Issue date: June-2025
Version: v03

Poliuretan Spray S-OC-008E Isocianato H

DESCRIPTION

A polyurethane system made up of two components – a polyol mixture and an isocianate – that is sprayed in-situ to form low-density open-cell foams for thermal and sound insulation purposes.

Poliuretan Spray S-OC-008E has been formulated using **water as the only foaming agent.**

AENOR N MARK

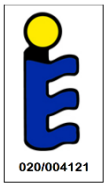
AENOR has certified our **Poliuretan Spray S-OC-008E** spray system with its product-quality N Mark under standard EN 14315-1 as a thermal insulation material for buildings.

Contract No 020/004122 for **Poliuretan Spray S-OC-008E**

KEYMARK

The **Poliuretan Spray S-OC-008E** spray system is CEN KEYMARK SCHEME-certified as a thermal insulation product that is compliant with standard EN 14315-1.

Contract No 020/004121 for **Poliuretan Spray S-OC-008E**



NSAI Agrément

NSAI Agrément certifies that the **Poliuretan Spray S-OC-008E** spray system meets the requirements of the **"Building Regulations 1997 to 2019"** if applied as per the instructions set forth in Certificate 19/0414.

COMPONENTS

COMPONENT A: Poliuretan Spray S-OC-008E

A polyol mixture that contains catalysts and flame-retardants.

COMPONENT B: Isocianato H

Polymeric methylene diphenyl diisocyanate (MDI).

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APPLICATIONS

The **Poliuretan Spray** system is sprayed according to a mixing ratio of 1:1 by volume using high-pressure equipment provided with heating means. Its main application is the improvement of thermal and acoustic insulation in building envelopes, such as: interior walls and pitched roofs, suspended floors, non-walkable attic floors, etc. Once sprayed and cured, it has a density ranging from 7 to 12 g/l and a core density ranging from 7 to 10 g/l; these values are typical for a 200mm coat.

Application advantages:

- Complete suppression of thermal bridges. Since it is continuous, the insulation does not have any joints or cracks.
- Good adhesion to the substrate. No glues or adhesives need to be used for installation.
- Mobility. It can be taken to construction sites in no time, there being no need to haul to or store on the site bulky products as in the case of other insulating materials.
- Sealing of gaps, thus muffling the passage of sound.

TYPICAL CHARACTERISTICS OF THE COMPONENTS

Characteristics	Units	H	Poliuretan Spray S-OC-008E
Specific Weight 20°C	g/cm³	1,23	1,08
Viscosity	cP	200(25°C)	900 (22°C)
Free NCO content	%	31	-

TYPICAL PROCESS VALUES

The specifications of the system were measured in a test vessel at 22°C with the mixing ratio specified in Synthesia Technology's standard (MANS -01) and as per Annex E of product standard EN 14315-1.

A/B mixing ratio: 100/140 by weigth

Characteristics	Units	Poliuretan Spray S-OC-008E
Cream time	s	5
Gel time	s	11
Set-to-touch time	s	14
Free density	g/l	8

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PREPARATION OF THE SUBSTRATE

Surfaces should be clean, dry, and free of dust and grease so that the foam can properly adhere to the substrate; if the substrate is a metal, it should also be free of rusting. In favourable conditions, the **Poliuretan Spray** foam adheres well to most building materials. Nevertheless, should its adhesion prove to be insufficient, a suitable primer should be used.

This system, however, is not guaranteed to adhere to all types of substrates and primers. Consequently, the user should carefully study each specific case.

SPRAYING PROCESS

Prior to loading it in the machine, Component A should be homogenised for 30 minutes using a suitable mechanical stirrer at a high stirring speed. Component A should end up looking completely and homogeneously white, ie without any marbling or streaking. Should the desired appearance not be achieved, the contents of the drum should be stirred with a paddle, from bottom to top, until the product looks right.

Once the product is white through and through, we recommend lowering the stirrer's speed to an intermediate speed and continue stirring the product remaining in the drum throughout the application.

The product will then be ready to be fed to the machine.

If the machine was previously used to spray a product other than Poliuretan Spray S-OC, the hoses will have to be purged and the waste collected in suitable containers. Poliuretan Spray S-OC should not be mixed with any other product, whether it be an open-cell or a closed-cell product.

If the machine is full of Poliuretan Spray S-OC, the product inside the hoses will have to be recirculated inside the drum with the stirring on. The temperature of the hoses and the preheaters should never exceed 30 °C.

If no product is applied with the heated hoses and preheaters after one or more hours, the hoses should be purged of product and the product re-stirred.

The drum of Component A has been designed to be used under such conditions.

The coat thickness can be easily controlled and modified by varying the spray rate and/or the mixing chamber of the gun. The product can be sprayed in one or two coats until the right thickness is achieved. For thicknesses greater than 200 mm, spraying two coats is recommended.

The foam's performance is affected by quite a few factors, which are listed below:

- The atmospheric conditions: ambient/room and substrate-surface temperature and humidity and other environmental factors (wind...).
- The settings of the equipment.
- The correct mixing ratio.
- The type of application: vertical, horizontal, or upside down.
- The application method: coat thickness, use of varnish.

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In order for the foam to have an optimal performance and properties, the application conditions listed in the following table should be taken into account:

		Poliuretan Spray S-OC-008E
SETTINGS OF THE EQUIPMENT		
Component mixing ratio		1:1 by volume
Temperature of the components		20-30°C
Temperature of the hoses and pre-heaters		50-65°C
Static pressure		1500-1800 psi / 100-120 bar
Maximum difference in dynamic pressure between components		290 psi / 20 bar
ENVIRONMENTAL CONDITIONS		
Ambient/room temperature		5-40°C
Wind speed		≤ 30 km/h
SUBSTRATE CONDITIONS		
Temperature		5-40°C
Moisture	Porous substrates	≤ 20 %
	Non-porous substrates	No surface condensation

Please note that, for the same thickness, the smaller the number of coats, the higher the foam's performance. However, it is not advisable to spray coats with thicknesses exceeding 200 mm in order to prevent air pockets from forming and running into problems owing to the strong exothermic characteristics of the reaction and thus for the foam to maintain its properties.

CHARACTERISTICS OF THE FOAM

Characteristics	Standard	Poliuretan Spray S-OC-008E
Thermal resistance and Thermal Conductivity	UNE EN 14315-1:2013 + NB-CPR/SG19-22/213r1 (12/12/2022)	See performance chart
Closed Cells	UNE EN 14315-1:2013	CCC1
Water absorption (Wp)		≤ 5
Water vapour resistance factor (μ)		≥ 2
Dimensional stability [2]		DS(TH)2
Reaction to fire (in naked foam)	EN 13501-1:2019	E[1]

[1] *Test result valid for any thickness sprayed (test conducted with a thickness of 60 mm).*
[2] *Results tested internally; level not declared in the CE marking DoP.*

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Performance chart

Sprayed-on CCC1 insulation foam (uncoated or open to diffusion).

t_p	35	40	45	50	55	60	65	70	75
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	0,90	1,00	1,15	1,30	1,40	1,55	1,70	1,80	1,95
t_p	80	85	90	95	100	105	110	115	120
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	2,05	2,20	2,35	2,45	2,60	2,75	2,85	3,00	3,10
t_p	125	130	135	140	145	150	155	160	165
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	3,25	3,40	3,50	3,65	3,80	3,90	4,05	4,15	4,30
t_p	170	175	180	185	190	195	200	205	210
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	4,45	4,55	4,70	4,85	4,95	5,10	5,20	5,35	5,50
t_p	215	220	225	230	235	240	245	250	255
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	5,60	5,75	5,90	6,00	6,15	6,25	6,40	6,55	6,65
t_p	260	265	270	275	280	285	290	295	300
λ_D	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039
R_D	6,80	6,95	7,05	7,20	7,30	7,45	7,60	7,70	7,85

t_p Thickness of the foam (mm)
λ_D Declared aged thermal conductivity (W/mK)
R_D Thermal resistance level ($m^2 \cdot K/W$)

SAFETY RECOMMENDATIONS

Poliuretan Spray S-OC-008E (Component A) causes skin irritation and severe ocular lesions. In addition, it is detrimental to human health and to the aquatic environment.

Isocianato H (Component B) causes skin, eye and airway irritation. It can also cause irreversible damage to human health by inhalation or through contact with the skin.

When working with the product, the workers should wear complete personal protective gear, including a full face-mask breathing apparatus (which should supply fresh air if working inside confined, unventilated spaces), protective workwear, and safety gloves. Any other workers who are not going to take part in the application of the product should stay clear from the area.

Additionally, forced ventilation is required throughout the application and at least 24h (preferably 48) thereafter. The purpose of mechanically ventilating the work area during and after the application of the product is to help to lower the air concentration of the chemicals released during said application and to keep said work area at a slight negative pressure relative to the surrounding environment in order for said chemicals to be drawn therefrom.

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The forced ventilation system to be used in the work area should be capable of discharging the air directly into the atmosphere at a minimum rate of 0.3 air changes per hour (ACH).

For example, if the volume of the work area is 150 m3, to reach 0.3 ACH, the ventilation system should be able to achieve the following flow rate: 150 m3 x 0.3 ACH = 45 m3/h = 0.75 m3/min. Please note that 0.3 ACH is a minimum ventilation rate most commercially available ventilators can easily achieve. Nevertheless, exceeding this rate is recommended. The higher the ventilation inside the work area, the better.

When handling the system and/or the products, it is advisable to take all safety and precautionary measures described in each product's MSDS.

SUPPLY FORM

Check with the Sales Department the different supply formats.

STORAGE RECOMMENDATIONS

VERY IMPORTANT: The components of the **Poliuretan Spray S-OC-008E** system are sensitive to moisture, so they should be stored in airtight drums or tanks. **The storage temperature should fall within the +5-to-+35°C temperature range**. At lower temperatures, the viscosity of the polyols increases considerably, thereby hindering application. In addition, the isocyanate might crystallise. High temperatures can cause changes in the polyols.

In order for the system to maintain the aforementioned characteristics, the drums should be kept tightly closed when not in use.

Under proper storage conditions, the shelf lives are 6 months for **Poliuretan Spray S-OC-008E** and 9 months for **Isocianato H**

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