



1. PRODUCT DESCRIPTION

CROSSIN ATTIC SOFT 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: CROSSIN ATTIC SOFT
-  COMPONENT B: CROSSIN B

CROSSIN ATTIC SOFT 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. 2016/01/PL.

Hygienic Certificate of National Institute of Public Health - National Institute of Hygiene (PZH): HK/B/1467/02/2015

2. APPLICATION

CROSSIN ATTIC SOFT is intended to perform internal thermal and acoustic insulation by spraying. It is used for insulation of roofs, attics and various types of roofing, in wood construction, masonry, steel and skeletal systems of residential, industrial, agricultural and public buildings, hangars and media venues.

The density of the sprayed foam achieves 0,5 – 0,6 lb/ft³ depends on the thickness of the layer and quality of the realization.

CROSSIN ATTIC SOFT 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, colour yellow to orange, without suspensions		
Density at 25°C	1.10 ± 0.02 g/cm ³	
Viscosity at 25°C	450 ± 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 ³	
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 20°C) by manual foaming in the cup.

Stirrer speed approx. 2500 rpm, mixing time approx. 4 sec.

	Cream time ¹ :	4 ± 1 sec
	Gel time ¹ :	10 ± 2 sec
	Tack Free time ¹ :	13 ± 3 sec
	Apparent foam density ² :	9 ± 1.5 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:	50 - 60°C	
	Heating the hoses:	50 - 60°C	
	Components pressure:	80 - 110 Bar (1160 - 1595 psi)	
	Components temperature (in drums):	30 – 40°C	

The recommended ambient temperature should be in the range between 10 and 35°C. While the recommended surface temperature should be between 15 to 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.

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). Component A tends to slow delamination.

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 (this procedure is according to the internal instructions **IJ 11 02**).

²Apparent foam density - foam weight divided by the cup's volume





The temperature of the hoses should be about 50 - 60°C. Pressure setting for Component A and the Component B should be the same, and between 80 - 110 Bar (1160 - 1595 psi).

Spraying should be performed in such a way that the achieved layers are as thick as possible (>100 mm). Overall maximum thickness should be not more than 300 mm, and 5 passes to achieve this thickness.

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.

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:	$\geq 7 \text{ kg/m}^3$	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:	$\text{W}_p \leq 0.85 \text{ kg/m}^2$	EN 1609:2013	
Thermal conductivity:		EN 12667:2002	
	$\lambda_{\text{mean},i} = 0.037 \text{ W/(m}\cdot\text{K)}$		
	$\lambda_{90,90} = 0.038 \text{ W/(m}\cdot\text{K)}$		
Value to aging:	$\lambda_D = 0.038 \text{ W/(m}\cdot\text{K)}$	EN 12667:2002	
Compressive strength 10% relative deformation:	$\sigma_{10} \geq 6 \text{ kPa}$	EN 826:2013-07	
Resistance coefficient of water vapour diffusion:	$\mu = 3$	EN 12086:2013-07	
Sound absorption coefficient	$\alpha_w = 0,50$	EN ISO 11654:1999	
Sound absorption class	D	EN ISO 11654:1999	
Temperature stability:			
	 70°C, 90% RH, after 48h	$d \leq 4 \%$	EN 1604:2013
		$sz \leq 4 \%$	
$g \leq 1 \%$			
 -30°C, after 48h	$d \leq 2 \%$	EN 1604:2013	
	$sz \leq 2 \%$		
	$g \leq 0.5 \%$		
Adhesion of the foam perpendicular to the surface:	$\geq 20 \text{ kPa}$	EN 1607:2013	
Closed-cell content:	$\leq 20 \%$	EN ISO 4590:2005	
Susceptibility to mould growth		EN ISO 846:2002	
	<ul style="list-style-type: none"> Method A 	0 – no grow	

³ It relates to a system of layers consisting of foam on flammable or combustible backing, covered with a lining of plasterboard, on the wooden or metal construction (plasterboard thickness 12.5 mm)



7. INFORMATION ABOUT PACKAGING

CROSSIN ATTIC SOFT system is packed in metal drums with a capacity 200 dm³ or in IBC container with a capacity 1000 dm³.

8. TRANSPORTATION AND STORAGE CONDITIONS

CROSSIN ATTIC SOFT 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 ATTIC SOFT. 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 ATTIC SOFT we encourage you to use a direct contact to our technical and commercial representative.

