

DESCRIPTION

Polyurethane foam density 35-45 kg/m³ and thermic conductivity of 0,030 ± 0,001 W/m·K (0,031 aged). It does not contain any HFCx, HCFCs, VOCs, etc...

USES

It's specifically designed for thermal insulation in construction, industry, farming or agricultural facilities. In applications where flat roofs, interior floors and installations with floor heating system, all this with high compression needs on the surface.

APPLICATION

ACE ECOFOAM-35 system does not need the addition of additives for use. The machine used for **ACE ECOFOAM-35** system processing has to be capable of dosing components (polyol and isocyanate) in equal proportions by volume (+ / - 2%) and mixing at pressures between 60 and 120 kg/cm².

The temperature of the machine, heaters and hoses should be set between 30°C and 50°C. These control temperatures and pressures are variable parameters depending on environmental conditions, and the responsibility of the precise calibration corresponds the applicator.

In addition of changing ostensibly product performance, weather conditions, has influence on the quality of the foam in the spraying works. Therefore, it is important that the temperature of the environment and the substrate surface, has to be between 5 °C and 40 °C, otherwise there may be areas with poor compliance, or dimensional changes more than expected. The substrate must be clean and dry and the humidity should be below 80%, because a high humidity can cause density alterations of the final product, and less adhesion to the substrate. Wind speed during the application must not exceed 30 km/h to avoid high consumption of materials; the irregular surface spraying could train particles that can cause serious problems of dirt surrounding the job place. During favorable environmental conditions, the adhesion of the foam, on the commonly used substrate, is excellent, provided they are clean, dry and free of rust.

In all cases, before applying the foam is needed to perform an adhesion small test to ensure good fixation. In applications with high temperature gradients place a vapor barrier on the warm side of insulation system to prevent condensation. Smooth metal surfaces must be protected by an anti-corrosion primer before being covered with foam. On smooth surfaces without pores, galvanized steel, polypropylene, etc., should be primed for better adhesion and union of insulation system.

PRESENTATION FORMATS

Steel drums of 250 kg each component (isocyanate and polyol).

SHELF LIFE

Polyol and isocyanate components have an optimal time established for use in which retain their physical and chemical properties favorable for further processing and obtaining foam which has all its properties. Once this period is ended, it appears a possible destabilization and gradual degradation of all chemical and physical characteristics of the final product will be more pronounced as time elapsed. In proper storage conditions and in original packaging, the optimal period for consumption is 6 months for polyol and 12 months for isocyanate from manufacture's time.

STORAGE REQUIREMENTS

Storage temperature should be between 10 and 25 °C. Containers (full or empty) should not be exposed to direct sunlight or heat sources such as stoves, radiators, etc. because they can generate pressure inside and make dangerous its handling or manipulation.

The components are moisture sensitive, so they must always be kept in airtight containers and be protected against the ingress of moisture, in order to prevent disruptions in the final product or rendering it useless for treatment.

HANDLING AND TRANSPORTATION

These safety recommendations for handling, are necessary for the implementation process as well as in the pre-and post, on exposure to the loading machinery.

- **Respiratory Protection:** When handling or spraying use an air-purifying respirator.
- **Skin protection:** Use rubber gloves, remove immediately after contamination. Wear clean body-covering. Wash thoroughly with soap and water after work and before eating, drinking or smoking.
- **Eye / Face:** Wear safety goggles to prevent splashing and exposure to particles in air.
- **Waste:** Waste generation should be avoided or minimized. Incinerate under controlled conditions in accordance with local laws and national regulations.

For further information on this matter, you may request the safety data sheet of the product.

APPLICATION PROCEDURE

The products should be used with proper adjustment and temperatures pressure hoses and equipment, depending on modifying existing environmental T°, so good reactivity between the two components and their viscosities adaptation to the correct mixture is ensured.

Mix spray equipment, is in ratio 1:1 by volume, by standard projection equipment.

COMPLEMENTARY PRODUCTS

The ACE ECOFOAM-35 system may be complemented with the following products as a means of protection or to improve its physical-mechanical properties depending on its exposure, the desired finish or the type of substrate.

- **EOPRIMER-BV:** This primer, epoxy based, improves bonding and level the surface, and helps regulating the humidity in the substrate (see permitted levels in their technical specifications).
- **ACE ART-7052 HE – ACE PU-100:** polyurea waterproofing systems.
- **ART-373 – ALIFLEX:** dual-component coloured aliphatic polyurethane varnishes used to protect roofs and floors or ground against UV rays when there is no other protection.
- **MONOPUR:** single-component polyurethane membrane. You can use as a waterproofing system or as a UV sunrays protection.

USAGE CONDITIONS

Mix Ratio (Polyol : Isocyanate)	100 : 100 in volume / 100 : 107 in weight
Temperature of the components	30 - 60 °C
Work pressure	60 - 120 Bar
Ambient operating temperature	5 to +40 °C
Air relative humidity	< 80 %
Wind speed	< 30 km/h
Support temperature	5 - 40 °C
Support humidity	Without superficial condensations

INFORMATION RELATIVE TO THE COMPONENTS AND REACTIVITY (at 25 °C)

	POLYOL	ISOCYANATE	Method / Norm
Hydroxyl Value	180 - 220 mg KOH	-	
Water content	3,4 - 3,6 %	-	(ISO-14.897)
Viscosity	320-450 mPas.	180-250 mPas.	
NCO content	-	30-32 %	
Cream time	4 +/-1 seconds		
Rise time	11 +/-1 seconds		
Free density in glass	35 grams/liter		


FOAM PROPERTIES AND CE MARKING

Designated code:	PU EN 14315-1-ccc2-CT3 (20)-TFT18(20)-FRB35(20)-W0,2-MU70-CS(10/Y)200	
Applied density	38 - 42 grams/liter	(UNE EN 1602)
Thermic conductivity	0,029 W/mK in all thickness. See performance chart	(UNE-EN 12.667)
Fire performance	E Class (valid for all thickness)	(UNE-EN 13823:2002)
Resistance to compression	220 - 260	≥200
Short term water absorption	≤ 0,2	
Resistance factor to water vapour diffusion (μ)	≥ 70	
Closed cell content	≥ 70 %	Does not allow water through

PERFORMANCE CHART

Thickness	Declared aged thermal conductivity in W/m-K	Nivel de resistencia Térmica Ro M2K/W
30 mm	0,029	1,05
35 mm	0,029	1,20
40 mm	0,029	1,40
45 mm	0,029	1,55
50 mm	0,029	1,70
55 mm	0,029	1,90
60 mm	0,029	2,10
65 mm	0,029	2,25
70 mm	0,029	2,40
75 mm	0,029	2,60
80 mm	0,029	2,75
85 mm	0,029	2,90
90 mm	0,029	3,10
95 mm	0,029	3,25
100 mm	0,029	3,40
105 mm	0,029	3,60
110 mm	0,029	3,80
115 mm	0,029	4,00
120 mm	0,029	4,20
125 mm	0,029	4,30
130 mm	0,029	4,50
135 mm	0,029	4,65
140 mm	0,029	4,80
145 mm	0,029	5,00
150 mm	0,029	5,20
155 mm	0,029	5,35
160 mm	0,029	5,50
165 mm	0,029	5,70
170 mm	0,029	5,85
175 mm	0,029	6,00
180 mm	0,029	6,20
185 mm	0,029	6,40
190 mm	0,029	6,55
195 mm	0,029	6,70
200 mm	0,029	6,90

IDENTIFYING TAG

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ARTLUX EUROPA SL C/CAMPO SAGRADO 11 GIJÓN 33205 ASTURIAS, ESPAÑA
EN 14315-1:2013 ACE ECOFOAM35 Rigid polyurethane foam system. <u>It does not contain any HFCs</u> for use as ThIB Thermic insulation of buildings.
<p style="text-align: center;">Fire performance: E</p> <p>Thermic resistance and thermal conductivity: Check performance chart</p> <p>Water vapour diffusion: Expressed as a factor of resistance to water vapour transmission (μ): 70</p> <p>Short term water absorption in partial immersion: 0,2 Kg/m²</p> <p>Durability of fire reaction with respect to aging/degradation: The behaviour is not affected with time</p> <p>Durability of thermic resistance with respect to aging/degradation: The determined thermic resistance is declared taking aging into account</p> <p>Durability of compression resistance with respect to aging/degradation: The behaviour is not affected with time</p> <p>Continuous glow: Normalized essay method not available.</p> <p style="text-align: center;"> PU EN 14315-1-ccc2-CT3 (20)- TFT18(20)-FRB35(20)-W0,2-MU70- CS(10/Y)200 </p>

PROPERTIES OF APPLIED FOAM

(ACCORDING DECLARATION OF PERFORMANCES)

DECLARED PERFORMANCES		
ESSENTIAL CHARACTERISTICS	PERFORMANCE	HARMONIZED TECHNICAL SPECIFICATION
Reaction to fire	Euroclasse E	EN 13501-1
Water permeability	Short term water absorption by partial immersion: $\leq 0,2 \text{ kg/m}^2$	EN 1609
Thermic conductivity	0,029 W/mK	UN-EN 12667
Water vapour permeability	Water vapour resistance factor: $\mu=70$	EN 12086
Compressive strength	180-210 kPa	EN 826
Durability of reaction to fire against ageing/degradation	Reaction to fire does not decrease with time	EN 14315-1:2013
Durability of thermal resistance against ageing/degradation	See performance chart	EN 14315 1:2013
Durability of the compressive strength against aging / degradation	Compressive strength not decrease with time	EN 14315 1:2013
Continuous glowing combustion	No harmonized test method available	EN 14315-1:2013

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