

## ANTIMICROBIAL ASSESSMENT

Description	Test Method	Typical Value
Resistance to bacteria	ISO 22196	<0.1% bacteria survival
Resistance to fungal	ASTM C 1338	No Growth
Resistance to mould	ASTM G21 - 96	No Growth

**PebFoam™**  
Roof Insulation

Eco efficient solutions

Environmental-friendly

New perspective of green solution

## CONTRIBUTION OF PebFoam™ TO LEED RATING



### EA – Energy and Atmosphere

- Compliance with:
- Prerequisite 2: Minimum energy performance
  - Credit 1: Optimize energy performance (1-19 points)



### QI – Indoor Environmental Quality

PebFoam™ insulation solutions comply with required criteria providing an advanced acoustic performance in building.

- Compliance with:
- Prerequisite 3\*: minimum acoustic performance
  - Credit 3: Construction IAQ management plan (1 point)
  - Credit 4.1: Low-emitting materials, adhesives and sealants (1 point)
  - Credit 6.2: Controllability of systems, thermal comfort (1 point)

\* Credit present only in the Standard LEED for Schools



### MR – Materials and Resources

By causing only few non-recyclable waste, PebFoam™ insulation product range promotes an efficient and responsible use of materials and resources.

- Compliance with:
- Credit 2: Construction waste management (1-2 points)
  - Credit 4: Recycle content (1-2 points)
  - Credit 5: Regional materials (1-2 points)



Award Winning Environmental-Friendly Factory (Changshin - Korea) - 67,000 sqm

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**PEB**  
**STEEL**  
BUILDING FOR LIFE

**25**  
Years 1994 - 2019



**PebFoam™**  
Roof Insulation

Efficient energy solutions without affecting  
environment and human health

Prevent Contamination of Your Finished Product, Protect Your Workers

The 1<sup>st</sup> industrial project in Vietnam to meet LEED™ requirements.



[www.PEBsteel.com](http://www.PEBsteel.com)



# WHY PebFoam™ ?

Roof Insulation

## ENVIRONMENTAL BENEFITS

- CFC's, HCFC's and VOC free
- No plasticizer, heavy metals and formaldehyde
- Reduce CO<sub>2</sub>, emissions
- Reusable and Recyclable
- Non hazardous
- Anti-bacterial and anti-fungal
- Fibrous free
- Antimicrobial
- Low smoke emissions

## ECONOMICAL BENEFITS

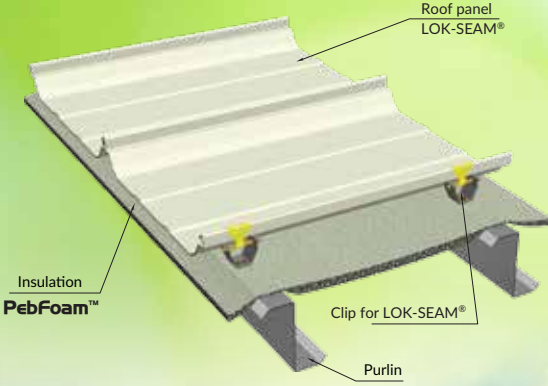
- 3 in 1 insulation, thermal break and vapour barrier
- Strong, tough, durable
- Quick and easy to install
- Reduce waste of energy and material
- Reduction in utility bills
- No maintenance and made to last
- Reduce construction waste

## SOCIAL BENEFITS

- Improve indoor air quality
- Improve health
- User friendly
- Water-resistant and Moisture free
- Rodent and insect resistant
- Odourless
- Friendly to skin

## OUR REFERENCES:

- Pharmaceutical facility
- Commercial building
- Food processing
- Electronic plant
- Convention center
- University
- Hypermarket
- Showroom
- Airport



Cross Section

Medochemie Pharmaceutical

## Class 0 PebFoam™

Roof Insulation

- ✓ *Eco-friendly*
- ✓ *Energy Saving*
- ✓ *In-built Antimicrobial*
- ✓ *Stable Thermal Conductivity*

## Product Description

Thickness (mm)	Width (m)	Length (m)
5	1.2	100

## PebFoam™ sample

Roof Insulation



Inside Face



\* Pure aluminium

Outside Face

## PRODUCT DESCRIPTION

PebFoam™, the cross-linked polyethylene foam, an eco-friendly energy saving product that always provide the best insulation solutions to your green building. PebFoam™ is able to provide energy efficiency without risk, which are caused by CFC's, HCFC's, and VOC, for environment and human health. This is one of a development in green technology.

## PRODUCT FEATURES

- Pure aluminium prevents heat exchange
- Excellent acoustical dampening properties
- Fire retardant
- In-built anti microbial
- Light weight
- Reflects up to 97% heat radiation
- Extra long life span

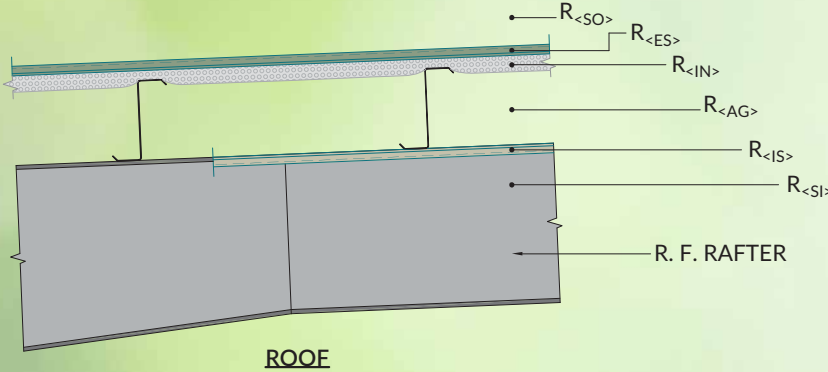
## TECHNICAL DATA

Property	Test Method	Unit	Typical Value	
			5mm	10mm
Thermal Conductivity (23°C) (K.Value)	JIS A 1412-2	W/mK	0.035	0.039
Water Absorption	JIS K 6767 Method B	mg/cm <sup>2</sup>	0.05	
Dimension Stability	DIN 53431	°C	95	
Tear Strength	DIN 53507	N/mm	MD 3.29	
		N/mm	CD 2.74	
Emissivity - Foil Face	ASTM C 1371	-	≤ 0.05	
Reflectivity - Foil Face		%	≥ 95	
Resistance to Fungi	ASTM G21	-	Zero Growth	
Ozone Depleting Substances (CFCs, HCFCs, HBFCs)	US EPA 5021A	-	Not Detected	
Volatile Organic Compounds (VOCs)		-	Not Detected	
Burst Strength	AS 3706.4	kN	1.8 (single sided aluminum foil)	
			2.8 (double sided aluminum foil)	

## THERMAL TRANSMISSION (U-Value) / INSTALLED

The following table shows the installed thermal transmission (U-Value) for roof and walls of pre-engineered buildings using foam material with a 5mm (1 side aluminium) or 10mm (double side aluminium), and based on summer conditions as calculated from the above formula.

Insulation Thickness (mm)	U-Value
	Roof/Wall W/m <sup>2</sup> K
5mm	1.957
10mm	1.602



## THERMAL RESISTANCE (R-Value) / INSTALLED

The following examples illustrate the calculations of the installed "R" value for the roof and wall construction using foam material with a 5mm (1 side aluminium) or 10mm (double side aluminium). Note that resistances in horizontal construction may differ from resistances for vertical construction.

Insulation Thickness (mm)	U-Value
	Roof/Wall W/m <sup>2</sup> K
5mm	0.511
10mm	0.624

## FIRE AND SMOKE BEHAVIOUR

Property	Test Method	Unit	Typical Value
Burning Test	UL94	-	HF-1
Ignitability Index	AS/NZS 1530.3	-	0
Spread of Flame Index			0
Heat Evolved index			0
Smoke Developed Index			1
Smoke Toxicity	IMO Resolutions MSC 307 (88): Annex 1: Part 2	-	Satisfies max allowable concentrations for the following combustion gases: CO, HCL, HBr, HF, HCN, NOx, SO2
Smoke Density		-	Ds (max) < 200
Flame Spread Index and Smoke Developed Index	ASTM E84	-	Class A

The data and information represented above are intended as a general guide only and are not construed as specification limits.



USGBC



Prevent Condensation



Flame Retardant



Antimicrobial