



ICYNENE LD-C-50^R

Application Scope ICYNENE LD-C-50^R is a healthy open cell insulation foam for walls and roofs.

Description The foam is obtained by mixing up two 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	EN 12667 EN ISO 10456 W/m.K		0.039
Density Range	NF EN1602 kg/m ³		7.5 - 8.3
Compressive Strength	NF EN 826 KPa	For a 10% deformation	≥ 6,7
Water Absorption	NF EN 1609 kg/m ²	under partial immersion	0,3
Vapor Permability	NF EN 12086 kg/m ² .s.Pa		1.13 x10 ⁻⁹
Resistance to vapor diffusion	NF EN 12086 μ		3,3
Air Permeability	NF EN 29053 m ³ /m.s.Pa		7,6 x10 ⁻⁹
Dynamic Stiffness	NF EN 29052-1 MN/m ²		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	

Other Tests

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

	After 1 day		After 3 days		After 28 days	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3.\text{h}$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3.\text{h}$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3.\text{h}$
Carbonyl Compounds						
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 ($0.11\mu\text{g}/\text{m}^3$) < LOQ

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

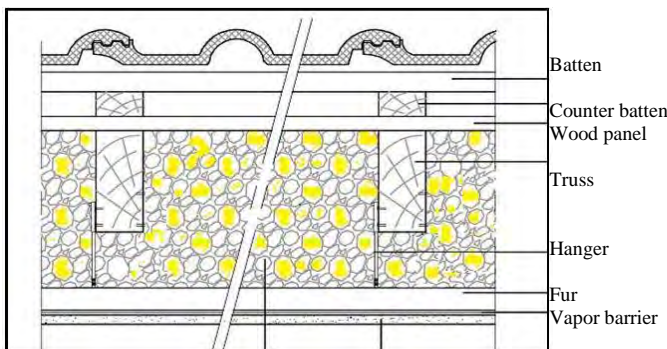
Smoke Toxicity Measurement from Combustion ICYNENE LD-C-50^{R*}

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 cm³ of foam in a closed system with a volume of 3000 cm³.

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

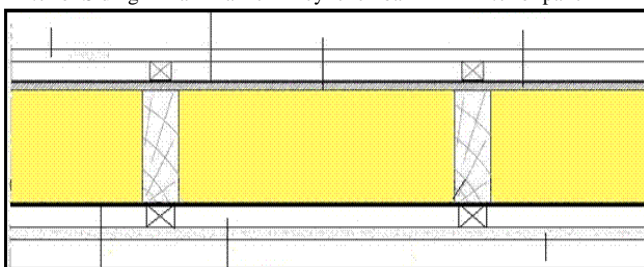
Up Values Examples



Insulation Between Trusses

Values calculated for ΔU
 Distance between studs 600 mm
 Density of lines 3/m²
 Lambda LDC-50 = 0.039 W/(m.K)
 Lambda of plaster cladding = 0.25 W/(m.K)
 $\Delta U = 0.06 \text{ W}/(\text{m}^2.\text{K})$ default value defined in the rules TH U booklet 4
 with insulation thickness = 250 mm
Up Value = 0.21

Exterior Siding Rain Barrier Icynene Foam Exterior panel



Insulated Timber Frame Wall

Values calculated for ΔU
 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 (m²K)/W
 Plaster cladding lambda = 0.25 W/ (m.K)
 $\Delta U = 0.06 \text{ W}/(\text{m}^2.\text{K})$ default value defined in TH U booklet 4
 with insulation thickness = 145 mm
Up Value = 0.27