

# Elastospray® LWP 1672/10

## Low Warming Potential

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Edition 01  
Date 19.12.2018

### Application:

The Elastospray LWP 1672/10 system is a 4<sup>th</sup> generation sprayed (in-situ) **thermal insulation**. This system is particularly formulated to obtain a foam with an applied density between 35 and 42 kg/m<sup>3</sup> and is suitable to be used in walls, ceilings and floors.

#### Intended use: Thermal insulation of buildings

The Elastospray LWP product line is free of ingredients that contribute to global warming due to the greenhouse effect or that deplete the ozone layer.

The spray method can be used in a wide range of applications, including: buildings, refrigerated storerooms, warehouses, tanks, ships, etc. Aside from its excellent properties as an insulation material, this technique has the following advantages:

- Elimination of thermal bridges. The insulation material is continuous, without joints or cracks, even in hard-to-reach places.
- Excellent adhesion to the substrate. The spray foam bonds to most surfaces without the need for glues or mechanical fasteners.
- Speed of application and mobility. The in-situ production allows for quick transport, without the need for moving and storing high-volume materials, typical for other types of insulation materials.
- The spray process is especially suitable for insulating large surfaces, including irregularly shaped surfaces such as undulated roofs.

### Chemical Characteristics:

**Component A: Elastospray LWP 1672/10/\***

\* Reactivity guideline:

\*\* The product is free of ingredients with high global warming potential by greenhouse effect (GWP) affected by the regulation (EU) No 517/2014.

**Component B: IsoPMDI 92140**

Mixture of polyols and additives (Catalysts, Surfactants and blowing agents\*\*). Product does not contain HFCs.

V= Summer, under warm processing conditions (10 to 40°C)  
I= Winter, under cold processing conditions (5 to 30°C)

NOTE: the indicated temperature ranges are recommendations to guide the choice to the most suitable product.

MDI (diphenylmethane diisocyanate)

### Supply:

The type of supply for the components will be decided after consultation with our Sales Office.

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### Storage, Preparation:

Polyurethane components are moisture sensitive. Therefore, they must be stored at all times in sealed, closed containers. The A-component (Polyol) must be homogenised by basic stirring before processing. More detailed information should be obtained from the separate data sheet entitled "Information for in-coming material control, storage, material preparation and waste disposal" and from the component data.

### Possible Hazards:

The B-component (Isocyanate) irritates the eyes, respiratory organs and the skin. Sensitization is possible through inhalation and skin contact. MDI is harmful by inhalation. On processing these, take note of the necessary precautionary measures described in the Material Safety Data Sheets (MSDS). This applies also for the possible dangers in using the A-component (Polyol) as well as any other components.

See also our separate information sheet "Safety- and Precautionary Measures for the Processing of Polyurethane Systems. Use our Training Program "Safe Handling of Isocyanate."

### Waste Disposal:

More detailed information is provided in our country -specific pamphlet.

### Consumer articles, medical products:

There are national and international laws and regulations to consider if it is intended to produce consumer articles (eg articles that necessitate food or skin contact, toys etc.) or medical objects out of BASF products. Where these do not exist, the current legal requirements of the European Union for consumer articles as well as medical products should be sufficient. Consultation with our Sales Office and our Ecology and Product Safety Department is strongly recommended.

### Handling and installation instructions:

See our "Guide for the Application of Elastospray LWP systems".

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Component data (25°C):				
Property	Unit	Comp. A	Comp. B	Method
Viscosity at 25°C	mPa.s	280	220	G133-07*
Density at 25°C	g/cm <sup>3</sup>	1,18	1,23	G133-08*
OH Value	mgKOH/g	260	-	G133-01*
NCO Content	%, weight	-	31,5	G133-06*
Shelf Life	Months	2	6	

\* BASF methods

Reaction Profile and Free Rise Density: (components at 20 ± 2 °C and the indicated mixing ratio)				
Property	Unit	Elastospray LWP 1672/10/V	Elastospray LWP 1672/10/I	Method
Mixing ratio (weight)		100:104	100:104	G132-01*
Cream Time (CT)	s	4	4	G132-01*
Gel time (GT)	s	8	7	G132-01*
Tack Free Time (TFT)	s	10	9	G132-01*
Beaker Free Rise Density (FRB)	kg/m <sup>3</sup>	33,0	33,0	G132-01*

\* BASF method in accordance with the method described in standard EN 14315-1

### Suitable substrates:

Under favorable weather conditions, the rigid spray polyurethane foam Elastospray LWP has a good adhesion to most constructions materials (concrete, brick, wood, steel). They must be clean (without dust or grease), dry and, in case of metallic substrates, free of rust. If the adhesion is not acceptable under these conditions, a previous treatment like a primer may be necessary.

Nevertheless, due to the wide range of substrates and primers used in construction, it is not possible to guarantee perfect adhesion of this system to all surfaces. It is therefore recommended to test adhesion in each case.

See our "Guide for the application of Elastospray LWP Systems" for more detailed information about the general installation process and the suitable substrates.

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### Process:

The spraying process consists of projecting a pulverized mixture of the two components onto surface which is meant to be insulated. The mixture reacts on the surface, adhering to it instantaneously, and expands into rigid foam.

The following conditions should be observed for the correct application of the system:

	Elastospray LWP 1672/10/V	Elastospray LWP 1672/10/I
<b>Machine Conditions</b>		
Mixing Ratio of Components:	1:1 (volume)	
Component Temperatures:	30 – 50 °C	
Component Pressure:	60 – 110 Bar	
<b>Environmental Conditions</b>		
Ambient Temperature:	Between +10 and +40 °C	Between +5 and +30 °C
Relative Humidity:	< 85 %	
Wind speed:	≤ 30 km/h	
<b>Substrate Conditions</b>		
Substrate Temperature:	Between +10 and +40 °C	Between +5 and +30 °C
Substrate Humidity:	Porous substrates	≤ 20 %
	Nonporous substrates	Without condensations on substrate

The thickness of each applied layer should be between 1,5 and 4 cm. In order to maintain an adequate dimensional stability, it is not recommended to apply thicker layers.

**IMPORTANT:** When applying thicker layers (3 – 4 cm), it is very important to wait a minimum of 10 minutes between passes in order to give the foam enough time to release the heat coming from the exothermic reaction, otherwise it can occur delamination.

The distance from the spray gun to the substrate is recommended to be approx. 80 cm.

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### CE Marking:



**0679**  
**1168**  
**1722**

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**18**

DoP-No.: **ES19-0017-01-CPR-18**

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#### **EN 14315-1:2013 + NB-CPR/SG19-17/167r2 (24/01/2018)**

In-situ formed sprayed rigid polyurethane (PU) foam system

ThIB – Thermal Insulation for Buildings

Reaction to fire – **E (valid for all thicknesses)**

Thermal conductivity: **see performance chart**

Water permeability (expressed as short term water absorption by partial immersion): **max. 0,20 kg/m<sup>2</sup>**

Water vapour transmission (expressed as water vapour resistance factor  $\mu$ ): **70**

Compressive strength: **min. 200 kPa**

Continuous glowing combustion: **no harmonized test method available**

Durability of reaction to fire against ageing/degradation: **reaction to fire does not decrease with time**

Durability of thermal resistance against ageing/degradation: **see performance chart**

Durability of compressive strength against ageing/degradation: **compressive strength does not decrease with time**

#### **Designation code:**

Elastospray LWP 1672/10/I: **PU EN 14315-1-CCC4-CT4(20)-GT7(20)-TFT9(20)-FRB33(20)-W0,2-CS(10/Y)200-DLT(2)5-MU70-A3**

Elastospray LWP 1672/10/V: **PU EN 14315-1-CCC4-CT4(20)-GT8(20)-TFT10(20)-FRB33(20)-W0,2-CS(10/Y)200-DLT(2)5-MU70-A3**

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**Performance Chart:**  
(in accordance with EN 14315-1):

Type of facing: None or diffusion open		
Thickness	Declared aged thermal conductivity ( $\lambda_D$ ) W/m·K	Thermal resistance level ( $R_D$ ) m <sup>2</sup> ·K/W
30 mm	<b>0,028</b>	<b>1,10</b>
35 mm	<b>0,028</b>	<b>1,25</b>
40 mm	<b>0,028</b>	<b>1,45</b>
45 mm	<b>0,028</b>	<b>1,65</b>
50 mm	<b>0,028</b>	<b>1,80</b>
55 mm	<b>0,028</b>	<b>2,00</b>
60 mm	<b>0,028</b>	<b>2,20</b>
65 mm	<b>0,028</b>	<b>2,35</b>
70 mm	<b>0,028</b>	<b>2,55</b>
75 mm	<b>0,028</b>	<b>2,75</b>
80 mm	<b>0,026</b>	<b>3,05</b>
85 mm	<b>0,026</b>	<b>3,25</b>
90 mm	<b>0,026</b>	<b>3,45</b>
95 mm	<b>0,026</b>	<b>3,65</b>
100 mm	<b>0,026</b>	<b>3,85</b>
105 mm	<b>0,026</b>	<b>4,00</b>
110 mm	<b>0,026</b>	<b>4,20</b>
115 mm	<b>0,026</b>	<b>4,40</b>

Type of facing: None or diffusion open		
Thickness	Declared aged thermal conductivity ( $\lambda_D$ ) W/m·K	Thermal resistance level ( $R_D$ ) m <sup>2</sup> ·K/W
120 mm	<b>0,025</b>	<b>4,80</b>
125 mm	<b>0,025</b>	<b>5,00</b>
130 mm	<b>0,025</b>	<b>5,20</b>
135 mm	<b>0,025</b>	<b>5,40</b>
140 mm	<b>0,025</b>	<b>5,60</b>
145 mm	<b>0,025</b>	<b>5,80</b>
150 mm	<b>0,025</b>	<b>6,00</b>
155 mm	<b>0,025</b>	<b>6,20</b>
160 mm	<b>0,025</b>	<b>6,40</b>
165 mm	<b>0,025</b>	<b>6,60</b>
170 mm	<b>0,025</b>	<b>6,80</b>
175 mm	<b>0,025</b>	<b>7,00</b>
180 mm	<b>0,025</b>	<b>7,20</b>
185 mm	<b>0,025</b>	<b>7,40</b>
190 mm	<b>0,025</b>	<b>7,60</b>
195 mm	<b>0,025</b>	<b>7,80</b>
200 mm	<b>0,025</b>	<b>8,00</b>

Declared aged thermal conductivity value ( $\lambda_D$ ) at 10 °C calculated with statistical procedure 90/90 and rounded upwards to the nearest 0,001 W/m·K.

Thermal resistance value ( $R_D$ ) calculated with aged thermal conductivity at 10 °C and rounded downwards to the nearest 0,05 m<sup>2</sup> K / W.

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Foam Physical Properties declared in the CE Marking:			
Property	Elastospray LWP 1672/10	Unit	Standard
Short term water absorption by partial immersion	≤ 0,20	kg/m <sup>2</sup>	EN 1609
Water vapour resistance factor (μ)	≥ 70	-	EN 12086
Closed cells content	≥ 90	%	ISO 4590
Substrate adhesion strength perpendicular to faces	> 100	kPa	EN 14315-1
Compression strength (10% deformation)	≥ 200	kPa	EN 826
Deformation under load and temperature Load Temperature Total thickness reduction Test duration	40 70 ± 1 ≤ 5,0 168 ± 1	kPa °C % h	EN 1605
Thermal conductivity at 10°C Aged value	See Performance Chart	W/(m·K)	EN 14315-1
Reaction to Fire (naked foam)	Class E (valid for all thicknesses)	-	EN 13501-1

### Complementary Information:

- Guide for the application of Elastospray LWP Systems.

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The information provided here is consistent with the current state of our technical knowledge and experience and replaces the information contained in previous versions. Because of the multitude of influences in the processing and application of our products they do not release the buyers of our products from implementing their own tests and trials. The information merely serves as general information and does in no way constitute a guarantee of any specific product conditions or properties (product specification). The details do not describe the suitability of the product for specific applications and purposes. Information regarding quality and useful life or other features do not represent guarantees. Any existing commercial rights and existing laws and regulations must be observed under the responsibility of the recipient of our products. Please contact our headquarters or our sales outlet with regard to the availability of products.

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