

## ENERTITE® OS 500

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### Application:

The system **ENERTITE OS 500** is a water blown in-situ sprayed polyurethane foam used for thermal insulation of buildings. This system is particularly formulated to obtain a foam with an applied density between 25 and 35 kg/m<sup>3</sup> and is suitable to be used in walls and ceilings in interior applications.

ATTENTION: The product is NOT suitable for its use on ventilated facades or other applications on the outside where there may be direct contact with rainwater and in those applications that may be subject to loads such as terraces, walkable roofs or floors.

Due to the higher water vapor permeability of this product, there is a greater risk of interstitial condensations than in closed cell systems, therefore it is necessary to carry out the corresponding hygrometric calculations for each construction solution with the local environmental conditions to see if the installation of a vapor barrier is necessary.

Likewise, **ENERTITE OS 500** foam cannot be considered, on its own, a barrier with high resistance to water filtration, so the application of additional water penetration protection measures, such as water-repellent mortars or other coatings, should be evaluated, according to the level of waterproofing required.

**Intended use: Thermal insulation of buildings**

### Chemical Characteristics:

**A Component: ENERTITE OS 500**

Mixtures of polyols and additives. Product does not contain halogenated blowing agents (100% water blown).

**B Component: IsoPMDI 92140**

MDI (diphenylmethane diisocyanate).

### 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 always be stored in sealed, closed containers. More detailed information should be obtained from the separate data sheet entitled "Information for incoming material control, storage, material preparation and waste disposal" and from the component data.

The A component (Polyol) must be homogenised by basic (mechanical) stirring before processing.

### 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 instruction:

See our "Guide for the Application of Elastospray LWP, SKYTITE LWP and ENERTITE systems".

## Component data (25 °C):

The following data have been obtained at a temperature of 25 °C and they are typical values:

Property	Unit	A Component (Polyol)	B Component (Isocyanate)	Method
Viscosity at 25°C	mPa.s	480	220	G133-07*
Density at 25°C	g/cm <sup>3</sup>	1,14	1,23	G133-08*
OH number	mgKOH/g	175	-	G133-01*
NCO content	%, peso	-	31,5	G133-06*
Shelf Life	days	90	180	

\* BASF Methods

## Reaction profile and Free Rise Density: (components at 20 ± 2 °C and the indicated mixing ratio)

Property	Unit	ENERTITE OS 500	Method
Mixing ratio (in weight)		100:107	G132-01*
Cream Time (CT)	s	4	G132-01*
Gel Time (GT)	s	7	G132-01*
Tack Free Time (TFT)	s	9	G132-01*
Beaker Free Rise Density (FRB)	kg/m <sup>3</sup>	27,0	G132-01*

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

## 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:

<b>ENERTITE OS 500</b>	
<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 5 and 40 °C
Relative Humidity:	< 85 %
Wind speed:	≤ 15 km/h
<b>Substrate Conditions</b>	
Substrate Temperature:	Between 5 and 40 °C
Substrate Humidity:      Porous substrates	≤ 20 %
Nonporous substrates	Without condensations on the superficial of the substrate

The thickness of each applied layer should be between 2 and 10 cm.

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

## Suitable substrates:

Under favorable weather conditions, the rigid spray polyurethane foam ENERTITE has a good adhesion to most construction 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, SKYTITE LWP and ENERTITE systems" for more detailed information about the general installation process and the suitable substrates.

**CE Marking:**



**0370  
1722**

**BASF Española S.L.**

Calle Verdi, 38-38, E-08191 Rubí (Barcelona), Spain

**19**

DoP-No.: **ES19-0019-01-CPR-19**  
www.elastospray.eu/dop

**BASF Nederland B.V.**

Hemelrijk 11-13, 5281 PS Boxtel, Netherlands

**19**

DoP-No.: **NL17-0020-01-CPR-19**  
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. 0,60 kg/m<sup>2</sup>**

Water vapour transmission (expressed as water vapour resistance factor  $\mu$ ): **20**

Compressive strength: **NPD**

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:**

**PU EN 14315-1-CCC1-CT4(20)-GT7(20)-TFT9(20)-FRB27(20)-W0,6-MU20**

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

Type of facing: None or open diffusion		
Thickness	Declared aged thermal conductivity ( $\lambda_D$ ) W/m·K	Thermal resistance level ( $R_D$ ) m <sup>2</sup> ·K/W
30 mm	<b>0,033</b>	<b>0,90</b>
35 mm	<b>0,033</b>	<b>1,05</b>
40 mm	<b>0,033</b>	<b>1,20</b>
45 mm	<b>0,033</b>	<b>1,35</b>
50 mm	<b>0,033</b>	<b>1,50</b>
55 mm	<b>0,033</b>	<b>1,65</b>
60 mm	<b>0,033</b>	<b>1,80</b>
65 mm	<b>0,033</b>	<b>1,95</b>
70 mm	<b>0,033</b>	<b>2,10</b>
75 mm	<b>0,033</b>	<b>2,25</b>
80 mm	<b>0,033</b>	<b>2,40</b>
85 mm	<b>0,033</b>	<b>2,55</b>
90 mm	<b>0,033</b>	<b>2,70</b>
95 mm	<b>0,033</b>	<b>2,85</b>
100 mm	<b>0,033</b>	<b>3,00</b>
105 mm	<b>0,033</b>	<b>3,15</b>
110 mm	<b>0,033</b>	<b>3,30</b>
115 mm	<b>0,033</b>	<b>3,45</b>

Type of facing: None or open diffusion		
Thickness	Declared aged thermal conductivity ( $\lambda_D$ ) W/m·K	Thermal resistance level ( $R_D$ ) m <sup>2</sup> ·K/W
120 mm	<b>0,033</b>	<b>3,60</b>
125 mm	<b>0,033</b>	<b>3,75</b>
130 mm	<b>0,033</b>	<b>3,90</b>
135 mm	<b>0,033</b>	<b>4,05</b>
140 mm	<b>0,033</b>	<b>4,20</b>
145 mm	<b>0,033</b>	<b>4,20</b>
150 mm	<b>0,033</b>	<b>4,55</b>
155 mm	<b>0,033</b>	<b>4,70</b>
160 mm	<b>0,033</b>	<b>4,85</b>
165 mm	<b>0,033</b>	<b>5,00</b>
170 mm	<b>0,033</b>	<b>5,15</b>
175 mm	<b>0,033</b>	<b>5,30</b>
180 mm	<b>0,033</b>	<b>5,45</b>
185 mm	<b>0,033</b>	<b>5,60</b>
190 mm	<b>0,033</b>	<b>5,75</b>
195 mm	<b>0,033</b>	<b>5,90</b>
200 mm	<b>0,033</b>	<b>6,05</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.

## Foam Physical Properties declared in the CE Marking:

The expansion of the foam is made by means of CO<sub>2</sub> action (coming from the chemical reaction of the water with the isocyanate).

Property	ENERTITE OS 500	Unit	Standard
Short term water absorption by partial immersion	≤ 0,60	kg/m <sup>2</sup>	EN 1609
Water vapour resistance factor (μ)	≥ 20	-	EN 12086
Closed cells content	< 20 (CCC1)	%	ISO 4590
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, SKYTITE LWP and ENERTITE systems.

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## 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](mailto:pu-iberia@basf.com)  
Internet: [www.pu.basf.eu/es](http://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](mailto:pu-nl@basf.com)  
Internet: [www.pu.basf.eu/nl](http://www.pu.basf.eu/nl)