



# ICYNENE LD-C-50<sup>R</sup>

## Application Scope

ICYNENE LD-C-50<sup>R</sup> is a healthy open cell spray and pour foam insulation for walls, roofs, closed cavities, new and existing drylining and floors.

## Description

The foam is obtained by combining two unique components in equal quantities with a pump/reactor connected to a spray gun. The expansion of the foam is 100% water based without any blowing agent (the water contained in the resin participates to the foam expansion when it is mixed with MDI in the gun chamber).

## Physical & Mechanical Properties

Tests	Test Method & Units	Conditions	Values
Thermal Conductivity measured according to the BBA, Agrément N° 08/4598, NSAI/IAB Agrément 09/0333 ETA approval 08/0018	EN 12667 EN ISO 10456 W/m.K		0.039
Density Range	NF EN1602 kg/m <sup>3</sup>		7.5 - 8.3
Compressive Strength	NF EN 826 KPa	For a 10% deformation	≥ 6,7
Water Absorption	NF EN 1609 kg/m <sup>2</sup>	under partial immersion	0,3
Vapor Permability	NF EN 12086 kg/m <sup>2</sup> .s.Pa		1.13 x10 <sup>-9</sup>
Resistance to vapor diffusion	NF EN 12086 μ		3,3
Air Permeability	NF EN 29053 m <sup>3</sup> /m.s.Pa		7,6 x10 <sup>-9</sup>
Dynamic Stiffness	NF EN 29052-1 MN/m <sup>3</sup>		4,3 - 8,4
Fire rating according to ATE n°08/0018	EN 13501-1	Behind a 12mm gypsum board	B s1 d0
Acoustic Performance	EN 1350/1-1:1997	Complies to timber frame collective buildings in Great Britain. BPC (Building Performance Centre) test N° P/4950L/09	

**Disclaimer:** Data presented in this document is based on tests and information, which we believe to be reliable. The document is provided for information purposes only and does not constitute a warranty, expressed or implied, including and warranty of merchantability or fitness. This data is relied upon at the sole discretion and judgement of user/reviewer. It is the responsibility to ensure the use of the product complies with all applicable national and local building codes and regulations.

## Other Tests

### Detection of VOC's (Volatile Organic Compound) Aldehydes According to ISO 16000-9

Carbonyl Compounds	After 1 day		After 3 days		After 28 days	
	µg/m <sup>3</sup>	µg/m <sup>3</sup> .h	µg/m <sup>3</sup>	µg/m <sup>3</sup> .h	µg/m <sup>3</sup>	µg/m <sup>3</sup> .h
Formaldehyde	<1.9	<0.7	<3.8	<1.4	<0.5	<0.2
Acetaldehyde	<2.6	<0.8	<2	<0.7	<0.5	<0.2
Acetone	0.3	0.1	ND	-	ND	-

**Not Detected: detection limit (0.11µg/m<sup>3</sup>) < LOQ**

\* Extract from the report N° 10/229 of CERTECH (Centre of Technological Resources in Chemistry Belgium).

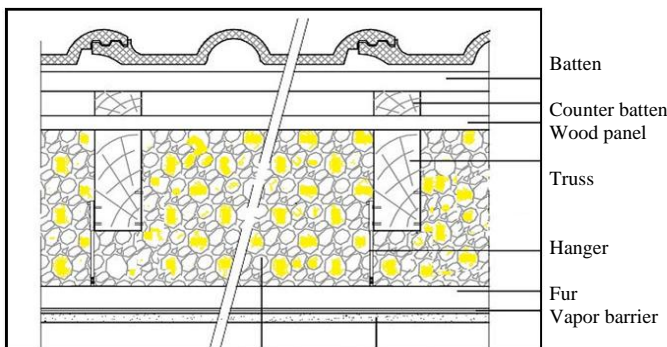
### Smoke Toxicity Measurement from Combustion ICYNENE LD-C-50<sup>R\*</sup>

Temperature of Test °C	Formaldehyde HCHO In ppm	Sulfur Dioxide SO2 In ppm	Acid HCL Hydrochloric In ppm	Oxides of Nitrogen NOX In ppm	Hydrogen Cyanide HCN En ppm	Carbon Monoxide CO En ppm
550 °C**	4	0.0	0.0	0.5	10	100
% of critical concentration threshold CGCi	20%	0%	0%	5%	25%	7%

\*\* Results obtained by introducing 0.1 cm<sup>3</sup> of foam in a closed system with a volume of 3000 cm<sup>3</sup>.

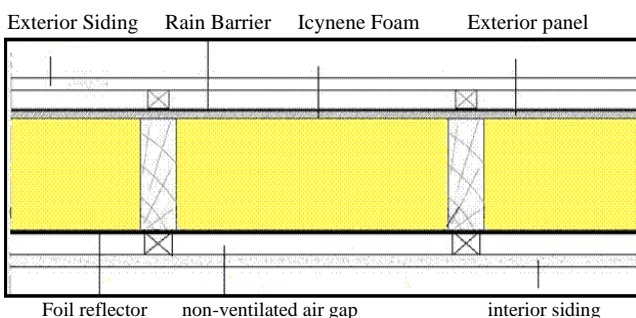
\* Extract from report N° 8511201395 of 'Israel Standard Institute' Laboratory of Materials of Construction.

## Up Values Examples



### Insulation Between Trusses

Values calculated for  $\Delta U$   
 Distance between studs 600 mm  
 Density of lines 3/m<sup>2</sup>  
 Lambda LDC-50 = 0.039 W/(m.K)  
 Lambda of plaster cladding = 0.25 W/(m.K)  
 $\Delta U = 0.06$  W/(m<sup>2</sup>.K) default value defined in the rules TH U booklet 4  
 with insulation thickness = 250 mm  
**Up Value = 0.21**



### Insulated Timber Frame Wall

Values calculated for  $\Delta U$   
 Distance between studs 600 mm  
 Lambda LDC-50 = 0.039 W/(m.K)  
 Thermal resistance of Foil Membrane = 0.25 W/(m.K)  
 Thermal resistance of the air gap = 0.65 (m<sup>2</sup>K)/W  
 Plaster cladding lambda = 0.25 W/(m.K)  
 $\Delta U = 0.06$  W/(m<sup>2</sup>.K) default value defined in TH U booklet 4  
 with insulation thickness = 145 mm  
**Up Value = 0.27**