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## TECHNICAL DATASHEET NESTAAN® POLYURETHANE SYSTEMS



### NESTAAN® SD382/28

<b>Components</b>	A-Component: NESTAAN® POLY SD382/28 B-Component: NESTAAN® ISO 30
<b>Material description</b>	2 component PU spray foam system. Contains fluorinated greenhouse gases (HFC365mfc/227ea).
<b>Application</b>	NESTAAN® SD382/28 is a (H)CFC-free two component PUR spray system, to use as internal insulation material for industrial, agricultural and residential buildings. The system can be applied on both horizontal and vertical substrates and due to its high reactivity, it is also very well suited for overhead spraying.
<b>Application areas</b>	insulation on and under floors, ceilings, agricultural insulation, industrial buildings, tank insulation, etc.

#### Product properties

	A-Component	B-Component	Unit
Specific mass 20°C	1130 – 1180	1210 – 1250	g/l
Viscosity 20°C	200 - 400	150 - 250	mPa.s
<b>Mixing ratio</b>			
Parts by weight	100	107 – 109	
Parts by volume	100	100	

#### Typical foaming properties (handmix, 20°C, 3000 rpm)

		Value	Unit
<b>Reactivity</b>	Cream time (CT)	2 ± 1	s
	Gel time (GT)	6 ± 2	s
	Tack free time (TFT)	8 ± 2	s
<b>Density</b>	Core density	28 ± 3	kg/m <sup>3</sup>
	Cup density	35 ± 3	kg/m <sup>3</sup>

#### Packaging

NESTAAN® POLY SD382/28 can be supplied in	
Plastic cans	30 kg nett
Metal drums	60 of 225 kg nett
IBC's	1125 kg nett
Bulk	23000 kg nett
NESTAAN® ISO 30 can be supplied in	
Plastic cans	30 kg nett
Metal drums	60 of 250 kg nett
IBC's	1250 kg nett
Bulk	23000 kg



ATG 2900



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Shelf life and storage			
	A-Component	B-Component	Unit
Storage temperature	5 - 30	5 - 30	°C
Shelf life (in closed, sealed packaging)	3	6	months

Processing
<p>Due to its high reactivity, this system (exothermic reaction) can only be processed by suitable 2 component spray machines that were especially designed for this purpose. These machines are equipped with constant heating of the raw materials and hoses to the gun. The heating must be able to heat both components during spraying to 40°C–60°C. The mixing ratio should always be 100: 100 parts by volume.</p> <p>To get a perfect mixing, the pressure of both A- and B-component should be at least 60 bar at the gun. Generally, This can usually be achieved with a machine pressure of 90 bar during spraying. Pressure loss due to length and diameter of the hoses and the type of mixing chamber, should always be taken into account (pressure loss could reach 30 bar). A pressure difference between A- and B-component should not exceed 15 bar.</p> <p>Good mixing of both components in the right ratio is essential to obtain the optimal foam properties.</p>

Treatment of substrates
<p>All materials that could interfere with the adhesion of the applied PUR foam (e.g. oil, grease, dust, debris, water, ice), should be removed. Substrates that are not suitable to give a good adhesion (e.g. aluminum, steel, sandy concrete) should be treated with an adhesion promoter or coating.</p> <p>The substrate should be absolutely clean and dry and should have a minimum temperature of at least &gt;5°C, but preferably at least &gt;15°C. When surfaces are colder and/or not dry enough, a bad adhesion will be very probable. A humid substrate will cause, amongst others, blisters, a high amount of open cells, bad compressive strength, possible shrinkage and a bad adhesion.</p> <p>In case of doubt, the adhesion should be tested on the substrate or equivalent sample.</p>

Application of the foam
<p>the foam should be applied in layers with maximum thickness of 40 mm. Higher thicknesses can be obtained by applying multiple layers. The density of the foam will be between 35 and 50 kg/m<sup>3</sup>. If a total thickness is needed exceeding 120 mm, it is advisable to use layers of maximum 30 mm and to take enough time between the layers, until the core temperature of the previous layer has reached 25°C maximum.</p> <p>For outside applications, use a suitable UV-resistant, vapor permeable and water repellent coating as soon as possible to protect the PU foam. The coating and PU foam should be inspected regularly for mechanical damage and/or disintegration. Damages need to be treated immediately.</p> <p>Make use of protective clothing for the whole body and eyes when working with both liquid components. Protect yourself from breathing in MDI. Use respiratory equipment, preferably a self-contained or fresh air-supplied respiratory protective device. Make sure to have enough ventilation when applied indoors, amongst others to have enough cooling. A target value is a refreshing per hour of 30x the volume of the room. Check the safety data sheets for further information on personal and environmental protection.</p>

	Value	Unit	Method	EN14315-1
<b>Density</b>	28	kg/m <sup>3</sup>	EN 1602	<b>FRC28(20)</b>
<b>Reactivity (CRT / GT / TFT)</b>	2 / 6 / 8	s		<b>CT2(20) GT6(20) TFT8(20)</b>
<b>Thermal conductivity 10°C (λi)</b> Initial thermal conductivity 10°C (λ <sub>90/90</sub> ) Aged	≤0,022 0,022 See performance chart	W/m.K	EN12667	
<b>Compressive strength</b>	≥ 150	kPa	EN826	<b>CS(10\Y) 150</b>
<b>Adhesion to substrate</b>	≥ 100	kPa	EN1607	<b>A3</b>
<b>Closed cell content</b>	≥ 90	%	ISO 4590	<b>CCC4</b>
<b>Dimensional stability</b> 70°C/90% RV, 48 h. – length+width / thickness -20°C, 48 h. – length+width / thickness Deformation (168 h.) 40 kPa load at 70°C	≤ 9 / ≤ 5 ≤ 2 / ≤ 1 ≤5	% % %	EN1604	<b>DS(70,90)2 DS(-20,-)2 DLT(2)5</b>
<b>Fire behaviour</b> Euroclass	E		EN13501-1	<b>E</b>
<b>Water absorption</b>	≤ 0,3	kg/m <sup>2</sup>	EN 1609	<b>W0,3</b>

### Other foam properties

	Value	Unit	Method
<b>Airtightness</b> 30 – 40 mm. 60 mm.	< 0,009 < 0,009	m <sup>3</sup> /(h.m <sup>2</sup> )	EN 14122
<b>Water vapour permeability</b> Thickness: 97 mm	μ = 134		EN 12086
<b>VOC emission</b> Total Class décret DEVL1101903D	170 <b>A+</b>	μg/m <sup>3</sup>	EN 16000
<b>Leachable chlorine</b>	< 20	mg/kg	ASTM C871-04
<b>Contact sound absorption</b> ΔL <sub>lin</sub> ΔL <sub>w</sub>	60 mm. 250 mm. 2 4 13 15	dB	ISO 10140-3
<b>Dynamic stiffness</b> E <sub>dyn</sub>	8,5	MN/m <sup>2</sup>	EN 29052-1



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## Performance chart

Thickness (mm)	Diffusion open facing or no facing		One side diffusion open facing and one side diffusion tight facing		Two sides diffusion tight facing	
	Declared aged thermal conductivity ( $\lambda_D$ )	Thermal resistance ( $R_D$ )	Declared aged thermal conductivity ( $\lambda_D$ )	Thermal resistance ( $R_D$ )	Declared aged thermal conductivity ( $\lambda_D$ )	Thermal resistance ( $R_D$ )
40	0,027	1,48	0,026	1,54	0,023	1,74
45	0,027	1,67	0,026	1,73	0,023	1,96
50	0,027	1,85	0,026	1,92	0,023	2,17
55	0,027	2,04	0,026	2,11	0,023	2,39
60	0,027	2,22	0,025	2,40	0,023	2,61
65	0,027	2,41	0,025	2,60	0,023	2,83
70	0,027	2,59	0,025	2,80	0,023	3,04
75	0,027	2,78	0,025	3,00	0,023	3,26
80	0,026	3,08	0,025	3,20	0,023	3,48
85	0,026	3,27	0,025	3,40	0,023	3,69
90	0,026	3,46	0,025	3,60	0,023	3,91
95	0,026	3,65	0,025	3,80	0,023	4,13
100	0,026	3,85	0,025	4,00	0,023	4,35
105	0,026	4,04	0,025	4,20	0,023	4,56
110	0,026	4,23	0,025	4,40	0,023	4,78
115	0,026	4,42	0,025	4,60	0,023	5,00
120	0,025	4,80	0,025	4,80	0,023	5,22
125	0,025	5,00	0,025	5,00	0,023	5,43
130	0,025	5,20	0,025	5,20	0,023	5,65
135	0,025	5,40	0,025	5,40	0,023	5,87
140	0,025	5,60	0,025	5,60	0,023	6,09
145	0,025	5,80	0,025	5,80	0,023	6,30
150	0,025	6,00	0,025	6,00	0,023	6,52
155	0,025	6,20	0,025	6,20	0,023	6,74
160	0,025	6,40	0,025	6,40	0,023	6,96
165	0,025	6,60	0,025	6,60	0,023	7,17
170	0,025	6,80	0,025	6,80	0,023	7,39
175	0,025	7,00	0,025	7,00	0,023	7,60
180	0,025	7,20	0,025	7,20	0,023	7,83
185	0,025	7,40	0,025	7,40	0,023	8,04
190	0,025	7,60	0,025	7,60	0,023	8,26
195	0,025	7,80	0,025	7,80	0,023	8,48
200	0,025	8,00	0,025	8,00	0,023	8,70

### Remark

All our products must be processed by competent persons. In case of doubt you must contact us. The fire risk must be taken into account when processing polyurethane. All necessary measures must be taken to prevent firing. Suitable fire extinguishers must also be present in the immediate vicinity. When used in indoor applications the foam surface must always be covered with an adequate fire resistant layer. When used outdoors the foam surface must always be provided with a coating.

Our recommendations with regard to technical application, whether verbal, in writing or by means of tests have been drawn up to the best of our knowledge and understanding, but are intended as indicative only, also in relation to any third party entitlements. They do not discharge you of your obligation to check products delivered by us for their suitability for the intended procedures and purposes.

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