

1. PRODUCT DESCRIPTION

EKOPRODUR S0540D is a two-component system designed for the production of closed-cell self-extinguishing rigid polyurethane foam.

COMPONENT POLY (polyol mixture)	EKOPRODUR S0540D POLY
COMPONENT ISO (isocyanate)	ISO COMPONENT B 2

2. APPLICATION

EKOPRODUR S0540D is designed to perform external thermal insulation of roofs, foundations and internal thermal insulation of floors (flooring) by spraying.

3. COMPONENTS CHARACTERISTICS

COMPONENT POLY – formulated polyols mixture in the form of oily liquid without suspension, from light red to dark brown depending on the production batch.

COMPONENT ISO – mixture of aromatic polyisocyanates, especially diphenylmethane diisocyanate. Brown liquid without suspension.

Parameter	POLY	ISO	Unit
Density at 20°C	1,17 ± 0,02	1,22 ± 0,02	g/cm ³
Viscosity at 20°C	450 ± 100	350 ± 100	mPa·s

4. FOAMING CHARACTERISTICS IN LABORATORY CONDITIONS

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

Parameter	Value	Unit
The volumetric ratio of components POLY:ISO	100 : 100	
Cream time	5 ± 1	s
Gel time	11 ± 1	s
Tack free time	13 ± 1	s
Apparent core density	58,0 ± 1,5	kg/m ³

5. RECOMMENDED PROCESSING CONDITIONS

EKOPRODUR S0540D is processed with the help of specialized high pressure machine, equipped with a spray head.

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).

The volumetric ratio of components POLY: ISO	100 : 100	
Temperature settings on the machine		
Parameter	Value	Unit
Heating temperature ISO and POLY	35 – 45	°C
Heating the hoses	35 – 45	°C
Components pressure	70 – 110 (1015 – 1595)	Bar (psi)

Optimal processing conditions

Components temperature in barrels	15 – 30	°C
Ambient temperature	10 – 35	°C
Recommended temperature of the surface	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.

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 POLY and the Component ISO should be the same. To achieve proper insulation layer you should do spraying of at least 2-3 uniform spray foam layers so that the total thickness of the insulation is not less than 30 mm. All layers of the insulation should be done during one day. If the foam is exposed to direct UV radiation (e.g. sunlight), it should be protected.

IMPORTANT: Do not exceed the recommended thickness of the layers - maximum thickness is 20 mm.

We recommend that between spraying subsequent insulating layers you wait until the foam stabilizes (layer temperature below 30°C). During processing the system please keep in mind all tips and information included in the MSDS sheets for 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	Norm
Apparent density	≥ 60	kg/m ³	PN-EN 1602
Flammability class	E B _{ROOF} (t ₁)	-	PN-EN 13501-1+A1
	B2	-	DIN 4120
Short-term water absorption by partial immersion, W _P	≤ 0,11	kg/m ²	PN-EN 1609
Thermal conductivity λ _{mean, i}	0,022	W/(m·K)	PN-EN 12667
Thermal conductivity, λ _{90, 90}	0,023	W/(m·K)	PN-EN 12667
Value to aging, λ ₀ for the thickness:		W/(m·K)	PN-EN 12667
d _N < 40 mm	0,029	W/(m·K)	PN-EN 12667
40 mm < d _N < 60 mm	0,028		
d _N > 80 mm	0,027		
Compressive stress at 10% relative deformation, σ ₁₀	≥ 300	kPa	PN-EN 826

Resistance coefficient of water vapour diffusion, μ	165	-	PN-EN 12086
Dimensional stability at defined temperature: 70°C, 90% RH, after 48 h	$l \leq 4$ $w \leq 4$ $t \leq 1$	%	PN-EN 1604
Dimensional stability: -30°C, after 48 h	$l \leq 2$ $w \leq 2$ $t \leq 0,5$	%	PN-EN 1604
Adhesion of the foam perpendicularly to the surface	≥ 400	kPa	PN-EN 1607
Closed-cell content	≥ 90	%	PN-EN ISO 4590
Total relative deformation: 48h, 20 kPa, 80°C	$\leq 0,95$	%	PN-EN 1605

IMPORTANT: We are happy to provide technical and substantive assistance in implementing and applying polyurethane system EKOPRODUR S0540D. 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 S0540D we encourage you to use a direct contact to our technical and commercial representative or by writing to prodex@pcc.eu.

Foam obtains its final properties after 24h conditioning

7. PACKAGING

Metal drums with a capacity 216 dm³, IBC with a capacity a 1000 dm³. It is possible to deliver in other packages agreed with the recipient.

8. RECOMMENDED STORAGE CONDITIONS

Both components should be stored in tightly closed containers in dry rooms with a temperature 15 – 25°C. Protect from moisture and direct sunlight. Shelf life is a **3 MONTHS** for component POLY and **6 MONTHS** for component ISO from the date production for the originally closed packaging, stored under recommended conditions. In the case of special shipments, please contact the appropriate person from the logistic department in order to select the correct packaging (other requirements).

9. REGULATORY AFFAIRS AND CERTIFICATS

- EKOPRODUR S0540D 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
- 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. 10DOP-2019-PL
- Approved by the Polish National Institute of Health, hygienic certificate no: 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 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.