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POLYURETHANE SYSTEMS
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ISO 9001:2008

CE

V-Pur S-86L

Technical Data Sheet

V-PUR S-86L

Polyurethane Spray Foam System certified according to EN14315-1

Description

Two component, fast curing Polyurethane Spray Foam System (SPF) suitable for in-situ thermal insulation.
The system has been certified according to EN 14315-1.

Chemical Characteristics

Polyol (A-Component): V-Pur S-86L
Isocyanate (B-Component): V-Iso M 200 (MDI)

Application Fields

- External and internal insulation of residential or industrial buildings
- Flat roof insulation
- Pitched roof insulation
- Floor insulation
- Insulation of tanks, fridges, farming installations and storages

Advantages

- 100% adhesion on insulation surface
- Easily applied on vertical surfaces
- Ideally suitable for curved or specially designed surfaces
- Fast installation
- No thermal bridges
- Adverse weather conditions tolerant
- No joints

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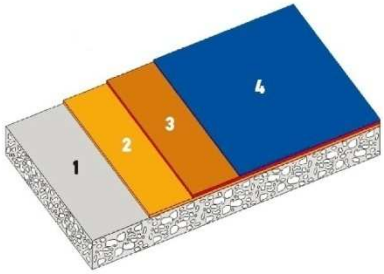
- Eliminates leakage
- High mechanical resistance
- Walkable



Application

The system

1. surface preparation
2. V-Primer (optional)
3. V-Pur S-86L
4. UV protection : polyurea systems V-Coat H-3000 or P-5000 (optional)

Stage 1: Surface Preparation

➢ The surface should be clean, dry, dust free with no foreign particles that can reduce the adhesion.

Surface requirements

Tensile strength	min: 1.5 N/mm^2
Moisture	max: 4%
Ambient temperature	15°C - 35°C
Substrate temperature	> 15°C
Moisture	Upcoming moisture should not be present

Stage 2: V-Primer

➢ On unsound surfaces priming is necessary. Please choose the appropriate type, depending on the surface, of **V-Primer** from VIOPOL's range.

Cement Substrate

Primer	**V-Primer 4435**
Tools	Roller or brush or spray gun
Application	Directly applied on clean dry surface > 4hr < 24hr
Consumption	0,150 – 0,200 kg/m² (depending on the condition and the type of surface)

V-Pur S-86L

Stage 3: V-Pur S-86L

Thickness	4 - 20 cm
Machine	High Pressure unit Reactor from Graco
Layer Thickness	One layer of V-Pur S-86L should have 10mm thickness. Specified thickness is achieved by applying single layers repeatedly.
Recoat time	Immediately
Consumption	0,500kg/m²/cm (theoretical depends largely on temperatures, weather and environmental conditions etc)

Curing

System	Walkable	Mechanical Stress	Final Curing
V-Pur S-86L	15 – 20min.	2 – 3 days	4 – 5 days

(depends on temperatures and environmental conditions)

Stage 4: UV protection using polyurea systems V-Coat H-3000 or P-5000 (optional)

- Covered surfaces with **V-Pur S-86L** left exposed to UV radiation is necessary to be protected by using either polyurea system **V-Coat H-3000 or P-5000**.

Component Data

	Unit	Polyol	Iso	Method
Density (20 °C)	g/cm³	1,16	1,23	TEST_INSTR_01
Viscosity (20 °C)	mPa.s	350	300	TEST_INSTR_01
Storage stability (20 – 25 °C)	months	3	6	

Processing Data

Before application the polyol should be stirred well for 10 – 15 minutes in its drums until homogenized using the appropriate stirrer. Isocyanate does not need stirring.

The two component polyurethane system **V-Pur S-86L** has very short reaction times and can only be applied using appropriate high pressure units such as Reactors with Fusion Guns from Graco.

V-Pur S-86L

	Units	Values	
Mixing ratio	Part by weight	100 : 105 (Polyol : Isocyanate)	
	Parts by volume	100:100 (Polyol : Isocyanate)	
Application temperature: Component A Component B	 °C °C	 45 - 50 45 - 50	
Application Pressure: Component A Component B	 Bar / psi Bar / psi	 100 / 1500 100 / 1500	

Physical Properties

	Value	Unit	Method
Density	45-50	Kg/m^3	EN 1602
Compressive strength	285	kPa	EN 826
Thermal Conductivity (initial) λ_{10}	0,021	W/mK	EN 12667
Thermal Conductivity (aged) λ_{10}	See performance charts (Annex)		
Closed cell content	97	%	EN ISO 4590
Flammability	E	Euroclass	EN ISO 11925-2

As application parameters are beyond our full control, these values are given only as a guide and must be verified in each individual case on finished parts manufactured under the processor's production conditions.

V-Pur S-86L

Storage, Preparation

Polyurethane components are moisture sensitive. Therefore they must be stored at all times in sealed, closed drums. 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.

Storage Conditions / Shelf life: the optimal preservation of the material obtained when stored in a dry room at a temperature of 15 ° C to 20 ° C and in original, unopened, sealed package. At a temperature below 10°C crystals may be formed (isocyanate B-component). Shelf life of polyol is 3 months and 6 months for isocyanate.

Possible Hazards

The MDI, B-component (Isocyanate), irritates the eyes, respiratory organs and the skin. Sensitisation 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 (MSDSs). 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 Programme "Safe Handling of Isocyanate". Use the Training Programme "Walk the Talk – MDI Users".

Waste Disposal

Fully reacted material is physiologically non-hazardous and can be disposed according to national regulations.

- Any other residual material must be treated in accordance with the legal regulations

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 VIOPOL's 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 the VIOPOL's Sales Office.

V-Pur S-86L

Important Notes

The applicator should have sufficient knowledge and experience in order to process the system in a safe and responsible manner

- In case of any form of insecurity the applicator must contact VIOPOL
- The above systems is only for professional use

Safety Regulations

- Read thoroughly the safety data sheets before starting any application of product
- Avoid skin contact
- During application wear sufficient protective clothing such as safety glasses, shoes, gloves and, if necessary, ear protection
- If there is insufficient ventilation, use a separate independent air supply
- Ensure that the working area is clean and that there is a safe escape route

Information

The following publications are available on request:

- Safety Data Sheets

V-Pur S-86L

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16

EN 14315-1

V-PUR S-86L

Sprayed PU foam, intended to be used in building thermal insulation
Reaction to fire – E
Thermal conductivity : See performance charts

PU EN 14315-1: CCC4- CS(10/Y)200 - CT5(20) – GT10(20) – TFT15(20) – FRC30

V-Pur S-86L

ANNEX

TABLE A.1: Performance chart for diffusion tight faces

Thickness (mm)	Declared aged thermal conductivity (λ_D) W/m.°K	Thermal Resistance level (R_D) m².°K/W
30	0,025	1,20
35	0,025	1,40
40	0,025	1,60
45	0,025	1,80
50	0,025	1,99
55	0,025	2,19
60	0,025	2,39
65	0,025	2,59
70	0,025	2,79
75	0,025	2,99
80	0,025	3,19
85	0,025	3,39
90	0,025	3,59
95	0,025	3,79
100	0,025	3,99
105	0,025	4,19
110	0,025	4,39
115	0,025	4,59
120	0,025	4,79
125	0,025	4,99

V-Pur S-86L

TABLE A.2: Performance chart for one diffusion open face and one diffusion tight face

Thickness (mm)	Declared aged thermal conductivity (λ_D) W/m.°K	Thermal Resistance level (R_D) m^2.°K/W
30	0,030	1,01
35	0,030	1,18
40	0,028	1,41
45	0,028	1,59
50	0,028	1,76
55	0,028	1,94
60	0,027	2,19
65	0,027	2,38
70	0,027	2,56
75	0,027	2,74
80	0,027	2,92
85	0,027	3,11
90	0,027	3,29
95	0,027	3,47
100	0,027	3,65
105	0,027	3,84
110	0,027	4,02
115	0,027	4,20
120	0,027	4,38
125	0,027	4,57