

SECTION 1: PRODUCT DESCRIPTION

EKOPRODUR S0310/E is a two-component system (A+B) designed for the production of open-cell polyurethane foam with a semi-rigid self-extinguishing properties.

COMPONENT A (polyol mixture): EKOPRODUR S0310/E

COMPONENT B (isocyanate): EKOPRODUR B

EKOPRODUR S0310/E is CFC-free. The system is foamed with carbon dioxide (CO₂) produced during the reaction of components A and B.

This polyurethane system has been introduced to 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. This product has CE marking and Declaration of Performance No. 04-2017-EN.

SECTION 2: APPLICATION

EKOPRODUR S0310/E is designed to perform internal thermal and acoustic insulation of roofs, attics, roofing, ceilings, walls in timber structures, brick, steel and skeletal systems of residential, industrial as well as public buildings, hangars and media premises by spraying.

The density of the sprayed foam achieves 8 – 10 kg/m³ depends on the thickness of the layer and quality of the realization.

EKOPRODUR S0310/E is processed with the help of specialized high pressure spraying aggregates, equipped with a spray head.

SECTION 3: COMPONENTS CHARACTERISTICS

COMPONENT A

Formulated polyols mixture in the form of oily liquid, colour yellow to orange, no suspended particles.

Density at 20°C 1.11 ± 0.02 g/cm³

Viscosity at 20°C 280 ± 50 mPa·s

COMPONENT B

Mixture of aromatic polyisocyanates, especially diphenylmethane diisocyanate. Brown liquid without suspension.

Density at 20°C $1.22 \pm 0.02 \text{ g/cm}^3$

Viscosity at 20°C $350 \pm 100 \text{ mPa}\cdot\text{s}$

SECTION 4: FOAMING CHARACTERISTICS IN LABORATORY CONDITIONS

Reaction times¹ as well as apparent core density² were measured under the laboratory conditions (at 20°C).

Cream time¹ $4 \pm 1 \text{ sec.}$

Gel time¹ $10 \pm 2 \text{ sec.}$

Tack Free Time¹ $13 \pm 3 \text{ sec.}$

Apparent core density $9 \pm 1,5 \text{ kg/m}^3$

SECTION 5: RECOMMENDED PROCESSING CONDITIONS

The recommendations are based on experience in applying the foam spray with the machine Graco Reactor H-XP3 with the gun PROBLER P2 ELITE (01 mixing chamber) and Twistork helix mixer.

IMPORTANT: Before the use both, components must be heated to achieve temperature between 30-40°C. Additionally, you should thoroughly mixed the Component A (around 1 h, by Twistork helix mixer from Graco and during spraying). Component A tends to slow delamination.

Component B requires no mixing.

The volumetric ratio of components A : B **100 : 100**

Temperature settings on the machine:

Heating temperature A and B: 50-60°C

Heating the hoses: 50-60°C

Components pressure: 80-110 bar (1160-1595 psi)

Components temperature (in barrels): 30-40°C

¹Reaction times are measured from the beginning of mixing. Cream time – until the moment of rising the reaction mixture’s volume. Gel time – until the moment of drawing out the gelled fibres from the foam. Tack free time – until the moment when the surface of the foam is not sticky. (The procedure according to the internal instructions **U 11 02**).

²Apparent core density - foam weight divided by the cup’s volume (according to EN 1602:2013-07).

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| Ambient temperature: | 10-35°C |
| Recommended surface temperature: | 15-50°C |
| Relative ambient humidity: | 70% |
| Humidity of porous base: | < 15% |
| Humidity of non-porous base: | 0% |

Insulated surfaces should be prepared before, should not contain dust, water, oil, loose particles and other substances that could reduce the adhesion of the foam.

Moreover, insulated surfaces should be properly prepared.

Before performing the spraying, the insulated as well as adjacent surfaces such as windows, doors, floors, furniture, etc., should be protected to prevent accidental contamination during spraying - keep in mind that sprayed foam has very good adhesion and can be difficult to remove from the undesired sites.

Pressure setting for Component A and the Component B should be the same.

Spraying should be performed in such a way that the achieved layers were the thickest (>100mm).

During processing the system please keep in mind all tips and information included in the MSDS sheets for both components.

SECTION 6: PROPERTIES OF SPRAYED FOAM

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

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| Apparent core density: | $\geq 7 \text{ kg/m}^3$ | EN 1602:2013-07 |
| Fire classification: | Bs_1d_0^3 | EN 13501-1+A1:2010 |
| | E | EN 13501-1+A1:2010 |
| Short-term water absorption by partial immersion, $\mathbf{W_p}$ | $\leq 0.85 \text{ kg/m}^2$ | EN 1609:2013 |
| Thermal conductivity: | | EN 12667:2002 |
| $\lambda_{\text{mean}, i}$ | 0.037 W/(m·K) | |
| $\lambda_{90, 90}$ | 0.038 W/(m·K) | |
| Aged value, λ_p | 0.038 W/(m·K) | EN 12667:2002 |
| Compressive stress at 10% | | EN 826:2013-07 |

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| relative deformation, σ_{10} | ≥ 6 kPa | |
| Resistance coefficient of water vapour diffusion, μ | 3 | EN 12086:2013-07 |
| Temperature stability: | | EN 1604:2013-07 |
| 70°C, 90% RH, after 48 h | $d \leq 4\%$ $sz \leq 4\%$ $g \leq 1\%$ | |
| -30°C, after 48 h | $d \leq 2\%$ $sz \leq 2\%$ $g \leq 0.5$ | |
| Adhesion of the foam perpendicularly to the surface: | ≥ 20 kPa | EN 1607:2013-07 |
| Closed-cell content: | $\leq 20\%$ | EN ISO 4590:2005 |

SECTION 7: PACKAGING

Metal drums with a capacity of 200 dm³, IBC with a capacity of 1000 dm³.

SECTION 8: RECOMMENDED STORAGE CONDITIONS

Dry place at 15 - 25°C. Protect from moisture and direct sunlight. Both components should be stored in tightly closed containers. The shelf life in original manufacturer's packaging and stored under normal conditions is **3 MONTHS** from date of manufacture.

SECTION 9: ADDITIONAL INFORMATION

Data included in this technical information are based on the results from the tests performed in our laboratory as well as on the practical experience. These data do not guarantee the properties of the final product. The results obtained may differ from those listed above especially in the case when the use of the product is under the conditions other than originally intended.

IMPORTANT: We are happy to provide technical and substantive assistance in implementing and applying polyurethane system EKOPRODUR S0310/E. At the same time when it is necessary and possible we help in adjusting relevant parameters. In all matters related to the purchase and use of polyurethane system EKOPRODUR S0310/E we encourage you to use a direct contact to our technical and commercial representative or by writing to prodex@pcc.eu.