


**1. PRODUCT DESCRIPTION**

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

 COMPONENT A: CROSSIN WALL

 COMPONENT B: CROSSIN B

CROSSIN WALL 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. 2016/03/PL.

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

**2. APPLICATION**

CROSSIN WALL is intended for the internal and external thermal insulation of walls, partitions and facades by spraying. It can be successfully used in buildings including residential and commercial as well as in agricultural and industrial.

CROSSIN WALL 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	1.15 ± 0.02 g/cm <sup>3</sup>	
Viscosity at 25°C	430 ± 50 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 <sup>3</sup>	
Viscosity at 25°C	350 ± 100 mPa·s	EN ISO 2555:2011



#### 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 cm<sup>3</sup>.

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

	Cream time <sup>1</sup> :	3 ± 1 sec
	Gel time <sup>1</sup> :	7 ± 3 sec
	Tack Free time <sup>1</sup> :	9 ± 4 sec
	Apparent core density <sup>2</sup> :	36 ± 2 kg/m <sup>3</sup>

#### 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:	<b>A : B</b>	<b>100 : 100</b>
	Temperature settings on the machine:		
	Components (A and B) heating temperature:		35 - 50°C
	Heating the hoses:		35 - 50°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 35 - 50°C. Pressure setting for Component A and the Component B should be the same, and between 70 - 100 Bar (1015 - 1450 psi).

<sup>1</sup>Reaction 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 (this procedure is according to the internal instructions **U 11 02**).

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








To achieve proper insulation there should be at least 2 uniform spray foam layers done. The total thickness of the insulation is not less than 30 mm. All layers of the insulation should be done during one day. When the foam is exposed to direct UV radiation (sunlight) it should be painted by at least two layers of protective paint (according to information provided by paint manufacturer).

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 35 mm)!**

**6. PHYSICOMECHANICAL 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:	$\geq 36 \text{ kg/m}^3$	EN 1602:2013-07
Fire classification:	<b>E</b>	EN 14315-1
Short-term water absorption by partial immersion:	$W_p \leq 0.11 \text{ kg/m}^2$	EN 14315-1
Thermal conductivity:		
	$\lambda_{\text{mean},i} = 0.021 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
	$\lambda_{90,90} = 0.022 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
Value to aging $\lambda_D$ for the thicknesses:		
 $d_N < 40 \text{ mm}$	$0.027 \text{ W/(m}\cdot\text{K)}$	
 $40 \text{ mm} \leq d_N < 60 \text{ mm}$	$0.025 \text{ W/(m}\cdot\text{K)}$	EN 14315-1
 $d_N \geq 60 \text{ mm}$	$0.024 \text{ W/(m}\cdot\text{K)}$	
Compressive strength 10% relative deformation:	$\sigma_{10} \text{ CS}(10\backslash\text{Y})270$	EN 14315-1
Resistance coefficient of water vapour diffusion:	$\mu = \text{MU}35$	EN 14315-1
Temperature stability:		
 $70^\circ\text{C}, 90\% \text{ RH}, \text{ after } 48\text{h}$	$d \leq 4 \%$ $sz \leq 4 \%$ $g \leq 1 \%$	EN 1604:2013
 $-30^\circ\text{C}, \text{ after } 48\text{h}$	$d \leq 2 \%$ $sz \leq 2 \%$ $g \leq 0.5 \%$	EN 1604:2013
Total relative deformation, 48h, 20 kPa, 80°C	$\leq 2.57 \%$	EN 1605:2013
Adhesion of the foam perpendicular to the surface:	$\geq 300 \text{ kPa}$	EN 1607:2013
Closed-cell content:	$\geq 90 \%$	EN ISO 4590:2005
Usage conditions	$-30 - 100^\circ\text{C}$	



#### 7. INFORMATION ON THE PACKAGING

System CROSSIN WALL system is packed in metal drums with a capacity 200 dm<sup>3</sup> or in IBC container with a capacity 1000 dm<sup>3</sup>.

#### 8. TRANSPORTATION AND STORAGE CONDITIONS

CROSSIN WALL system should be stored in a dry place, where the temperature is between 15 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 WALL. 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 WALL we encourage you to use a direct contact to our technical and commercial representative.

