENSILE STRENGTH	MD CD	ISO 1798	MPa	0.25 0.19
ELONGATION AT BREAK	MD CD	ISO 1798	%	160 200
COMPRESSION STRESS STRAIN AT DEFLECTION	10% 25% 50%	ISO 3386	KPa KPa KPa	13 31 87
TEAR STRENGTH	MD CD	DIN 53507	N/mm	0.8 0.8
OPERATING TEMPERATURE RANGE			°C	-40 to 110
COMPRESSION SET (22h, 25%, 23°C)	0.5h 24h	ISO 1856	% %	<17 <9
THERMAL CONDUCTIVITY	0°C 23°C 40°C	DIN 52612	W/mk	app. 0.034 app. 0.036 app. 0.039
EFFECT OF WATER: WATER VAPOUR PERMEABILITY WATER ABSORPTION (AFTER 28 DAYS) VAPOUR TRANSMISSION FACTOR (mu)		DIN 52615	ng/Pasm % Vol	<0.15 <3 2190 (foam only) 12900 (foam laminated with aluminium film)
COLOUR				STD Grey. Also available in various shades
CHARACTERISTICS				Excellent flexibility & elasticity No fibre erosion (Trocellen foam is a non-fibre insulation material) Good resistance against ozone & UV
HORIZONTAL BURNING TEST FLAMMABILITY FLAMMABILITY CLASS B2 OXYGEN INDEX SMOKE INDEX		UL94 HBF ASTM D 635 DIN 4102 ASTM D 2863 AS1530.3-1989		Certified Self-Extinguish PASSED 29.3 0 - 1 Certified by Jabatan Bomba dan Penyelamat Malaysia
Foam Laminated With Metalized Polyester Film		TEST STANDARD	UNIT	TROCELLEN W3CF2 + FCE
TENSILE STRENGTH	MD CD	ISO 1798	MPa	0.38 0.27
ELONGATION AT BREAK	MD CD	ISO 1798	%	60 60
Foam With Adhesive Coating		TEST STANDARD	UNIT	TROCELLEN W3CF2 + D110
TACKINESS 90°C PEELING ADHESION STRENGTH		JIS K 6400	gm gm	Above 350 Above 500