

FORSCHUNGSINSTITUT FÜR ANORGANISCHE WERKSTOFFE -GLAS/KERAMIK- GMBH

Heinrich-Meister-Straße 2 Tel.: +49 (0)2624-186-0 FAX: +49 (0)2624-186-9999 D-56203 Höhr-Grenzhausen Email: info@fgk-keramik.de http://www.fgk-keramik.de DAKKS

Testing Laboratory accredited by DAkkS according to DIN EN ISO/IEC 17025. The accreditation is valid for the test methods listed on the Accreditation Certificate.

Test Report 20210890

for:

Forbo Flooring B.V. Ms Kitty Hoogland Industrieweg 12 1566 JP Assendelft NETHERLANDS

1. Test specimen:

1 sample in accordance with order 4501201941 dated 17/11/2021 (Sample labelling see appendix.)

2. Date of arrival:

18/11/2021

3. Test realization:

25/11/2021 - 26/11/2021

4. Testing method:

4.1. Determination of anti-slip property of floor coverings, workrooms and fields of activities with slip danger, walking method - ramp test, according to DIN 51130:2014-02 (1).

5. Sampling / Sample preparation:

See appendix.

6. Results:

See appendix.

7. Testing uncertainties:

See appendix.

8. Epilogue:

All investigations were done in view of the latest scientific-technicals trends and to the best of one's knowledge and belief. The testing results exclusively refer to the test specimens. In order to avoid misinterpretations the present report may only be printed, copied and transmitted in its completeness. To copy extractions needs a written permission by the FGK.

30/11/2021

i.V. Dipl.-Ing.(FH) Stefan Link QM-Beauftragter/Stellvertretender Laborleiter Head of Qualitymanagement/Deputy Laboratory Manager

This test report consists of 1 page and an appendix of 1 page.





Re 1. Test specimen:

One sample labelled as "Marmoleum 2.0 mm TopShield Pro, Dessin 3048, Batch 39742".

Re 5. Sampling / Sample preparation:

Sampling and delivery to the FGK were under responsibility of the customer.

The sample was tested as delivered.

Re 6. Results:

Corrected mean acceptance angle: **11.8°** Class: **R 10**

Table: Evaluation scheme according to DIN 51130:2014-02

Corrected mean acceptance angle	Class
> 6° up to 10°	R 9
> 10° up to 19°	R 10
> 19° up to 27°	R 11
> 27° up to 35°	R 12
> 35°	R 13

Re 7. Testing uncertainties:

Details on request.



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Test Report 20210593

for:

Forbo Flooring B.V. Ms Kitty Hoogland Industrieweg 12 1566 JP Assendelft NETHERLANDS

1. Test specimen:

4 samples in accordance with order 4501181545 dated 28/07/2021 (Sample labelling see appendix.)

2. Date of arrival:

30/07/2021

3. Test realization:

04/08/2021 - 04/08/2021

4. Testing method:

4.1. Determination of anti-slip property of floor coverings, workrooms and fields of activities with slip danger, walking method - ramp test, according to DIN 51130:2014-02 (1).

5. Sampling / Sample preparation:

See appendix.

6. Results:

See appendix.

7. Testing uncertainties:

See appendix.

8. Epilogue:

All investigations were done in view of the latest scientific-technicals trends and to the best of one's knowledge and belief. The testing results exclusively refer to the test specimens. In order to avoid misinterpretations the present report may only be printed, copied and transmitted in its completeness. To copy extractions needs a written permission by the FGK.

10/08/2021

i.V. Dipl.-Ing.(FH) Stefan Link QM-Beauftragter/Stellvertretender Laborleiter Head of Qualitymanagement/Deputy Laboratory Manager

This test report consists of 1 page and an appendix of 1 page.





Re 1. Test specimen:

Four samples labelled as "Marmoleum 2.5 mm TopShield Pro Dessin 3735 Batch 39817 length", "Marmoleum 2.5 mm TopShield Pro Dessin 3735 Batch 39817 width", "Marmoleum 2.5 mm TopShield Pro Dessin 171 Batch 13727 length" and "Marmoleum 2.5 mm TopShield Pro Dessin 171 Batch 13727 width".

Re 5. Sampling / Sample preparation:

Sampling and delivery to the FGK were under responsibility of the customer.

The samples were tested as delivered.

Re 6. Results:

Sample: "Marmoleum 2.5 mm TopShield Pro Dessin 3735 Batch 39817 length"Corrected mean acceptance angle:10.0°Class:R 10

Sample: "Marmoleum 2.5 mm TopShield Pro Dessin 3735 Batch 39817 width"Corrected mean acceptance angle:9.5°Class:R 9

Sample: "Marmoleum 2.5 mm TopShield Pro Dessin 171 Batch 13727 length"Corrected mean acceptance angle:8.0°Class:R 9

Sample: "Marmoleum 2.5 mm TopShield Pro Dessin 171 Batch 13727 width"Corrected mean acceptance angle:9.0°Class:R 9

Table: Evaluation scheme according to DIN 51130:2014-02

Corrected mean acceptance angle	Class
> 6° up to 10°	R 9
> 10° up to 19°	R 10
> 19° up to 27°	R 11
> 27° up to 35°	R 12
> 35°	R 13

Re 7. Testing uncertainties:

Details on request.



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Test Report 20220143

for:

Forbo Flooring B.V. Ms Kitty Hoogland Industrieweg 12 1566 JP Assendelft NETHERLANDS

1. Test specimen:

1 sample in accordance with order by Purchase Order Number 4501218565 dated 21/02/22 (Sample labelling see appendix.)

2. Date of arrival:

25/02/2022

3. Test realization:

25/02/2022 - 01/03/2022

4. Testing method:

4.1. Determination of slip resistance of pedestrian surfaces, inclined plane, working areas and working areas with danger of slipping, test by walking on an inclined plane with shoes according to DIN EN 16165:2021-12 (1), Annex B.

5. Sampling / Sample preparation:

See appendix.

6. Results:

See appendix.

7. Testing uncertainties:

See appendix.

8. Epilogue:

All investigations were done in view of the latest scientific-technicals trends and to the best of one's knowledge and belief. The testing results exclusively refer to the test specimens. In order to avoid misinterpretations the present report may only be printed, copied and transmitted in its completeness. To copy extractions needs a written permission by the FGK.

08/03/2022

i.V. Dipl.-Ing.(FH) Stefan Link QM-Beauftragter/Stellvertretender Laborleiter Head of Qualitymanagement/Deputy Laboratory Manager

This test report consists of 1 page and an appendix of 1 page.





Re 1. Test specimen:

One sample labelled as "Marmoleum 3.2mm TopShield Pro Dessin 3048 Batch 28454".

Re 5. Sampling / Sample preparation:

Sampling and delivery to the FGK were under responsibility of the customer.

The sample was fixed on a chipboard and subsequently tested.

Re 6. Results:

Corrected mean acceptance angle $[\alpha_{shod}]$: **15°**

Class:

R 10

Table: Evaluation scheme according to DIN EN 16165:2021-12, Annex B

Test result α_{shod}	Slip resistance class
6 °≤ α _{shod} < 10°	R 9
$10^\circ \le \alpha_{shod} < 19^\circ$	R 10
$19^\circ \le \alpha_{shod} < 27^\circ$	R 11
$27^{\circ} \leq \alpha_{shod} < 35^{\circ}$	R 12
$35^{\circ} \leq \alpha_{shod}$	R 13

Re 7. Testing uncertainties:

Details on request.