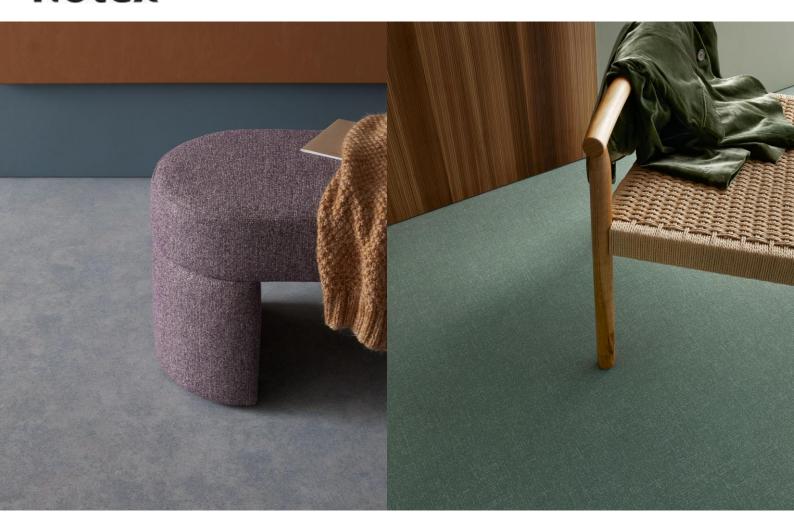
## flotex® 플로텍스 자재승인서





### flotex®



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### 사 업 자 등 록 증

(법인사업자)

등록번호: 211-85-65288

법인명(단체명) : 포보코리아 주식회사

대 표 자:정경연

개 업 연 월 일 : 2012 년 01 월 12 일 법인등록번호 : 110111-4765470 사업장 소재지 : 서울특별시 송파구 송파대로 167, B동 1511호(문정동, 문정역

테라타워)

본 점 소 재 지 : 경기도 안양시 동안구 시민대로 361, B-107호(관양동, 에이스

평촌타워)

사업의 종류: 업태 도소매

서비스

종목 산업용벨트및바닥커버링제품

엔지니어링

발 급 사 유 : 정정

사업자 단위 과세 적용사업자 여부 : 여( ) 부(∨)

전자세금계산서 전용 전자우편주소 : forbo01@hometax.go.kr

2020 년 05 월 20 일

### 송 파 세 무 서 장





















### Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

Forbo Flooring UK Limited This is to certify that:

High Holborn Road

Ripley DE5 3NT United Kingdom

Holds Certificate Number: FM 00632

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

The design, development and manufacture of textile floor coverings.

For and on behalf of BSI:

Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 1988-12-09 Latest Revision Date: 2023-07-03

Effective Date: 2023-08-31 Expiry Date: 2026-08-30

Page: 1 of 1





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Printed copies can be validated at www.bsigroup.com/ClientDirectory

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MKS 8PP. Tel: + 44 345 080 9000 BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK. A Member of the BSI Group of Companies.









### Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2015

This is to certify that:

Forbo Flooring UK Limited High Holborn Road

Ripley DE5 3NT United Kingdom

Holds Certificate Number:

EMS 32833

and operates an Environmental Management System which complies with the requirements of ISO 14001:2015 for the following scope:

The design, development and manufacture of textile floor coverings.

For and on behalf of BSI:

Matt Page, Managing Director Assurance - UK & Ireland

Original Registration Date: 1995-11-24 Latest Revision Date: 2022-11-22

Effective Date: 2022-12-30 Expiry Date: 2025-12-29

Page: 1 of 1





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This certificate is the property of:

International Associates Limited Centrum House 38 Queen Street, Glasgow, G1 3DX Scotland, United Kingdom

### SA8000 MANAGEMENT SYSTEM CERTIFICATION CERTIFICATE

This is to certify that:

### FORBO FLOORING UK LIMITED

Ripley: High Holborn Road, Ripley, Derbyshire, DE5 3NT, United Kingdom (See page 2 for full list of locations)

has been found to conform with an appropriate and effective management system that meets the requirements of

SA8000:2014

International Standard

Scope: Manufacture, Installation and Maintenance of Flooring Systems.

The scope of the certification described by this certificate relates to the empowerment and protection of all personnel who provide products or services for that organisation at the above address(es) including, where applicable, personnel employed by the organisation itself and by its suppliers, sub-contractors, sub-suppliers and home workers for the following activities:

Manufacture, Installation and Maintenance of Flooring system with the primary process of Design, Foam Lining, Linoleum Engineering, Mixing, Production, Maintenance, Slabbing, Tile Cutting, Sales, Customer Service, Design, Inspection, Warehousing, Quality Control & Maintenance Service and No Outsourced process Exist.

Certification Date: 20-Dec-2023 Certificate Number: 01-0011-4-SA8
Recertification Due By: 09-Dec-2026 Category: Manufacturing
Last Amended Date: 10-Dec-2023 Initial Certification: (Construction)
09-Dec-2014

This Certification Audit was Performed and Supervised by: Martin Coles For and on behalf of FORBO FLOORING UK LIMITED: Mark Bauer

Certification Approved By:

drug.ou

Senthil Kumar Scheme Manager



032

Social Accountability International and other stakeholders in the SA8000 process only recognise SA8000 certificates issued by qualified CBs granted accreditation by SAAS and do not recognise the validity of SA8000 certificates issued by unaccredited organisations or organisations accredited by an entity other than SAAS. Stakeholders can confirm the validity of an accredited SA8000 certificate from the SAAS website www.sassacceditation.org/certification Registration is subject to the management system being continually maintained to the above standard under regular surveillance. Should surveillance not take place when required, registration shall be removed.



To verify the authenticity of this certificate, please send an email to: <a href="mailto:certificate-verification@ia-uk.com">certificate-verification@ia-uk.com</a> or use the QR Code. Certificate Validation Code: 86961dcc-7d66-40c8-94f2-ffd9db168fc1 - Validate via: <a href="mailto:https://inet.ia-uk.com/Certificate">https://inet.ia-uk.com/Certificate</a>

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제 26314호

### 환경표지 인증서

1. 상 **호**: 포보코리아(주)

2. 사업자등록번호: 211-85-65288

지: 서울특별시 송파구 송파대로 167, B동 1511호 (문정동, 문정역테라타워) 3. 소 재

4. 공장·사업장소재지: Forbo Flooring UK Ltd. High Holborn Road, Ripley DE5 3NT, United Kingdom

명: 정경연 5. 대 표 자 성

6. CH 상 제 품: EL246. 실내용 바닥 장식재

상표명/용도·제공서비스: Flotex Colour/실내용 바닥재(섬유계, 타일 카펫, 컷파일 2종, 비주거용)

8. 인 기 간: 2025.02.22 부터 2028.02.21 까지

유: "유해물질 감소, 생활 환경오염 감소" 9. 인 증 사

「환경기술 및 환경산업 지원법」 제17조제3항, 같은 법 시행령 제23조제2항 및 같은 법 시행규칙 제34조제2항에 따라 환경표지대상제품의 인증기준에 적합하므로 환경표지의 사용을 인증합니다.

\*최초교부: 2022.02.22

2025년 01월 22일

### 한국환경산업기술원

※ 한국환경산업기술원은「환경기술 및 환경산업 지원법」제31조제2항 및 같은 법 시행령 제33조제3항이 따라 환경부장관으로부터 환경표지 인중에 관한 업무를 위탁받은 기관입니다.











### [별첨] 2/2 제 26314호

통합 상표명	세부모델(품번)명	모델구분
Flotex Colour	t546001	YBY
	t590019, t590011, t590006, t382006, t590021, t590012, t590026, t382018, t590014, t590001, t382017, t590023, t382075, t546019, t590025, t382005, t546011, t382016, t546037, t382011, t546005, t546009, t382015, t590004, t546004, t382004, t382020, t546012, t546018, t546034, t382007, t590002, t546036, t590009, t546020, t546006, t382037, t546025, t382010, t382026, t382031, t382023, t590024, t546028, t590015, t590010, t546015, t590005, t546002, t382116, t546007, t546014, t546026, t546032, t382001, t546010, t546017, t546022, t546024, t546008	YBN















### **TEST REPORT**

. . .

의 뢰 자 : 포보코리아 주식회사 접 수 번 호 : M255-24-00605

주 소 : 서울특별시 송파구 송파대로 167(문정동) B 동 1511 호 접 수 일 자 : 2024-02-15

발 급 일 자 : 2024-03-06 용 도 : 품질관리용

의뢰자제시시료명: 플로텍스 (Flotex) 쪽 번 호: 1/6

의뢰하신 시료에 대한 시험결과는 아래와 같습니다.

### ■ 시 험 결 과 ■

#### 01. 섬유 혼용율 (KS K 0210: 2023): %

	#1
나일론	100

주) 파일만 시험하였음

### 02. 폭 및 길이 (KS K 1417: 2023): mm

	#1
길이	500.0
폭	500.0

\*\* 다음페이지 계속 \*\*

FITI 시험연구원장 TI

※ 문서 확인 번호 : GRXL-9HTP-9ZTG ※

(홈페이지에 접속 후 "성적서확인"메뉴에서 문서 확인 번호를 통해 위 변조 여부를 확인할 수 있습니다.)

- 이 성적서는 제시된 시료에 대한 시험결과로서 전체제품에 대한 품질을 보증하지 않으며, 시료명은 의뢰자가 제시한 명칭입니다.
- 이 성적서는 FITI와 사전 서면 등의 없이 홍보, 선전, 광고 및 소송용도로 사용될 수 없으며, 용도 이외의 사용을 급합니다.
- 이 성적서는 KS Q ISO/IEC 17025 및 KOLAS 인정과 무관함을 알려드립니다.
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쪽 번 호 : 2/6

### 03. 직각정도 (KS K 2618: 2022): mm

#1
0.05

### 04. 캐스터 체어에 의한 폭 및 길이의 변화율 (KS K 2618: 2022): %

	#1
길이	0.03
폭	0.03

### 05. 열 및 물에 의한 폭 및 길이 변화율 (KS K 2618: 2022): %

	#1
길이	-0.01
폭	-0.02

주) (+) 신장, (-) 수축

#### 06. 열 및 물에 의한 말림 (KS K 2618: 2022): mm

#1
0.6

#### 07. 대전성 (KS K 2618: 2022): kV

#1
0.2

주) 시험방법 : 보행 시험법, 방법 A 시험조건 : (23 ± 2) ℃, (25 ± 2) % R.H.

### 08. 파일사의 용제 추출분 (KS K 1417:2023):%

#1
0.44

주) 에틸에테르 추출법 항에 따라 시험하였음

- 이 성적서는 제시된 시료에 대한 시험결과로서 전체제품에 대한 품질을 보증하지 않으며, 시료명은 의뢰자가 제시한 명칭입니다.
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쪽 번 호 : 3/6

### 09. 겉모양 (KS K 0818: 2022)

	#1
구멍, 파열의 결점	없음
오염의 결점	눈에 띄지 않음
보수 흔적의 결점	눈에 띄지 않음
모서리의 결점	고르고 적절함
그 밖의 결점	세로줄, 가로단 등이 눈에 띄지 않음

### 10. 불투수성 (KS K 1417: 2023): 외관판정

	#1
1	물의 침투 흔적이 보이지 않음
2	물의 침투 흔적이 보이지 않음
3	물의 침투 흔적이 보이지 않음
4	물의 침투 흔적이 보이지 않음
5	물의 침투 흔적이 보이지 않음
평균	물의 침투 흔적이 보이지 않음

#### 11. 연소성(KS K 0818: 2022)

	#1
잔염시간(s)	
- 경사	0
- 위사	0
탄화길이(mm)	
- 경사	28
- 위사	29

주) 제시상태 : (50 ± 2) ℃ 항온건조기 안에서 24 시간 건조 후 실리카겔을 넣은 데시케이터안에 2 시간 방치 시험방법 : 45°법

### 12. 폼알데하이드 함량 (KS K ISO 14184-1: 2011): mg/kg

#1	검출한계
검출안됨	16

주) 검출안됨 = 검출한계 미만 의뢰자 요청에 의해 파일부분만 시험하였음

- 이 성적서는 제시된 시료에 대한 시험결과로서 전체제품에 대한 품질을 보증하지 않으며, 시료명은 의뢰자가 제시한 명칭입니다.
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쪽 번 호 : 4/6

### 13. 아릴아민 함량 (KS K 0147: 2021): mg/kg

	#1	정량한계
NAME	-	-
4-AMINOBIPHENYL	5 미만	5
BENZIDINE	5 미만	5
4-CHLORO-o-TOLUIDINE	5 미만	5
2-NAPHTHYLAMINE	5 미만	5
o-AMINOAZOTOLUENE	5 미만	5
2-AMINO-4-NITROTOLUENE	5 미만	5
4-CHLOROANILINE	5 미만	5
2,4-DIAMINOANISOLE	5 미만	5
4,4'-DIAMINO-DIPHENYLMETHANE	5 미만	5
3,3'-DICHLOROBENZIDINE	5 미만	5
3,3'-DIMETHOXYBENZIDINE	5 미만	5
3,3'-DIMETHYLBENZIDINE	5 미만	5
4,4'-METHYLENEDI-o-TOLUIDINE	5 미만	5
p-CRESIDINE	5 미만	5
4,4'-METHYLENE-BIS-(2-CHLOROANILINE)	5 미만	5
4,4'-OXYDIANILINE	5 미만	5
4,4'-THIODIANILINE	5 미만	5
o-TOLUIDINE	5 미만	5
2,4-TOLUYLENEDIAMINE	5 미만	5
2,4,5-TRIMETHYLANILINE	5 미만	5
o-ANISIDINE	5 미만	5
2,4-XYLIDINE	5 미만	5
2,6-XYLIDINE	5 미만	5
4-AMINOAZOBENZENE	5 미만	5

주) 4-AMINOAZOBENZENE (CAS NO. 60-09-3)을 형성할 수 있는 아조 염료는 ANILINE (CAS. NO. 62-53-3)과 1,4-PHENYLENEDIAMINE (CAS NO. 106-50-3)을 발생시킴. ANILINE 또는 1,4-PHENYLENEDIAMINE 이 1 mg/kg 미만이면 4-AMINOAZOBENZENE 을 "정량한계 이하(< 5 mg/kg)"라고 간주하며, ANILINE 또는 1,4-PHENYLENEDIAMINE 이 1 mg/kg 이상이면 KS K 0739 : 2014 로 4-AMINOAZOBENZENE 검출여부를 확인함 불검출 = 정량한계 미만 의뢰자 요청에 의해 파일부분만 시험하였음

- 이 성적서는 제시된 시료에 대한 시험결과로서 전체제품에 대한 품질을 보증하지 않으며, 시료명은 의뢰자가 제시한 명칭입니다.
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접수번호: M255-24-00605

쪽 번 호 : 5/6

### 14. PCP, TeCP 함량 (KS K 0733: 2022): mg/kg

	#1	정량한계
PCP(PENTACHLOROPHENOL)	0.1 미만	0.1
TeCP(TETRACHLOROPHENOL)	0.1 미만	0.1

주) 의뢰자 요청에 의해 파일부분만 시험하였음

### 15. 일광견뢰도 (KS K 1417: 2023): 급

	#1
표준청색염포 5	5 이상

주) KS K ISO 105-B02 : 2014

### 16. 물견뢰도 (KS K 1417: 2023): 급

	#1
변퇴색	4-5
오 염	
- 면	4-5
- 폴리아마이드	4-5

주) KS K ISO 105-E01 : 2013

#### 17. 마찰견뢰도 (KS K 1417: 2023): 급

	#1
길이	
- 건	4-5
- 습	4-5
폭	
- 건	4-5
- 습	4-5

주) KS K ISO 105-X12 : 2016

마찰자 : 크로크 블록 하중 : (9 ± 0.2) N

마찰포 습윤율 : 95 % ~ 100 %

시험편 및 마찰포의 컨디셔닝 시간 : 4 시간 이상

\*\* 시험 결과 기록 완료 \*\*

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접수번호: M255-24-00605

쪽 번호: 6/6



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Test Report – Products Testrapport - Producten



Test report no.: Testrapport nr.:	89219827 001	Order No.: Opdracht nr.:	219827	Page 1 of 8 Pagina 1 van 8
Client Reference No.: Klantreferentie nr.:	081021-SL-SHY- 156141618	Order date: Opdrachtdatum:	08.10.2021	
Client: Klant:	Forbo Korea Ltd., #1511, Tera Tower B, 167, Songpa-daero, Songpa-gu, Seoul, 05855, Rep. of Korea			
Test item: Testvoorwerp:	Textile floor covering tile			
Identification/ Type No.: Benaming / Type nr.:	Flotex			
Order content: Inhoud opdracht:	Determination of the selected parameter.			
Test specification: Testomschrijving:	Testing according EN 1307:2014+A3:2018			
	Basic requirements			

04.10.2021
MT21-219827.01
04.10.2021 - 11.11.2021
Westervoortsedijk 73, 6827 AV Arnhem
TÜV Rheinland Nederland B.V.
See Other



tested by:
getest door:

Date: 11.11.2021
Datum:

Ondertekend door: Michiel van de Vieldart

Position / functie:

jr. Engineer

authorized by:
geautoriseerd door:

Issue Date: 11.11.2021
Datum uitgave:

Ondertekend door: Michiel van de Vieldart

Position / functie:

LFM

Others / See individual test results.

Condition of the test item at delivery:

Toestand van het test voorwerp bij ontvangst:

Test item complete and undamaged

"Legend: P(ass) = passed a.m. test specification(s) F(all) = falled a.m. test specification(s) N/A = not applicable N/T = not tested "Legenda: P(ass) = voldoet aan test omschrijving P(all) = voldoet niet aan test omschrijving P(all) = voldoet niet van toepassing P(all) = vol

This test report only relates to the a.m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.

Dit testrapport heeft alleen betrekking op het voorgenoemde test voorwerp. Zonder toestemming van het testcentrum mag dit testrapport niet in delen worden vermenigvuldigd. Dit keuringsrapport geeft geen recht op het dragen van enig keurmerk.

TÜV Rheinland Nederland B.V., Westervoortsedijk 73, 6827 AV Arnhem, The Netherlands Mail: info@nl.tuv.com · Web: www.tuv.com/nl









Test report no.: 89219827 001 Testrapport nr.:			Page 4 of 8 gina 4 van 8		
Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaat		
1	Colour fastness to artificial light: Xenon arc fading la ISO 105-B02:2014 <sup>a</sup>	amp test			
	Used apparatus	Q-Sun Xe-2Hs			
	Exposure conditions	A1			
	Irradiance	1.10 ± 0.02 W/(m <sup>2</sup> ·nm)	1.10 ± 0.02 W/(m <sup>2</sup> -nm)		
	Black standard temperature	47 ± 3°C			
	Black panel temperature	45 ± 3°C			
	Effective humidity	± 40%			
	Flip-Flop mode used	No			
	Number of assessors	≥ 3			
	Measuring uncertainty	0.5 point. Uncertainty in accordance with the general accepted criteria.			
	Assessment scale	1- severe change, 8- no change			
	Measuring uncertainty	0.5 point. Uncertainty in accordance with the general accepted criteria.			
	Requirement according to EN 1307:2014+A3:2018	Man-made fibres: ≥ 5 Natural fibres: ≥ 4			
	Test result(s)				
	Light fastness	1	/A □		

Colour fastness to rubbing ISO 105-X12:2016 <sup>a</sup>				
Test conditions	20 ± 2°C and 65 ± 4% relative humidity			
Conditioning period	≥ 24 h			
Used finger	Crock block (19 mm × 25.4 mm)			
Applied force	9 ± 0.2 N			
Number of assessors	≥ 3			
Measuring uncertainty	0.5 point. Uncertainty in accordance with the general accepted criteria.			
Assessment scale	1- severe change, 5- no change			
Requirement according to EN 1307:20	4+A3:2018 Wet: ≥ 3 Dry: ≥ 3-4			
Test result(s)				
Change in colour, Machine direction, d				
Change in colour, Cross machine direct	ion, dry 5			
Change in colour, Machine direction, w	et 5 N/A D			
Change in colour, Crossachine direction				



### 국내 시험성적서 / 품질테스트



			Page 5 of agina 5 van		
Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaa		
3	Colour fastness to water ISO 105-E01:2013ª				
	Number of assessors	≥ 3			
	Measuring uncertainty	0.5 point. Uncertainty in accordance with the general accepted criteria.			
	Assessment scale	1- severe change, 5- no change			
	Requirement according to EN 1307:2014+A3:2018	Change in colour Plain carpets: ≥ 3-4 Other carpets: ≥ 4 Staining All carpets: ≥ 2-3			
	Test result(s)				
	Change in colour	4-5			
	Staining on wool	5			
	Staining on acrylic	9			
	Staining on polyamid	4-5	- 🗆		
	Staining on polyester	I .	N/T 🗆		
	Staining on cotton	5			
	Staining on acetate	5			

4	Determination of fibre bind of synthetic (< 80 % natural fibres) cut pile carpets EN 1963:2007 test A					
	Number of specimens	4				
	Type of underlay used	None				
	Requirement according to EN 1307:2014+A3:2018	Loss of mass, m <sub>rv</sub> < 25%				
	Test result(s)					
	Mass loss per unit area, m <sub>V</sub> (g/m <sup>2</sup> )	0				
	Relative fibre loss, $m_{\rm fV}$ (%)	0	P F N/A			



### 국내 시험성적서 / 품질테스트



Test r	eport no.: 89219827 001 apport nr.:	•				•	Page 6 of Pagina 6 van
Clause Deel	Requirements Vereisten -			_	esults – en – Opn		I .
5	Determination of total thickn ISO 1765:1986	ess					<u> </u>
	Test conditions		20 ± 2°	C and 6	5 ± 4% re	elative hu	umidity
	Conditioning period		≥ 24 h				
	Test result(s)						
	Total thickness (mm)	Specimen	1	2	3	4	Average
		Measurement 1	5.2	5.2	5.3	5.3	
		Measurement 2	5.2	5.2	5.3	5.3	
		Measurement 3	5.2	5.2	5.3	5.3	5.3
		Measurement 4	5.2	5.3	5.3	5.4	
		Measurement 5	5.2	5.3	5.3	5.3	

6	Determination of total mass per unit area ISO 8543:1998, clause 6		
	Test conditions	20 ± 2°C and 65 ± 4% rela	tive humidity
	Conditioning period	≥ 24 h	
	Test result(s)		
	Total mass per unit area (g/m²)		Average
	Specimen 1	5029	
	Specimen 2	5092	5096
	Specimen 3	5152	5036
	Specimen 4	5110	
	Coefficient of variation (%)	1.0	
	Luxury rating class (in case of flocked carpets, conformity without testing)	LC1	





	eport no.: 89219827 001 pport nr.:						age 7 of ina 7 van
Clause Deel	Requirements - Tests / Vereisten - Tests		suring re tresultate				Result Resultaa
7	Determination of dimensional changes due the effects ISO 2551:1981 / EN 988:2005	of varie	ed water	and he	at condi	tions	i
	Number of specimens	3					
	Test conditions prior testing	20 ± 2	C and 6	5 ± 4% n	elative h	umid	ity
	Conditioning period	≥ 48 h					
	Type of measuring instrument used	Measu	ring table	e			
	Requirement according to EN 1307:2014+A3:2018	≤ 2 mn	6 shrinka n deviations plane			the s	ample
	Test result(s) dimensional stability						
			Sample N	lr.	Avg.		
	Change in dimensions after 2 hrs. in air of 60°C	1	2	3		]	
	Longitudinal direction (%)	-0.02	-0.02	-0.04	-0.03		
	Cross direction (%)	-0.04	-0.02	-0.02	-0.03		
	Change in dimensions after 2 hrs. in water of 20°C						
	Longitudinal direction (%)	-0.04	-0.04	-0.02	-0.03	Р	
	Cross direction (%)	-0.04	-0.03	-0.02	-0.03	F N/A	
	Change in dimensions after 24 hrs. in air of 60°C					N/T	
	Longitudinal direction (%)	-0.05	-0.05	-0.07	-0.06	1	
	Cross direction (%)	-0.05	-0.03	-0.04	-0.04	1	
	Change in dimensions after 48 hrs. at 20°C and 65% RH					1	
	Longitudinal direction (%)	-0.02	-0.03	-0.04	-0.03	1	
	Cross direction (%)	-0.04	-0.01	-0.02	-0.02		
	Test result(s) distortion out of plane						
	Max deviation from its plane (mm)		0	.0		F N/A N/T	_
	Description of the final appearance	Flatt					
8	Peel resistance of the backing EN ISO 24345:2012						
	Test conditions	23 ± 29	C and 5	0 ± 5% r	elative h	umid	ity
	Conditioning period	≥ 24 h					
	Requirement according to EN 1307:2014+A3:2018	Averag	je: ≥ 40 l	N/50 mm			
	Test result(s)						
	Length direction Mean value (N/50mm) Minimum value (N/50mm)			37 34		P F	
	Width direction Mean value (N/50mm) Minimum value (N/50mm)			34 32		N/A	



### 국내 시험성적서 / 품질테스트

Test Report - Products Testrapport - Producten



Clause Deel	Requirements - Tests / Vereisten - Tests	Measuring results – Remarks Meetresultaten – Opmerkingen	Result Resultaa		
9	Water impermeability EN 1307:2014+A3:2018: Annex G	<b>\</b>			
	Test and conditioning conditions	20 ± 2°C and 65 ± 4% relative humidity			
	Conditioning period	≥ 24 h			
	Requirement according to EN 1307:2014+A3:2018	No water penetration through the backing and no penetration of the dye into the secondary backing.			
	Test result(s)				
	No water penetration and no penetration of the dye. The sample is impermeable.	'			

	Assessment against the minimum requirements for textile floorcoverings EN 1307:2014+A3:2018 table 3 (+ table A.1 in case of carpet tiles)		
	The tested flocked carpet meets all the tested basic requirements	Р	
		F	
		N/A	
		N/T	





### **TEST REPORT**

의 뢰 자 : 한국환경산업기술원-포보코리아 주식회사

접 수 번 호: M255-21-03220

접 수 일 자 : 2021-10-05 발 급 일 자 : 2021-11-02

용 토: 환경표지인증제출용

쪽 번호:1/3

의뢰자제시시료명: Flotex

의뢰하신 시료에 대한 시험결과는 아래와 같습니다.

### ■ 시험결과 ■

01. 중금속 함량 ( 환경유해인자 공정시험기준(국립환경과학원고시 제 2020-45 호(2020.10.20) ): mg/kg

성분	함량	정량한계
	#1	
카드뮴 (Cd)	불검출	30
납 (Pb)	불검출	60
크롬VI (Cr VI )	불검출	45
수은 (Hg)	불검출	45
즈) 보거축 - 저략하게 pipi		

02. 염화비닐 단량체 함량(VCM) ( KS K 0730 : 2017 ) : mg/kg

#1 정량한계 불검출 0.1

주) 불검출 = 정량한계 미만

\*\* 다음페이지 계속 \*\*

FITI 시험연구원

※ 문서 확인 번호: 7TKI-G5W4-XXJM ※

(홈페이지에 접속 후 "성적서확인"메뉴에서 문서 확인 번호를 통해 위 변조 여부를 확인할 수 있습니다.)

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### 국내 시험성적서 / 프탈레이트 함량, 실내공기질 공정시험

fiei

(28115) 중북 청주시 청원구 오창읍 양청 3 길 21 Tel: 043-711-8875 Fax: 043-711-8804

접수번호: M255-21-03220

쪽 번 호 : 2/3

03. 프탈레이트 함량 (KS M 1991: 2016): %

		#1		
	상부	하부	정량한계	
DEHP(2-DI(ETHYLHEXYL)PHTHALATE)	불검출	불검출	0.005	
DBP(DI-BUTYLPHTHALATE)	불검출	불검출	0.005	
BBP(BENZYL BUTYLPHTHALATE)	불검출	불검출	0.005	
DIDP(DI-ISO-DECYLPHTHALATE)	불검출	불검출	0.005	
DNOP(DI-N-OCTYLPHTHALATE)	불검출	불검출	0.005	
DINP(DI-ISO-NONYLPHTHALATE)	불검출	불검출	0.005	

주) 불검출 = 정량한계 미만

04. 건축자재 방출 휘발성유기화합물 및 폼알데하이드 시험 - 소형챔버법 (국립환경과학원고시제 2020-23 호(2020.07.31)실내공기질공정시험기준 ES 02131.1d ) : mg/m'·h

	#1	
총 휘발성 유기화합물 (TVOC)	톨루엔 (TOLUENE)	품알데하이드 (FORMALDEHYDE)
0.058	0.001	불검출

주) mg/m'·h: 단위면적당 방출량(EFa) 정량한계: 0.001 mg/m'·h 불검출 = 정량한계 미만

- 시험 세부 사항

항목 세부사항

온도(°C): (25 ± 1) 방출 시험 챔버의 조건 상대습도(%): (50 ± 5) 환기횟수(회/h): (0.5 ± 0.05) 시험편의 면적과 시료부하율 시험편의 표면적(m'): 0.042 6

시료부하율(m²/m²): 2.0 TVOC: TENAX-TA 흡착관

채취관 HCHO : DNPH CATRIDGE

공기채취 공기채취량(L) TVOC: 4.0 HCHO: 6.0

> 챔버방출시간(h): (168 ± 2) 방출시험 챔버 크기(L): 20

온도 · 습도 조절장치, 적산유량계, 공기채취 장비 : ADPAC SYSTEM(JAPAN) 분석기기 TVOC : ATD(PERKIN ELMER TUBOMATRIX ATD, USA)

TVOC : ATD(PERKIN ELMER TUBOMATRIX ATD, USA)
GC/MSD(PERKINELMER CLARUS 680/SQ 8 T)

HCHO: HPLC(AGILENT 1290 SERIES, USA) \*\* 시험 결과 기록 완료 \*\*

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(28115) 중북 청주시 청원구 오창읍 양청 3 길 21 Tel: 043-711-8875 Fax: 043-711-8804

접수번호: M255-21-03220

쪽 번 호 : 3/3



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G4B(www.g4b.go.kr)진위확인코드: CC/V1AEY/Xo=

### 시험성적서



### 한국환경산업기술원

서움특별시 은평구 진흥로 215 전화: 02-2284-1660 맥스: 02-2284-1661 성적서번호 : 22-10-00505 페이지 (1)/(총 2)

KEITI 한국환경산업기술원

1. 의뢰자

회 사 명 : 포보코리아 주식회사

주 소 : (05855) 서울특별시 송파구 송파대로 167, B동 1511호(문정동, 문정역테라타워)

의뢰일자 : 2022. 06. 10.

용 도 : 품질관리용

3. 시 료 명 : Flotex (플로텍스)

4. 시험기간: 2022. 06. 10. ~ 2022. 06. 20.

시험장소 : 서울특별시 은평구 진흥로 215 별관 3층 (■고정시험실 □현장시험)

6. 시험결과

| 시험항목 단위 지험결과 검출한계 시험방법 | DIBP(Diisobutylphthalate) 무건⊗ N.D. 0.005 | KS M 1991 : 2016

INDUSTRY &

KEITI

+ 정량한계(Limit of quantitation)

◆ N.D. [Not detected(불검을 또는 검출한계 이하)]

비고 1 삼기 내용은 의뢰자가 제공한 사료에 대한 결과이고 용도 외 사용을 급합니다

2. 시험성적서의 일부분이 복사되어 사용하는 것을 급합니다.

3. KS Q ISO/IEC 17025와 KOLAS 인정과 관련이 없

작성자 기술책임자 이 명 : 막태하 성 명 : 이현희

2022. 06. 20.

### 한 국 환 경 산 업 기 술 원

Korea Environmental Industry Technology Institute

KEITI-QPF-16-03(01)





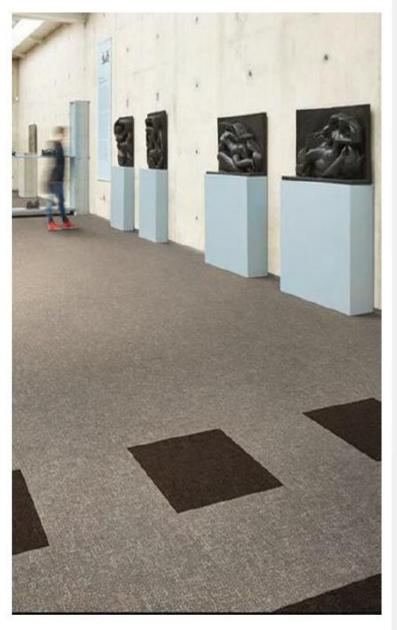




### FLOTEX TILE & PLANK

FORBO FLOORING SYSTEMS FLOCKED FLOOR COVERING

Flotex Tile: metro pebble 546011 & metro concrete 546014





FLOORING SYSTEMS

Flotex is a unique, textile, flocked floor covering, combining the cleaning properties and durability of a resilient flooring with the comfort, slip resistance and acoustic properties usually associated with textiles. It is made by electrostatically flocking 80 million nylon fibres into a watertight backing, resulting in a floor covering that is strong, hygienic, and completely waterproof. Flotex can be rotary or digitally printed, the latter allowing for high-definition quality. It has been proven to contribute towards better indoor air quality and is the only textile floorcovering that carries the Allergy UK seal or approval.

Forbo was the first flooring manufacturer to publish a complete Life Cycle Assessment (LCA) report verified by CML in 2000 to create full transparency that is independently evaluated. To offer further transparency this EPD is also including additional information to show the impacts on human health and eco-toxicity. For more information visit, www.forbo-flooring.com



Global 공인 UL기관 EPD 취득 (LEED, 친환경건축물인증 시 가산점 획득가능)





Flotex AcousticPlus Tile / Plank Flocked Floor Covering

According to ISO 14025 and EN 15804

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPD's rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. <a href="Exclusions"><u>Exclusions</u></a>: EPD's do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCA's do not typically address



the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPD's can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPD's regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPD's are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPD's from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment 333 Pfingsten Road			
T KOOKAWOT EKATOK	Northbrook, IL 60611			
DECLARATION HOLDER	Forbo Flooring B.V. Industrieweg 12 P.O. Box 13 NL-1560 AA Krommenie			
DECLARATION NUMBER	4790857560.108.1			
DECLARED PRODUCT	Flotex Tile & Plank Flocked Floor Co	vering		
REFERENCE PCR	EN 15804+A2: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products EN 16810:2017 Resilient, textile and laminate floor coverings — Environmental product category rules			
DATE OF ISSUE	October 1, 2023			
PERIOD OF VALIDITY	5 Years			
Product definition and information ab Information about basic material and Description of the product's manufact Indication of product processing Information about the in-use condition Life cycle assessment results Testing results and verifications		the material's origin ture ns		
The PCR review was conduct	ed by:	European Standards CEN/TC 134 https://www.en-standard.eu/		
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories  □ INTERNAL  □ EXTERNAL		Cooper McC Cooper McCollum, UL Environment		
This life cycle assessment wa accordance with ISO 14044 a		Thomas P. Gloria, Industrial Ecology Consultants		

This EPD conforms with EN 15804



### FLOTEX SHEET

FORBO FLOORING SYSTEMS FLOCKED FLOOR COVERING

Flotex Sheet: Calgary grey 290002





FLOORING SYSTEMS

Flotex is a unique, textile, flocked floor covering, combining the cleaning properties and durability of a resilient flooring with the comfort, slip resistance and acoustic properties usually associated with textiles. It is made by electrostatically flocking 80 million nylon fibres into a watertight backing, resulting in a floor covering that is strong, hygienic, and completely waterproof. Flotex can be rotary or digitally printed, the latter allowing for high-definition quality. It has been proven to contribute towards better indoor air quality and is the only textile floorcovering that carries the Allergy UK seal of approval.

Forbo was the first flooring manufacturer to publish a complete Life Cycle Assessment (LCA) report verified by CML in 2000 to create full transparency that is independently evaluated. To offer further transparency this EPD is also including additional information to show the impacts on human health and eco-toxicity. For more information visit, www.forbo-flooring.com



Global 공인 UL기관 EPD 취득 (LEED, 친환경건축물인증 시 가산점 획득가능)





Flotex Sheet Tile / Plank Flocked Floor Covering

According to ISO 14025 and EN 15804

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPD's rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. <a href="Exclusions"><u>Exclusions</u></a>: EPD's do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCA's do not typically address



the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPD's can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPD's regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPD's are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPD's from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment 333 Pfingsten Road Northbrook, IL 60611		
DECLARATION HOLDER	Forbo Flooring B.V. Industrieweg 12 P.O. Box 13 NL-1560 AA Krommenie		
DECLARATION NUMBER	4790857560.104.1		
DECLARED PRODUCT	Flotex Sheet Flocked Floor Covering		
REFERENCE PCR	EN 15804+A2: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products EN 16810:2017 Resilient, textile and laminate floor coverings – Environmental product declarations – Product category rules		
DATE OF ISSUE	September 1, 2023		
PERIOD OF VALIDITY	5 Years		
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications		
The PCR review was conduct	ed by:	European Standards	
		CEN/TC 134 https://www.en-standard.eu/	





# Certificate

### Indoor Air Comfort Gold

Flotex

Certified Product

### Forbo Flooring

Applicant

The product complies with Indoor Air Comfort Gold requirements for product type, version 7.0 (2020). These include both inspections of factory production according to DIN 18200 and VOC testing according to EN 16516 by an ISO 17025 accredited laboratory, at regular interval.

Indoor Air Comfort Gold certification ensures that low product emission requirements are fulfilled and is a sign of the applicant's focus on quality and contribution to a healthy indoor environment.

Product type: Textile flooring

Certificate number: IACG-21-05-07-2022

Issue date: 16 February 2022

Validity date: 16 February 2027

This certificate is valid as specified if regular surveillance and testing is done.

Compliance with Indoor Air Comfort Gold means compliance with VOC requirements on low emitting products of:

BREEAM international, BREEAM NL, BREEAM NOR, BVB (Sweden), Cradle to Cradle (Gold/Platinum), Danish Indoor Climate Label (Emission Class 1), DGNB, Eco Product Norway, France VOC class A+, French HQE certification, Germany (AgBB/ABG), GreenTag Australia, GUT, Italian CAM Edilizia, LEED (ACP), M1, Nordic Swan, Singapore Green Label, SKA Rating, very low emitting products according to EN 16798-1, WELL Building

1 . promine.

I nomas iveunaus

Head of Certification Body



**Product Testing** 





### Appendix to Certificate IACG-21-05-07-2022

### Forbo Flooring

receives the Indoor Air Comfort Gold certificate with validity 16 February 2027

for below product group, including subgroups and individual products as listed:

Product group: Flotex

Product type: Textile flooring

#### Products included:

Flotex Bahnenware

Flotex Colour

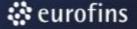
Flotex Designerkollektion

Flotex Linear

Flotex Naturals Bahnenware

Flotex Tiles & Planks

The products in this group are based on identical or similar recipe and are produced under equivalent conditions. Grouping of the products and inspection of the production process is part of the Indoor Air Comfort Gold certification. A worst-case product, which is representative for the whole group, is being tested frequently.



**Product Testing** 





# Renewable Energy Guarantee of Origin allocated to

Forbo Flooring - Ripley

Consumption Period

Oct-23

Mar-25

Generation Type

Wind/Solar/Hydro

Amount

7,368

MWh

Certificate No.

To be Confirmed



Scan here to view our data store



Nick Campbell - Managing Director: Environmental Certificates, Inspired PLC







### **TEST REPORT**

 DATE: 01-04-2024
 Page 1 of 1
 TEST NUMBER: 0303991

 CLIENT
 Forbo Flooring

TEST METHOD CONDUCTED	AATCC 129 Colorfastness to Ozone in the Atmosphere Under
TEST METHOD CONDUCTED	High Humidities

	DESCRIPTION OF TEST SAMPLE
IDENTIFICATION	Flotex Tile 546005

#### **GENERAL PRINCIPLE**

This test is designed to determine the resistance of colored textiles to the action of ozone in the atmosphere at elevated temperatures and relative humidity. The specimens are exposed to a predetermined number of test cycles and then assessed a numerical rating for their change in color. Ratings are made in accordance with the AATCC Gray Scale for Evaluating Color Change.

#### TEST RESULTS

EXPOSURE	2 Cycles
----------	----------

COLOR	RATING	COLOR	RATING	COLOR	RATING
Flotex Tile 546005	5.0				

	AATCC RATING KEY
5	No change
4	Slight change
3	Noticeable change
2	Considerable change
1	Severe change

APPROVED BY:

This report is provided for the exclusive use of the client to whom it is addressed. It may be used in its entirety to gain product acceptance from duly constituted authorities. This report applies only to those samples tested and is not necessarily indicative of apparently identical or similar products.

This report, or the name of Professional Testing Laboratory, LLC, shall not be used under any circumstance in advertising to the general public.

714 Glenwood Place

Dalton, GA 30721

Phone: 706-226-3283

Fax: 706-226-6787

email:protest@optilink.us





### **TEST REPORT**

DATE: 01-04-2024	Page 1 of 1	TEST NUMBER: 0303992
CLIENT	Forbo Flooring	

TEST METHOD CONDUCTED	AATCC 129 Colorfastness to Ozone in the Atmosphere Under
IESI METHOD CONDUCTED	High Humidities

	DESCRIPTION OF TEST SAMPLE
IDENTIFICATION	Flotex Sheet 482018

### **GENERAL PRINCIPLE**

This test is designed to determine the resistance of colored textiles to the action of ozone in the atmosphere at elevated temperatures and relative humidity. The specimens are exposed to a predetermined number of test cycles and then assessed a numerical rating for their change in color. Ratings are made in accordance with the AATCC Gray Scale for Evaluating Color Change.

### TEST RESULTS

EXPOSURE 2 Cycles
-------------------

COLOR	RATING	COLOR	RATING	COLOR	RATING
Flotex Sheet 482018	5.0				

	AATCC RATING KEY
5	No change
4	Slight change
3	Noticeable change
2	Considerable change
1	Severe change

APPROVED BY:

This report is provided for the exclusive use of the client to whom it is addressed. It may be used in its entirety to gain product acceptance from duly constituted authorities. This report applies only to those samples tested and is not necessarily indicative of apparently identical or similar products.

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714 Glenwood Place

Dalton, GA 30721

Phone: 706-226-3283

Fax: 706-226-6787

email:protest@optilink.us





### COMPLIANCE TESTED by berkeley analytical

### **VOC Emission Test Certificate**

Product Name: Flotex Tile/Modular - 546008

Product Sample Info	rmation
Company:	Forbo Flooring Systems
Company Website:	www.forbo.com
Product Type:	Flooring (all types)
Date Produced:	11/15/2018

Certificate Inform	nation
Certificate No:	181220-01
Certified By:	far. J
	Raja S. Tannous, Laboratory Director
Date:	December 20, 2018

Reference Standard: California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017 (Emission testing method for CA Specification 01350)

### Acceptance Criteria and Results Demonstrating Compliance of Product Sample to Referenced Standard:

Exposure Scenario <sup>1</sup>	Individual VOCs of Concern <sup>2</sup>		Formaldehyde <sup>3</sup>		TVOC4
	Criterion	Compliant?	Criterion	Compliant?	Range
School Classroom	≤⅓ Chronic REL	YES	≤9.0 µg/m³	YES	≤ 0.5 mg/m <sup>3</sup>
Private Office	≤½ Chronic REL	YES	≤9.0 µg/m³	YES	≤ 0.5 mg/m <sup>3</sup>

#### Product Coverage<sup>5</sup>: Not applicable

- Exposure scenarios & product quantities for classroom & office are defined in Tables 4-2 4-5 (CDPH Std. Mtd. V1.2-2017)
- 2. Maximum allowable concentrations of individual target VOCs are specified in Table 4-1 (ibid.)
- Maximum allowable formaldehyde concentration is \$9 µg/m², effective Jan 1, 2012; previous limit was \$16.5 µg/m² (libid.)
- Informative only; predicted TVOC Range in three categories, i.e., ≤0.5 mg/m³, >0.5 -4.9 mg/m³, and ≥5.0 mg/m³
- 5. Informative and applicable only to tests of wet-applied products; grams of sample applied per square meter of substrate

#### Standards & Codes Recognizing CDPH Standard Method V1.2 (partial list)

- USGBC LEED Version 4, BD&C, ID&C
- . The WELL Building Standard
- ANSI/GBI 01, Green Building Assessment Protocol
- Green Guide for Healthcare V2.2

Narrative: Forbo Flooring Systems selected a sample representative of its Flotex Tile/Modular - 546008 product and submitted it on 11/26/2018 for testing. Berkeley Analytical measured and evaluated the emissions of VOCs from this sample following CDPH/EHLB/Standard Method V1.2-2017. The results of the test are presented in Berkeley Analytical report, 135-077-01A-Dec2018.

Berkeley Analytical is an independent, third-party laboratory specializing in the analysis of organic chemicals emitted by and contained in building products, finishes, furniture, and consumer products. We are an ISO/IEC 17025 accredited laboratory (IAS, TL-383); all standards used in performing this test are in Berkeley Analytical's scope of accreditation.

DISCLAIMER: THIS CERTIFICATE OF COMPLIANCE AFFIRMS THAT: 1) A SAMPLE OF THE USTED PRODUCT WAS TESTED ACCORDING TO THE REFERENCED STANDARD;
2) THE MEASURED VOC EMISSIONS FROM THE SAMPLE WERE EVALUATED FOR THE DEFINED EXPOSURE SCENARIO(S); AND 3) THE RESULTS MEET THE ACCEPTANCE
CRITERIA OF THE REFERENCED STANDARD(S). BERKELEY ANALYTICAL IS NOT RESPONSIBLE FOR ANY CLAIMS REGARDING A PRODUCT OR PRODUCTS ENTERED INTO
COMMERCE THAT MAY BE BASED ON THIS TEST. BERKELEY ANALYTICAL PROVIDES THIS CERTIFICATE OF COMPLIANCE "AS IS" WITHOUT WARRANTY OF ANY KIND,
EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

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### SEAL OF APPROVAL CERTIFICATE

This is to certify that.

### Forbo Flooring UK Ltd

Have been awarded the British Allergy Foundation Seal of Approval for the removal of House Dust Mite for their product

## Flotex Flooring

Simone Miles, Chief Executive

Licence No: 200011

Valid until: 8ª October 2026



Allergy UK is the operational name of The British Allergy Foundation, a charitable company limited by guarantee and registered in England and Wales. Company No: 4509293. Charity No: 1094231 Registered in Scotland - Charity No: SC039257





SATRA Technology Centre Ltd Wyndham Way, Telford Way, Kettering, Northamptonshire, NN16 8SD United Kingdom Tel: +44 (0) 1536 410000 email: info@satra.com www.satra.com





### TECHNICAL REPORT

	SATRA reference:	FLO9359L8X5		
	Forh	241	1	
Forbo Flooring UK Limited High Holbom Road	Report ID/Issue number:	35739/1	511	
RIPLEY Derbyshire	Your reference:	4501326032	OFIO	
DE5 3NT	Date samples received:	02/01/2024		
United Kingdom	Date(s) work carried out:	02/01/2024 to 11/01/2024		
K United 9359L8X5	Date of report:	15/01/2024		

#### **Testing Requirements**

Testing of one product, described by the customer as "Flotex Tile" to DIN 51130:2014 excluding paragraph 6, measurement of displacement space.

For SATRA's full terms and conditions see our website: https://www.satra.com/terms\_of\_business.php

For SATRA's statements regarding the confidentiality, publication and dissemination of this report, decision rules and UKAS accreditation please see the final page of this technical report.

Report Signed by:

Reece Johnson

Report Signatory

SATRA Technology Centre Ltd Wyndham Way, Telford Way, Kettering,
Northamptonshire, NN16 8SD United Kingdom
Tel: +44 (0) 1536 410000 Email: info@satra.com Website: www.satra.com









TESTING OF ONE SAMPLE DESCRIBED BY THE CUSTOMER AS "FLOTEX TILE" TO DIN 51130:2014 (3) EXCLUDING PARAGRAPH 6 MEASUREMENT OF DISPLACEMENT SPACE (2).

As requested by Forbo Flooring UK Ltd, an assessment has been conducted to determine the slip potential of the sample submitted referenced "Flotex Tile" using the ramp method, as detailed below.

#### SUMMARY

With regards to the requirements laid out in DIN 51130:2014 <sup>(3)</sup>, the floor sample submitted under the reference "Flotex Tile" has demonstrated an average angle of ≥ 38.8°, hence being classified as R13.

#### SAMPLE SUBMITTED

Sample reference:

"Flotex Tile" (1)

Appearance:



Date received: 02 January 2024

Date into conditioning: 02 January 2024

Testing completed: 11 January 2024

Testing conducted by: Phil Weal & Tom Notley

#### TESTS CARRIED OUT

 DIN 51130:2014 Testing of floor coverings - Determination of the anti-slip property -Workrooms and fields of activities with slip danger - Walking method - Ramp test

#### Notes:

- The information supplied by the customer. Not verified by SATRA.
- (2) Displacement space Is not relevant to this test reference. Only required with floor coverings which have an open structure, with large surface gaps, e.g. grates.
- (3) This standard is withdrawn and has been specifically requested by the customer.

SATRA Report Reference: FLO9359L8X5 241 Report ID/Issue number: 35739/1

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#### RESULTS:

Test No.	Operator A Inclined platform shod Corrected angle result (°)	Operator B Inclined platform shod Corrected angle result (°)		
1	≥ 39.1	≥ 38.7		
20/-	≥ 38.8	≥ 38.4		
3 4/7//	≥ 39.3	≥ 38.4		
Corrected Operator Mean	≥ 39.1	≥ 38.5		
Corrected Total Mean	≥ 38.8			
Rating	R 13			

#### R rating category

R Value	Category Static Friction is:	Angle of Inclination
R9	Low	6° to 10°
R10	Normal	>10° to 19°
R11	Above Average	>19° to 27°
R12	High Oorla	>27° to 35°
R13	Very High	>35°

Note to end use applications:

R9 Floors in work rooms and work areas without a high risk of slipping. General and private areas.

R10 to R13 Floors in workrooms and work areas where there is an increased risk of slipping due to grease, oil, water, foods, left-overs, dust, flour, plant clippings, etc.

SATRA Report Reference: FLO9359L8X5 241
Report ID/Issue number: 35739/1

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Annex 1.0

Operator Verification results for DIN 51130:2014 (3)

Operator A

	E	Operator A Verification		ification	Ave. 1-	26
Verification Board		Test Run				
		400	2	3	Average	Difference
ST-I	$(8.7 \pm 3.0)$	7.5	7.9	8.0	7.8	0.9
ST - II	$(17.3 \pm 3.0)$	20.3	20.1	19.9	20.1	2.8
ST - III	$A (27.3 \pm 3.0)$	26.5	26.6	26.1	26.4	0.9

#### Operator B

00	10	Operator B Verification			l <sub>an</sub>	-003
Verification Board		Test Run			Augrage	884.82
		1	2	3	Average	Difference
ST-I	$(8.7 \pm 3.0)$	8.2	8.1	8.2	8.2	0.5
ST-II	$(17.3 \pm 3.0)$	19.5	19.7	19.2	19.5	2.2
ST - III A	$(27.3 \pm 3.0)$	27.0	26.9	27.2	> 27.0	0.3

SATRA Report Reference: FLO9359L8X5 241 Report ID/Issue number: 35739/1

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Annex 1.0

Operator Verification results for DIN 51130:2014 (3)

Operator A

	E	Operator A Verification		ification	Ave. 1-	26
Verification Board		Test Run				
		400	2	3	Average	Difference
ST-I	$(8.7 \pm 3.0)$	7.5	7.9	8.0	7.8	0.9
ST - II	(17.3 ± 3.0)	20.3	20.1	19.9	20.1	2.8
ST - III	$A (27.3 \pm 3.0)$	26.5	26.6	26.1	26.4	0.9

#### Operator B

00	10	Operator B Verification			l <sub>an</sub>	-003
Verification Board		Test Run			Augrage	884.82
		1	2	3	Average	Difference
ST-I	$(8.7 \pm 3.0)$	8.2	8.1	8.2	8.2	0.5
ST-II	$(17.3 \pm 3.0)$	19.5	19.7	19.2	19.5	2.2
ST - III A	$(27.3 \pm 3.0)$	27.0	26.9	27.2	> 27.0	0.3

SATRA Report Reference: FLO9359L8X5 241 Report ID/Issue number: 35739/1

Page 4 of 5





#### Assessment of the Performance of Three Carpet Disinfectants Applied through a Sprayer onto a Carpet.

Client Details: Forbo Flooring UK Ltd

High Holborn Road, Ripley. DE5 3NT

Contact Name: John Lewin

Contact Email: John.lewin@forbo.com

Telephone Number: 01773744121

Purchase Order Number:

Date Of Report: 30th October 2017

MelBec Reference Number: 3963 No. of samples: 3

	Product and Test Criteria	Product and Test Details
	Lab reference	3963
	Name of Product(s)	Flotex Metro Ash Lot No: 3557
Carpet Details	Manufacturer	Forbo Flooring Ltd
	Storage Conditions	Ambient
	Active Substance	None
Disinfectant	M2 Ultra	Diluted 1:10
Details	Prochem Microsan	Diluted 1:20
Details	Chemspec Formula 429	Ready to Use.
	Method	Bespoke
	Neutraliser / Diluent	BU Broth
	Plating Method	Pour plate using TSA
Experimental	Test Product Dilutions	Not Relevant
Conditions	Identification of the	Staphyloccocus aureus ATCC 6538
	bacterial strains	Klebsiella pneumoniae ATCC 4352
	Test Temperature	20°C ± 1°C
	Interfering Substance	Not Required
	Incubation Temperature	36°C for bacteria

Unit 1, Envair House, York Avenue, Haslingden, Rossendale, BB4 4HX info@melbecmicrobiology.co.uk Tel = 01706 214 492 melbecmicrobiology.co.uk

Registered in England. Company Number - 8604622 VAT Reg - 167 8579 45

Page 1 of 6 MTF 5.10.1 Issue 1





#### Results:

#### M2 Care Ultra M Concentrate.

Test Organism	Count cfu/carpet disc					
		Untreated			Treated	
	Vc1	Vc2	Vc3	Vc1	Vc2	Vc3
Kl pneumoniae	298 -3	319 -3	289-3	12 -1	7 -1	107 -1
	27 -4	31 -4	31 -4			
St. aureus	249 -3	194 -3	221 -3	6 -1	13 -1	7 -1
	16 -4	17 -4	18 -4			

#### Mean Counts

Test	Mean Count cfu/carpet disc		
Organism			
	Untreated	Treated	
Kl pneumoniae	3.02 x 10 <sup>5</sup>	4.2 x 10 <sup>2</sup>	
St. aureus	2.17 x 10 <sup>5</sup>	8.7 x 10°	

#### Mean Log Counts

Test Organism	Mean Log/carpet disc		
	Untreated	Treated	
Kl pneumoniae	5.48	2.62	
St. aureus	5.34	0.94	

#### Organism Reductions

Test	Reduction		
Organism			
	Percentage	Log	
Kl pneumoniae	99.86%	2.86	
St. aureus	99.996%	4.40	

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Page 3 of 6

MTF 5.10.1 Issue 1





#### Prochem Microsan

Test Organism	Count cfu/carpet disc					
		Untreated			Treated	
	Vc1	Vc2	Vc3	Vc1	Vc2	Vc3
Kl pneumoniae	298 -3 27 -4	319 -3 31 -4	289-3 31 -4	41 -1	32-1	85-1
St. aureus	249 -3 16 -4	194 -3 17 -4	221 -3 18 -4	35 -1	29 -1	41 -1

#### Mean Counts

Test	Mean Count cfu/carpet disc	
Organism		
	Untreated	Treated
Kl pneumoniae	3.02 x 10 <sup>5</sup>	5.27 x 10 <sup>2</sup>
St. aureus	2.17 x 10 <sup>5</sup>	3.5 x 10 <sup>2</sup>

#### Mean Log Counts

Test Organism	Mean Log/carpet disc		
	Untreated	Treated	
Kl pneumoniae	5.48	2.72	
St. aureus	5.34	2.54	

#### Organism Reductions

Test Organism	Reduction		
	Percentage	Log	
Kl pneumoniae	99.83%	2.76	
St. aureus	99.84%	2.80	

Unit 1, Envair House, York Avenue, Haslingden, Rossendale, BB4 4HX info@melbecmicrobiology.co.uk Tel = 01706 214 492 melbecmicrobiology.co.uk

Registered in England. Company Number – 8604622 VAT Reg – 167 8579 45

Page 4 of 6

MTF 5.10.1 Issue 1





#### Chemspec Formula 429.

Test Organism	Count cfu/carpet disc					
		Untreated			Treated	
	Vc1	Vc2	Vc3	Vc1	Vc2	Vc3
Kl pneumoniae	298 -3 27 -4	319 -3 31 -4	289-3 31 -4	29 -1	27-1	44-1
St. aureus	249 -3	194 -3	221 -3	180 -1	68 -1	33 -2
St. aureus	16 -4	194 -3 17 -4	18 -4	100 -1	00 -1	33 -2

#### Mean Counts

Test	Mean Count cfu/carpet disc	
Organism		
	Untreated	Treated
Kl pneumoniae	3.02 x 10 <sup>5</sup>	3.33 x 10 <sup>2</sup>
St. aureus	2.17 x 10 <sup>5</sup>	1.93 x 10 <sup>3</sup>

#### Mean Log Counts

Test Organism	Mean Log/carpet disc		
	Untreated	Treated	
Kl pneumoniae	5.48	2.52	
St. aureus	5.34	3.29	

#### Organism Reductions

Test Organism	Reduction		
	Percentage	Log	
Kl pneumoniae	99.89%	2.96	
St. aureus	99.11%	2.05	

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FLOORING SYSTEMS



#### Conclusion:

After treatment with disinfectant the numbers of both Staphylococcus aureus and Klebsiella pneumoniae remaining on the carpet were reduced by >99% or by > 2 log compared to the untreated controls.

Report Authorised By:

245

Dawn Mellors

Technical Director

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## 글로벌 인증서 - Impermeability Test



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK. Telephone: +44 (0) 113 259 1999

phone: +44 (0) 113 259 1999 Email: info@bttg.co.uk Website: www.bttg.co.uk

Date: 4 May 2018

Our Ref: 25/08680B/03/18

Your Ref:

Page: 1 of 2

Client: Forbo Flooring UK Limited

High Holborn Road

Ripley Derbyshire DE5 3NT

Job Title: Impermeability Testing on One Sample of Flocked Tiles

Client's Order No: 4500972216

Date of Receipt: 20 March 2018

Description of Sample(s): One sample of flocked tiles, reference Flotex Acoustic Plus Tile

Work Requested: We were asked to make the following test(s):

Determination of Impermeability

Note: This report relates only to the samples submitted and as described in the report.

- subcontracted test, UKAS accredited
- \*\* subcontracted test, EN ISO/IEC 17025 accredited
- \*\*\* not UKAS accredited





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## 글로벌 인증서 - Impermeability Test



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK. Telephone: +44 (0) 113 259 1999

Email: info@bttg.co.uk Website: www.bttg.co.uk

Date: 4 May 2018

Our Ref: 25/08680B/03/18

Your Ref:

Page: 2 of 2

Client: Forbo Flooring UK Ltd

#### **Determination of Impermeability**

Five specimens from the sample were tested in accordance with BS EN 1307:Annex G:2014. 100ml of Methylene Blue solution dyed water solution was poured onto a 15cm diameter concentrated area of the sample, from a height of 1 metre. This was repeated over five specimens.

#### Analysis

The specimens from each test were visually examined after 24 hours for evidence of water penetration through the backing onto the white tissue.

#### Results

Water penetration was not visible on any specimen. Dye was not visible in the secondary backing on the specimens but there was found to be penetration into the primary backing.

The sample was found to be impermeable.

Reported by: D Feltham, Laboratory Technician

Countersigned by: P Doherty, Operational Head

Enquiries concerning this report should be addressed to Customer Services.



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## Certificate of Compliance

### Forbo Flooring Systems

23 Ormsby Place, Wetherill Park, NSW 2164

Bureau Veritas grants the above organization the Certificate of Compliance (CoC) only in respect of the products described below and valid until the expiry date or until material change occurs to the supply chain, cable production process or end of life management. The scope of the assessment and certification against the requirements of the PVC Best Practice Guidelines detailed as part of the 'Green Star PVC credit - Auditor Verification Guidance (Issued 20 November 2013) using Compliance Pathway 2, 'Manufacturers Declaration'.

The CoC is granted subject to the 'Bureau Veritas Conditions of Service'.

**Product Certification** 

## Green Building Council of Australia **PVC Best Practice Guidelines**

for the following product(s)

See attached list

CoC No: 2840

Date Granted: 14/11/2022 Expiry Date: 14/11/2024

Signed on behalf of Bureau Veritas

Sam Guindi

fund-

Product Certification Manager

This CoC remain the property of Bureau Veritas and must be returned if certification is terminated. In the case of serious non-compliance the certification will be withdrawn.

To check the validity of this certificate, please contact. Bureau Veritas Australia Pty Ltd Issuing office: Bureau Veritas Pty Ltd, 3/435 Williamstown Road, Port Melbourne, Victoria, 3207





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