Technical Data Sheet

We create chemistry

Elastospray® LWP 1672/1
Low **W**arming **P**otential

Edition 02
Date 31.01.2018

Application:

The Elastospray LWP 1672/1 system is a 4th 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^3 and is suitable to be used in walls, ceilings and floors. Emphasizes the application on façades where, besides the thermal insulation, it performs the function of **waterproofing**.

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 Elastospray LWP 1672/1 system uses as blowing agent a Hydrofluoro-olefine (HFO) with ultra-low global warming potential by greenhouse effect (GWP_{100} = 1) and low thermal conductivity value. The permanent nature of this blowing agent confers the product high thermal insulating properties.

Aside from its excellent properties as an insulation material, this system has following advantages:

- Insulation and waterproofing in one step.
- Excellent water tightness throughout his life.
- High resistance to cracking.
- Excellent adhesion to the substrate. The spray foam bonds to most surfaces without the need for glues or mechanical fasteners.
- Air tightness.

Chemical Characteristics:

Component A:	**Elastospray LWP 1672/1/***	Mixture of polyols and additives (Catalysts, Surfactants and blowing agents**). Product does not contain HFCs.
	* Reactivity guideline:	V= Summer, under warm processing conditions (10 to 40ºC) I= Winter, under cold processing conditions (5 to 30ºC) NOTE: the indicated temperature ranges are recommendations to guide the choice to the most suitable product.
	** The product is free of ingedients with high global warming potential by greenhouse effect (GWP) affected by the regulation (EU) No 517/2014.	
Component B:	**IsoPMDI 92140**	MDI (diphenylmethane diisocyanate)

DAU Certification:

Elastospray LWP 1672/1 is certified by the technical approval **DAU 17/104** for in-situ applied two component polyurethane spray foam systems used for insulation purposes achieving good waterproofing contribution.

Additional to its excellent insulation properties, the approval certifies that Elastospray LWP 1672/1 is an efficient barrier against water filtrations.

For more info please visit the web site:
http://itec.es/certificacion/dau/files/17/104

Supply:

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

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”.

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

* BASF methods

Reaction Profile and Free Rise Density: (components at 20 ± 2 ºC and the indicated mixing ratio)				
Property	**Unit**	**Elastospray LWP 1672/1/V**	**Elastospray LWP 1672/1/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^3	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.

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 1672/1/V	Elastospray LWP 1672/1/I
Machine Conditions			
Mixing Ratio of Components:		1:1 (volume)	
Component Temperatures:		30 – 50 ºC	
Component Pressure:		60 – 110 Bar	
Environmental Conditions			
Ambient Temperature:		Between +10 and +40 ºC	Between +5 and +30 ºC
Relative Humidity:		< 85 %	
Wind speed:		≤ 30 km/h	
Substrate Conditions			
Substrate Temperature:		Between +10 and +40 ºC	Between +5 and +30 ºC
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 ticker 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.

CE Marking:

CE

0751

0370
1722

BASF Española S.L.	**BASF Nederland B.V.**	**BASF France SAS**
Calle Verdi, 38-38, E-08191 Rubí (Barcelona), Spain	Hemelrijk 11-13, 5281 PS Boxtel, Netherlands	Z.I. Rue Decauville, 77292 Mitry-Mory Cedex (Paris), France
17	**17**	**17**
DoP-No.: **ES19-0013-03-CPR-17**	DoP-No.: **NL17-0015-02-CPR-17**	DoP-No.: **FR17-0008-02-CPR-17**
www.elastospray.eu/dop	www.elastospray.eu/dop	www.elastospray.eu/dop

EN 14315-1:2013

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/m²**

Water vapour transmission (expressed as water vapour resistance factor μ): **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 1672/1/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 1672/1/V: **PU EN 14315-1-CCC4-CT4(20)-GT7(20)-TFT9(20)-FRB33(20)-W0,2-CS(10/Y)200-DLT(2)5-MU70-A3**

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

Type of facing: None or diffusion open		
Thickness	**Declared aged thermal conductivity (λ_D)** W/m·K	**Thermal resistance level (R_D)** m^2·K/W
30 mm	**0,028**	**1,05**
35 mm	**0,028**	**1,25**
40 mm	**0,028**	**1,45**
45 mm	**0,028**	**1,60**
50 mm	**0,028**	**1,80**
55 mm	**0,028**	**2,00**
60 mm	**0,028**	**2,15**
65 mm	**0,028**	**2,35**
70 mm	**0,028**	**2,55**
75 mm	**0,028**	**2,70**
80 mm	**0,028**	**2,90**
85 mm	**0,028**	**3,10**
90 mm	**0,028**	**3,25**
95 mm	**0,028**	**3,45**
100 mm	**0,028**	**3,65**
105 mm	**0,028**	**3,80**
110 mm	**0,028**	**4,00**
115 mm	**0,028**	**4,20**

Type of facing: None or diffusion open		
Thickness	**Declared aged thermal conductivity (λ_D)** W/m·K	**Thermal resistance level (R_D)** m^2·K/W
120 mm	**0,028**	**4,35**
125 mm	**0,028**	**4,55**
130 mm	**0,028**	**4,75**
135 mm	**0,028**	**4,90**
140 mm	**0,028**	**5,10**
145 mm	**0,028**	**5,30**
150 mm	**0,028**	**5,45**
155 mm	**0,028**	**5,65**
160 mm	**0,028**	**5,85**
165 mm	**0,028**	**6,00**
170 mm	**0,028**	**6,20**
175 mm	**0,028**	**6,40**
180 mm	**0,028**	**6,55**
185 mm	**0,028**	**6,75**
190 mm	**0,028**	**6,95**
195 mm	**0,028**	**7,10**
200 mm	**0,028**	**7,30**

Declared aged thermal conductivity value (λ_D) at 10 ºC 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^2 K / W.

Foam Physical Properties declared in the CE Marking:			
Property	**Elastospray LWP 1672/1**	**Unit**	**Standard**
Short term water absorption by partial immersion	≤ 0,20	kg/m^2	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 ºC % h	EN 1605
Thermal conductivity at 10ºC 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

Additional Foam Physical Properties declared under DAU 17/104:			
Property	**Elastospray LWP 1672/1**	**Unit**	**Standard**
Long-term water absorption Total immersion Partial immersion	 < 2 < 0,20	 % vol. kg/m^2	 EN 12087-1B EN 12087-2B
Water tightness Resistance test to rain water (*) Column water test (60 kPa)	 1800_A No water infiltration	 Pa -	 EN 12865 EN 1928
Fatigue resistance 500 cycles (± 1 mm)	No cracking	-	EOTA TR008
Reaction to Fire (foam protected with render) (**)	Class B-s2, d0 (valid until 7 cm. of spray polyurethane foam)	-	EN 13501-1

(*) Test machine was stopped at maximum pressure (1800 Pa) without water infiltration. This pressure is equivalent to a wind speed of 200 km/h.

(**) BASF's fire protection solution consists of a spray foam insulation combined with 5 mm of the A97087 render system. To obtain maximum adhesion, between the render and the foam, the primer A97088 must be applied.

Complementary Information:

- **Guide for the application of Elastospray LWP Systems.**

Contact points:

BASF Española S.L.

Legal address: Can Ràbia 3-5, E-08017 Barcelona, Spain
Factory address: Verdi 36-38, E-08191 Rubí (Barcelona), Spain

Tel,: +34 93 6806100
Fax: +34 93 6806200
Mail: pu-iberia@basf,com
Internet: www.pu.basf.eu/es

BASF Nederland B.V.

Legal address: Groningensingel 1, 6835 EA Arnhem, Netherlands
Factory address: Hemelrijk 11-13, 5281 PS Boxtel, Netherlands

Tel,: +31 411 615615
Fax: +31 411 615616
Mail: pu-nl@basf,com
Internet: www.pu.basf.eu/nl

BASF France SAS

Legal address: 49 Avenue Georges Pompidou, 92593 Levallois-Perret Cedex, France
Factory address: Z.I. Rue Decauville, 77292 Mitry-Mory Cedex (Paris), France

Tel,: +33 (0) 1 60214249
Fax: +33 (0) 1 60214248
Mail: pu-fr@basf,com
Internet: www.pu.basf.eu/fr