







Opti-Step™ 1003

PRODUCT SPECIFICATION SHEET

POLYETHYLENE FOAM FLOOR UNDERLAYMENT

CS	CC	R	SD	IS	EMISSION VALUE
					
>18 Kpa	>2Kpa	< 0,04 m ² K/W	>8 m	18 dB	A+

Physical Properties	Test Method	Unit	Value	Tolerances
Total Nominal Density	ISO 845	Kg/m ³	30	± 15%
Area Weight (AW)	EN 1923	gr/m ²	60	± 15%
Thickness (D)	EN 823 + A.3.1	mm	2	± 15%
Length (L)	EN 822 + A.3.3	m	15-150	± 2%
Width (W)	EN 822 + A.3.3	mm	1000-1500	± 2%
Compression Strength (CS)	EN826 + A.3.7.	Kpa	>18	-
Compressive Creep (CC)	EN 1606 + A.3.8.	Kpa	>2	-
Thermal Resistance (R)	EN 12667	m ² K/W	<0,04	-
Moisture Resistance (SD)	EN 12086, Method A	m	>8	-
Impact Sound reduction (IS)	EN ISO 10140-3 EN ISO 717-2	ΔLw in dB	>18	-
Emission of Formaldehyde	EN ISO 16000-9		Class A+	-
Emission of VOC	EN ISO 16000-9		Class A+	-
Ageing Resistance	SP 0414/ISO 1798	Years	50	-
Compression Strength (4th compr.) 25% 50%	ISO 3386	kPa	>18 >54	-







* According to CEN/TS 16354

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>18 Kpa Compression Strength (CS)

EN826 + A.3.7.

In order to maximise the service life of the click system connecting the laminate boards, the underlayment must not yield too much or become deformed when a load is applied. Severe deformations could cause irreparable damage to the click system and/or the HDF core layer.

The capacity of the connection system to support these types of loads is expressed as a CS value. Based on practical experience, the system needs to have a compressive strength of at least 10 kPa (0.5 mm).



>2 Kpa Compressive Creep Resistance (CC) EN 1606 + A.3.8.

The behaviour of the underlayment when subjected to a sustained load - under heavy furniture, for example - is expressed using the CC value. This rates how an underlayment behaves when subjected to a sustained load for ten years. In this case, the recommended compression strength is at least 2 kPa (0.5 mm)



< 0,04
m²K/W Thermal Resistance (R)

EN 12667

Case 1: Heated Floors

With heated floors, the flooring system must not affect the heating function, i.e. the transfer of heat from the floor heating in the room must not be excessively impeded by a heat insulating floor layer. According to the BVF (Bundesverband Flächenheizungen und Flächenkühlungen or German Association of Surface Heating and Surface Cooling) and the European standard for floor heating dimensioning (EN 1264-3), the level of thermal resistance $R_{\lambda,B}$ for the **entire flooring system must not exceed 0.15 m² K/W**.

Case 2: Cooled Floors







For cooled floors, the cooling system needs to be fitted with an automatic control for regulating the dew point in order to prevent condensation. This requires metering sensors (i.e. probes) to be fitted to the floor covering which switch off the cooling system in good time before condensation forms. Any condensation arising in the floor covering will result in damage to laminate. This could potentially lead to deformation, swelling and the formation of cracks. The recommended thermal resistance $R_{\lambda,B}$ for the **entire flooring system for floor cooling systems must not exceed 0.10m² K/W**.

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>8 m Water Vapour Resistance (SD) EN 12086, Method A

With mineral substrates (e.g. concrete, screed, etc.), a certain amount of residual moisture in the substrate is to be expected which might damage the laminate floor covering. Therefore, a water vapour control layer in the form of a film is recommended for the use on mineral substrates as a general principle. Water vapour control layers can be either integrated into the underlayment or laid separately. The thickness of the water vapour control layer on its own is not significant in this case, but the type and quality of the water vapour control layer do play an important role.

The capacity to impede the diffusion of vapour is expressed using the S_d value (SD). Based on the practical experience, this value should be at least 75 m.



18 dB Impact Sound reduction (IS) EN ISO 10140-3
EN ISO 717-2

Impact sound is understood as the noise in which is heard as the structure-borne noise generated when laminate floor covering is used in the room below or next door. The capacity of an underlayment to reduce impact sound is expressed using an IS (noise impact reduction) value. The IS value of an underlayment for the footstep soundproofing should be at least 14 dB.



Emission of Formaldehyde EN ISO 16000-9
Emission of VOC EN ISO 16000-9

Determination of the emission of formaldehydes and VOC from the floor underlayment

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