

	Test method	Requirements	Average test results from running production				
			norament®		noraplan®		
			928 grano ed	927 grano ec	senfica ed 2.0 mm signa ed 2.0 mm stone ed 2.0 mm	senfica ed 3.0 mm signa ed 3.0 mm	astro ec
<b>CE conformity</b>	<b>EN 14 041</b>		← Manufacturer: nora systems GmbH, D-69469 Weinheim →				
DoP-No.	EN 14 041		0005	0022	0001	0001	0011
Thermal conductivity	EN 10 456	$\lambda = 0.17 \text{ W}/(\text{m}\cdot\text{K})$	← Fulfilled → ← Suitable for underfloor heating systems →				
Dynamic coefficient of friction	EN 13 893	DS	← Fulfilled →				
Electrical behaviour	EN 1081	$e_d \leq 10^9 \text{ Ohm}$	Fulfilled		← Fulfilled →		
		$e_c \leq 10^8 \text{ Ohm}$		Fulfilled			Fulfilled
Reaction to fire	EN 13 501-1	Not bonded	C <sub>FS1</sub> , bonded	C <sub>FS2</sub>	← C <sub>FS1</sub> →		
Reaction to fire	EN 13 501-1	Bonded on mineral subfloor	C <sub>FS1</sub>	C <sub>FS1</sub>	B <sub>FS1</sub>		C <sub>FS1</sub>

### Properties acc. to EN 1817

Thickness	EN ISO 24 346	Mean value $\pm 0.15 \text{ mm}$ according to EN 1817	3.5 mm	3.5 mm	2.0 mm	3.0 mm	2.0 mm
Dimensional stability	EN ISO 23 999	$\pm 0.4 \%$	← $\pm 0.3 \%$ →				
Tear strength	ISO 34-1, method B, procedure A	Mean value $\geq 20 \text{ N}/\text{mm}$	45 N/mm	30 N/mm	-		
Cigarette-burn resistance	EN 1399	Procedure A (stuffed out) $\geq$ level 4 Procedure B (burning) $\geq$ level 3	← Fulfilled →				
Flexibility	EN ISO 24 344, procedure A	Mandrel diameter 20 mm, no fissuring	← Fulfilled →			-	Fulfilled
Hardness	ISO 7619	$\geq 75 \text{ Shore A}$ (EN 1817)	84 Shore A	90 Shore A	← 95 Shore A →		
Residual indentation	EN ISO 24 343	Mean value $\leq 0.15 \text{ mm}$ at thickness $< 2.5 \text{ mm}$ Mean value $\leq 0.20 \text{ mm}$ at thickness $\geq 2.5 \text{ mm}$	-		0.05 mm		
		Mean value $\leq 0.25 \text{ mm}$ at thickness $\geq 3.0 \text{ mm}$ Mean value $\leq 0.20 \text{ mm}$ at thickness $< 3.0 \text{ mm}$	0.05 mm		-		
Abrasion resistance at 5 N load	ISO 4649, procedure A	$\leq 250 \text{ mm}^3$	80 mm <sup>3</sup>	70 mm <sup>3</sup>	150 mm <sup>3</sup>		150 mm <sup>3</sup>
Colour fastness to artificial light	ISO 105-B02, procedure 3, test conditions 6.1 a)	At least level 6 on the blue scale; $\geq$ level 3 on the grey scale (= 350 MJ/m <sup>2</sup> )	← Grey scale $\geq$ level 3 acc. to ISO 105-A02 →				
Classification	EN ISO 10 874	Residential/Commercial/Industrial	23/34/43		23/34/42	23/34/43	23/34/42

### Additional technical properties

Toxicity of fire gases	DIN 53 436		Carbonisation gases are non-toxic	-	Carbonisation gases are non-toxic		
Anti-slip properties	DIN 51 130	According to BGR 181	R 9		stone ed: R 10 Others: R 9		R 9
Improvement in footfall sound absorption	ISO 10 140-3		10 dB	10 dB	6 dB	7 dB	6 dB
Effect of chemicals	EN ISO 26 987		← Resistant depending on concentration and time of exposure* →				
Effect of a castor chair	EN 425		← Suitable if castor wheels, type W, according to EN 12 529 are used →				

### Electrical behaviour\*\*

Resistance to EPA ground	ESD STM 7.1/ IEC 61 340-4-1	Measuring the installed floor at 23 °C ( $\pm 2$ °C) and $\geq 25 \%$ r.h.	$10^4 - 9 \times 10^7 \text{ Ohm}$	$< 10^4 \text{ Ohm}$	$10^4 - 9 \times 10^7 \text{ Ohm}$	$< 10^4 \text{ Ohm}$	
		Measuring the installed floor at 23 °C ( $\pm 2$ °C) and $< 25 \%$ r.h., installed on an appropriate subfloor build up	$10^4 - 10^9 \text{ Ohm}^{***}$	$< 10^4 \text{ Ohm}$	$10^4 - 10^9 \text{ Ohm}^{***}$	$< 10^4 \text{ Ohm}$	
Operator system - Resistance to ground	ESD STM 97.1/ IEC 61 340-4-5	For the system floor/conductive footwear ( $R < 5 \times 10^6 \text{ Ohm}$ ) measuring the installed floor at 23 °C ( $\pm 2$ °C) and $\geq 25 \%$ r.h.	$\leq 3.5 \times 10^7 \text{ Ohm}$	$< 3.5 \times 10^7 \text{ Ohm}$	$\leq 3.5 \times 10^7 \text{ Ohm}$		$< 3.5 \times 10^7 \text{ Ohm}$
Body voltage generation	ESD STM 97.2 IEC 61 340-4-5	Tested with defined conductive footwear with 23 °C and 12 % r.h.	← $< 10 \text{ V}$ →				
Resistance to earth	EN 1081		$10^4 - 9 \times 10^7 \text{ Ohm}$	$< 10^4 \text{ Ohm}$	$10^4 - 9 \times 10^7 \text{ Ohm}$		$< 10^4 \text{ Ohm}$
Insulation resistance	VDE 0100 - 600		$\geq 1 \times 10^5 \text{ Ohm}$	-	$\geq 5 \times 10^4 \text{ Ohm}$	$\geq 1 \times 10^5 \text{ Ohm}$	-

\* In case of increased impact of oils, grease, acids, alkalis and other aggressive chemicals please contact us.

\*\* If installed electrically dissipative and conductive in conformity with our installation instruction and according to the recommendations of the adhesive manufacturer.

The used adhesive has to have a permanent resistance of  $R < 3 \times 10^5 \text{ Ohm}$  according to EN 13 415.

\*\*\* If extremely low humidity values ( $< 25 \%$  relative air humidity (= r.h.)) are expected for a longer period, please contact nora systems GmbH, Technical Service, for advice.

EN 1817: Specification for homogeneous and heterogeneous smooth elastomer floor coverings

Colour variations due to different production batches as well as technical alterations to improve the product have to be accepted.