

1. PRODUCT DESCRIPTION

EKOPRODUR S0310/E is a two-component system for the production of open-cell, self-extinguishing, semi-rigid polyurethane foam.

| | |
|-----------------------------------|------------------------|
| COMPONENT POLY (polyol mixture) | EKOPRODUR S0310/E POLY |
| COMPONENT ISO (isocyanate) | ISO COMPONENT B 1 |

2. APPLICATION

EKOPRODUR S0310/E is designed to perform internal thermal and acoustic insulation by spraying. It can be used to insulate: roofs, attics, canopies, ceilings, walls in wooden, brick, concrete, steel structures and frame systems. The EKOPRODUR S0310/E system can be applied in residential and commercial construction, in agriculture or industrial areas.

3. COMPONENTS CHARACTERISTIC

POLY INGREDIENT – polyol blend formulation in the form of an oily liquid, without suspensions, colorless or yellow.

ISO COMPONENT – a mixture of aromatic polyisocyanates, mainly diisocyanate diphenylmethane. Brown liquid, without suspensions.

| Parameter | POLY | ISO | Unit |
|-------------------|-------------|-------------|-------------------|
| Density at 20°C | 1,11 ± 0,02 | 1,22 ± 0,02 | g/cm ³ |
| Viscosity at 20°C | 280 ± 100 | 350 ± 100 | mPa·s |

4. FOAMING CHARACTERISTIC IN LABORATORY CONDITIONS

Reaction times and the apparent density of the core were measured in laboratory conditions (at 20°C) with manual foaming in a laboratory vessel - stirrer about 7000 rpm.

| Parameter | Value | Unit |
|---|-----------|-------------------|
| The volumetric ratio of components POLY:ISO | 100 : 100 | |
| Cream time | 4 ± 1 | s |
| Gel time | 11 ± 2 | s |
| Tack free time | 13 ± 3 | s |
| Apparent core density | 8,5 ± 1,5 | kg/m ³ |

5. RECOMMENDED PROCESSING CONDITIONS

EKOPRODUR S0310/E is a system designed for spraying, and should be processed using specialized foaming units equipped with a spray head. Recommendations are based on experience in applying the foam using Graco Reactor H-XP3 machine and a PROBLER P2 ELITE spray gun (mixing chamber 01).

IMPORTANT: Before use, both components should be heated up to 30-40°C. Moreover, the POLY component should be mixed well (approximately 1 hour before application and continue mixing during spraying, with a barrel mixer - recommended Graco Twistork mixer). The POLY component tends to slowly separation.

The ISO component does not require mixing.

| The volumetric ratio of components POLY:ISO | 100 : 100 | |
|---|-----------------------|--------------|
| Recommended machine settings | | |
| Parameter | Value | Unit |
| Heating temperature POLY and ISO | 50 - 60 | °C |
| Heating of the hoses | 50 - 60 | °C |
| Components pressure | 80-110 (1160-1595) | Bar (psi) |
| Components temperature in drums | 30 - 40 | °C |
| Optimal processing conditions | | |
| Ambient temperature | 10 - 35 | °C |
| Recommended surface temperature | 15 - 50 | °C |
| Relative ambient humidity | < 70 | % |
| Humidity porous base | < 15 | % |
| Humidity of non-porous base | 0 | % |

Insulated surfaces should be prepared in advance. They must not contain dust, water, oil, loose fragments and other substances that may reduce the adhesion of the foam.

Before spraying, carefully protect the surfaces of adjacent objects such as windows, doors, floors, furniture, etc., to avoid accidental soiling during spraying – keep in mind that the sprayed foam has very good adhesion and may be difficult to remove later from undesirable places.

Pressure settings for the POLY component and the ISO component should be the same.

Spraying should be done in such a way that the layers obtained are as thick as possible (>100mm).

After application the EKOPRODUR S0310/E system, it is recommended to ventilate the room until the odor disappears. If the ventilation is not adequate, forced air movement should be ensured using dedicated devices. If the foam is exposed to direct UV radiation (e.g., sunlight), it should be protected.

Before starting work with the EKOPRODUR S0310/E system, read the Safety Data Sheets of both components.

6. PROPERTIES OF SPRAYED FOAM

The measurements were carried out on foam cut from samples made using a special spraying machine.

| Parameter | Value | Unit | Standard |
|--|---|-------------------|-------------------------------------|
| Apparent core density | ≥ 7 | kg/m ³ | EN 1602 |
| Flammability class | E | - | EN 13501-1 |
| Flammability class | BS ₁ d ₀ ¹ | - | EN 13501-1 |
| Fire resistance | REI 30 ² | - | EN 13501-2 |
| Short-term water absorption by partial immersion, W_p | ≤ 0.85 | kg/m ³ | EN 1609 |
| Thermal conductivity coefficient $\lambda_{mean, i}$ | 0.037 | W/(m·K) | EN 12667 |
| Thermal conductivity coefficient, $\lambda_{90, 90}$ | 0.038 | W/(m·K) | EN 12667 |
| Aging value, λ_b | 0.038 | W/(m·K) | EN 12667 |
| Compressive stress at 10% relative strain, σ_{10} | ≥ 5 | kPa | EN 826 |
| Diffusion resistance coefficient - water vapor, μ | 3 | - | EN 12086 |
| Dimensional stability: 70°C, 90% rH, after 48 h | DS(70,90)4 | - | EN 1604 |
| Dimensional stability: -20°C, after 48 h | DS(-20,-)4 | - | EN 1604 |
| Adhesion of the foam perpendicularly to the surface | ≥ 20 | kPa | EN 1607 |
| Closed-cell content | ≤ 3 | % | EN ISO 4590 |
| Mold resistance: Growth intensity | 0 | - | CAUP/ETA No. 12.01/21 2007, Annex B |

Full mechanical properties of the foam are achieved after 48 hours of seasoning.

7. PACKAGING

Metal barrels with a capacity of 216 dm³.

8. RECOMMENDED STORAGE CONDITIONS

Both components of the system should be stored in tightly closed containers in dry place at a temperature of 10 - 25°C. Protect against moisture and direct sunlight. Shelf life of the EKOPRODUR S0310/E system stored in original sealed manufacturer's packaging, under recommended conditions, is **3 MONTHS**.

9. REGULATORY AFFAIRS AND CERTIFICATS

- EKOPRODUR S0310/E does not contain any foaming agents that deplete the ozone layer. This is in accordance with the provisions of the European Union (EU) Regulation on Ozone Depleting Substances (ODS Regulation) - No. 1005/2009 dated September, 16th 2009
- Polyurethane system EKOPRODUR S0310/E has been introduced on the market in accordance with the EU Regulation No. 305/2011, together with an assessment of the performance made in accordance with the European harmonized standard EN 14315-1:2013.
- The product has the CE marking and a Declaration of Performance No 04DOP-2019-EN
- The product has a hygienic certificate of the National Institute of Hygiene: BK/B/0429/02/2019
- ADR/RID, IMDG, ICAO/IATA transport regulations do not apply to the transport of this product

10. ADDITIONAL INFORMATION

Data included in this technical information are based on the results of our laboratory tests and practical experience as well. This data does not guarantee the properties of the final product. The results obtained may differ from those listed above especially when the use of the product under the conditions other than originally intended. Hence, we recommend testing performance of the product for specific application at own degree. Foam application and conditions of use are beyond manufacturer control and contractor is responsible for correct selection. Guidelines for use are included in technical Information sheets (TDS) and safety data sheets (SDS). Failing to meet the recommended conditions can have negative impact on the foam application process and its parameters.

IMPORTANT: We are happy to provide technical and substantive assistance in the implementation and use of the EKOPRODUR S0310/E polyurethane system. At the same time, when necessary, we help in adjusting and selecting important parameters. In all matters related to the purchase and use of polyurethane system EKOPRODUR S0310/E, we encourage you to contact our technical and commercial representative directly or by writing to prodex@pcc.eu.

¹ Applies to the layer system of EKOPRODUR S0310/E foam on combustible or non-combustible surfaces, covered with plasterboard lining, on a wooden or metal structure with a 12,5 mm thickness gypsum cardboard, the product manufacturer is responsible for the classification of the product placed on the market.

² Classification of the attic building system in the REI 30 fire resistance class of wooden roofs according to the classification report No. LBO-077-KZ/21