

CROSSIN ROOF



Date of preparation: 01.09.2015

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Version: 2.0

1. PRODUCT DESCRIPTION

CROSSIN ROOF is a two-component (A+B) polyurethane system designed for the production of **closed cell** self-extinguishing rigid polyurethane foam.

-  COMPONENT A: CROSSIN ROOF
-  COMPONENT B: CROSSIN B

CROSSIN ROOF 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. 2016/04/PL.

Hygienic Certificate of National Institute of Public Health - National Institute of Hygiene (PZH): HK/B/1467/01/2015

2. APPLICATION

CROSSIN ROOF is intended for the external, thermal insulation of flat roofs, roofs rich in biases and other types of roofing in buildings including residential and commercial as well as in agricultural and industrial (by spraying).

CROSSIN ROOF is a polyurethane system that must be processed using the special foaming units, equipped with a spray head.

3. COMPONENTS CHARACTERISTICS

COMPONENT A		
Formulated polyols mixture in the form of oily liquid, dark colour, without suspensions		
Density at 25°C	1.14 ± 0.02 g/cm ³	
Viscosity at 25°C	440 ± 100 mPa·s	EN ISO 2555:2011

COMPONENT B		
Mixture of aromatic polyisocyanates, especially diphenylmethane diisocyanate. Brown liquid without suspensions		
Density at 25°C	1.22 ± 0.02 g/cm ³	
Viscosity at 25°C	350 ± 100 mPa·s	EN ISO 2555:2011



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4. FOAMING CHARACTERISTICS DONE AT LABOLATORY CONDITIONS



The reaction times and an apparent density was obtained under laboratory conditions (at 22-25°C) by manual foaming in the cup with a capacity of 660 cm³.

Stirrer speed approx. 2500 rpm, mixing time approx. 2 sec, sample weight 20 g component A and 22 g component B.

 Cream Time ¹ :	5 ± 1 second
 Gel Time ¹ :	12 ± 3 second
 Tack Free time ¹ :	14 ± 4 second
 Apparent foam density ² :	45 ± 4 kg/m ³

5. RECOMMENDED PROCESSING CONDITIONS

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

 Volumetric components ratio:	A : B	100 : 100
 Temperature settings on the machine:		
	Components (A and B) heating temperature:	30 - 40°C
	Heating the hoses:	30 - 40°C
	Components pressure:	70 - 100 Bar (1015 - 1450 psi)
	Components temperature (in drums):	15 – 30°C

The recommended ambient temperature should be in the range between 10 and 35°C. While the recommended surface temperature should be between 15 and 50°C, whereas ambient relative humidity should be not higher than 70%. The porous surface humidity should be not higher than 15% and non-porous surface should be dry (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.

Spraying should be carried out using specialized spray equipment. Before using component A and B should be heated up to 30-40°C.

The temperature of the hoses should be about 30 - 40°C. Pressure setting for Component A and the Component B should be the same, and between 70 - 100 Bar (1015 - 1450 psi).

¹Reaction times are measured since the beginning of mixing. *Start 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 own instructions **IJ 11 02**).

²*Apparent foam density* = foam weight divided by the cup's volume (according to PN-EN 1602:2013-07).



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It is highly recommended to make 2-3 layers of sprayed foam, to obtain an insulated foam with a thickness not less than 30 mm. Moreover, all layers should be done during one day. When the sprayed foam is exposed direct to UV radiation (day light) it should be painted, at least by two layers of protective paint (according to the manufacturer). Allowable wind speed no more than 20km/h.

During processing the system please keep in mind all tips and information included in the MSDS sheets for both components and the recommendations given by the machine manufacturer.

ATTENTION: Do not exceed the thickness of the recommended layer (maximum thickness is 20 mm)!

6. PHISICOMECHANICAL PROPERTIES OF SPRAYED FOAM

The measurements were carried out on the sprayed foam cut from samples made by using a special spraying machine:

Parameters	Results	Standards
Core density:	$\geq 50 \text{ kg/m}^3$	EN 1602:2013-07
Fire classification:	E	EN 14315-1
Resistance to external fire:	B_{ROOF(t1)}	EN 13501-5+A1:2010
Short-term water absorption by partial immersion:	$W_p \leq 11 \text{ kg/m}^2$	EN 14315-1
Thermal conductivity:		
	$\lambda_{\text{mean},i} = 0.022 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
	$\lambda_{90,90} = 0.023 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
Value to aging λ_p for a thickness:		
 $d_N < 40 \text{ mm}$	$0.029 \text{ W/(m}\cdot\text{K)}$	
 $40 \text{ mm} \leq d_N < 60 \text{ mm}$	$0.028 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
 $d_N \geq 60 \text{ mm}$	$0.027 \text{ W/(m}\cdot\text{K)}$	
Compressive strength 10% relative deformation:	$\sigma_{10} \text{ CS}(10\backslash\text{Y})400$	EN 14315-1
Resistance coefficient of water vapour diffusion:	$\mu = \text{MU165}$	EN 14315-1
Temperature stability:		
 70°C, 90% RH, after 48h	$d \leq 4 \%$ $sz \leq 4 \%$ $g \leq 1 \%$	EN 1604:2013
 -30°C, after 48h	$d \leq 2 \%$ $sz \leq 2 \%$ $g \leq 0.5 \%$	EN 1604:2013



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7. INFORMATION ON THE PACKAGING

CROSSIN ROOF system is packed in metal drums with a capacity of 200 dm³ or IBC with a capacity of 1000 dm³.

8. TRANSPORTATION AND STORAGE CONDITIONS

CROSSIN ROOF system should be stored in a dry place, where the temperature is between 5 and 25°C. It should be protect from moisture and direct sunlight. Both components should be stored in tightly closed containers.

Recommended storage time – **3 MONTHS** in the original sealed drums.

After having used a part of the content from the container, the rest should be tightly closed and quickly used.

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.

We are happy to provide technical and substantive assistance in implementing and applying polyurethane system named CROSSIN ROOF. 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 CROSSIN ROOF we encourage you to use a direct contact to our technical and commercial representative.

