



Life Sciences Solutions

Floor and wall coverings
high performance

Gerflor

Cleanroom Requirements

Controlled environments

A clean room is a space in which **particules or molecular contaminants** are mastered and controlled. In addition, **physical parameters** such as temperature, ESD, humidity or pressure can be controlled. These environments are used for electronic, pharmaceutical or medical equipment productions.


Some sectors will need to ensure an environment **free of bacteria, viruses or other micro-organisms**.




High control environment

Floor & wall protection, focus points to manage

 Contamination management

 Resistance to external attacks

 Cleaning and decontamination

 ESD properties

 GMP compliance



Floor and wall solutions

Gerflor works with the best international institutes in order to guarantee these customers optimum performance. .



Easy zoning

Cleanroom standards

Gerflor ISO and GMP compliant

Contamination management



ISO 14644-1 specifies the classification of air cleanliness in terms of concentration of airborne particles in cleanrooms and clean zones.

ISO 14644-4 specifies the requirements for the design, construction and start-up of cleanroom facilities.

ISO 14644-8 establishes the classification of air chemical cleanliness (ACC) in cleanrooms and associated controlled environments, in terms of airborne concentrations of specific chemical substances.

ISO 14698 establishes the principles and basic methodology of a formal system of biocontamination control (Formal System) for assessing and controlling biocontamination when cleanroom technology is applied for that purpose.

ISO 22196 specifies a method of evaluating the antibacterial activity of antibacterial-treated plastics, and other non-porous, surfaces of products.

ISO 21702 specifies proper methods for measuring antiviral activity on plastics and other non-porous surfaces of antiviral-treated products against specified viruses.

ISO 846 is a microbiological tests to determine the action of fungi and bacteria on plastics.

Resistance to external attacks



ISO 14644-4 specifies the requirements for the design, construction and start-up of cleanroom facilities.

ISO 14698 establishes the principles and basic methodology of a formal system of biocontamination control (Formal System) for assessing and controlling biocontamination when cleanroom technology is applied for that purpose.

ISO 2812-1 specifies general methods for determining the resistance of an individual-layer or multi-layer system of coating materials to the effects of liquids, other than water, or paste-like products.

Cleaning and decontamination



ISO 8690 Measurement of radioactivity — gamma-ray and beta-emitting radionuclides — Test method to assess the ease of decontamination of surface materials.

ISO 14644-9 establishes the classification of cleanliness levels on solid surfaces by particle concentration in cleanrooms and associated controlled environment applications.

ISO 14698 establishes the principles and basic methodology of a formal system of biocontamination control (Formal System) for assessing and controlling biocontamination when cleanroom technology is applied for that purpose.

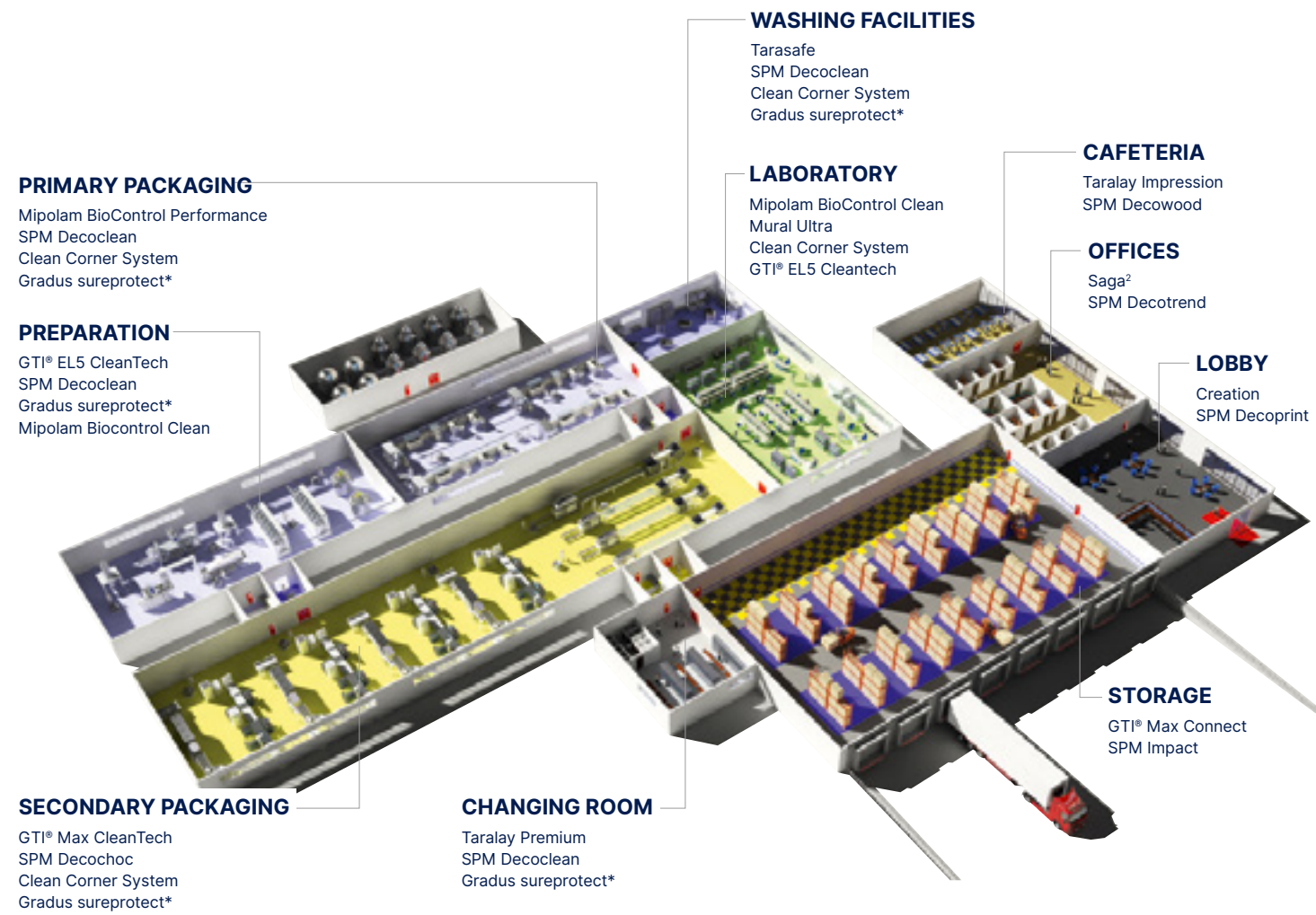
Esd properties



IEC 61340-5-1 Protection of electronic devices from electrostatic phenomena – General requirements.

ANSI/ESD S20.20 provides administrative and technical requirements for establishing, implementing, and maintaining an ESD Control Program to protect electrical or electronic parts, assemblies, and equipment susceptible to damage by electrostatic discharges.

A complete Solution



* UK only

Exclusive solutions
for renovation /
rehabilitation of your
sites

■ A TECHNICAL ASSISTANCE SERVICE
(TAS) SUPPORTS YOU ON YOUR
PROJECTS



Ideal for renovation



ESD areas

ISO 5

GMP-Class A

H₂O₂ RESISTANT



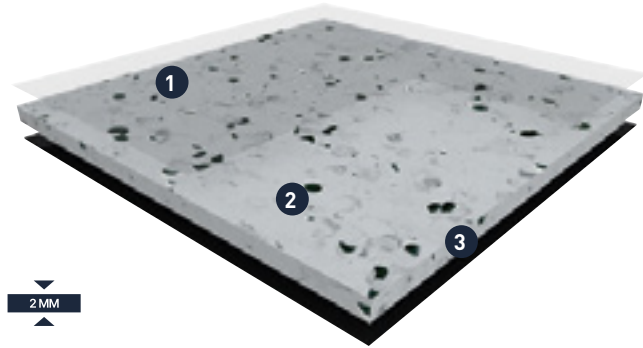
GTI® Max Cleantech

ISO 3

H₂O₂ RESISTANT



Mipolam Biocontrol EI5

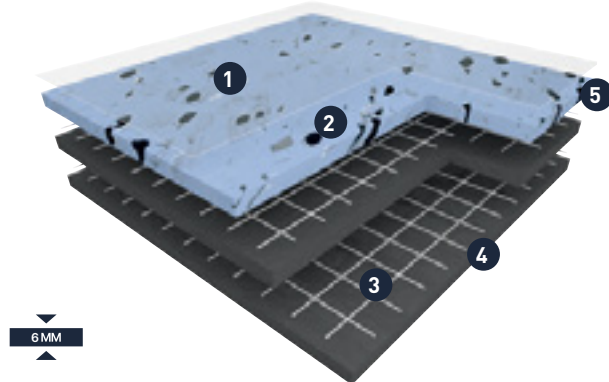


- 1 Conductive surface treatment
- 2 Homogeneous conductive layer with carbon black
- 3 Backing treated with carbon black



Sold in rolls of 20 x 2 m

GTI® EI5 Cleantech



- 1 Static conductive surface treatment
- 2 Static conductive wear layer
- 3 Double fiber glass reinforcing grid
- 4 Static conductive backing
- 5 Straight edges



Sold in tiles of 650 x 650 mm



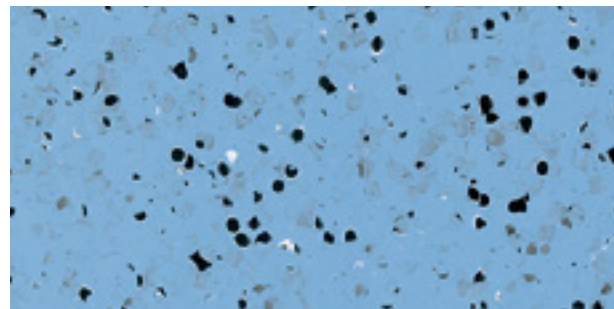
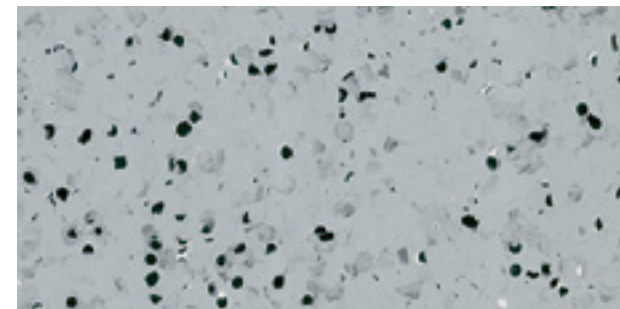
Watertight system



A little to no adhesive

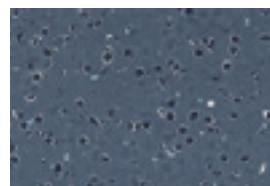


High mechanical traffic resistance

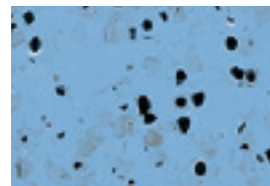


THE HIGH PERFORMANCE FLOOR FOR ESD CLEANROOMS

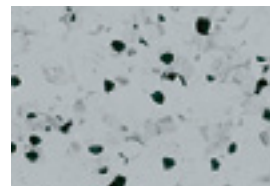
THE PERFECT SOLUTION FOR RENOVATION OF CLEANROOMS AND ESD AREAS



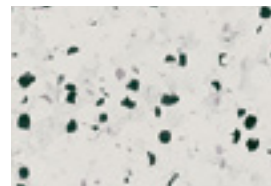
2002 Volcano / 0351 Black



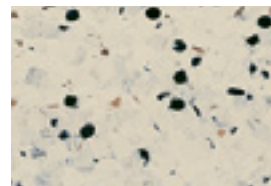
2004 Horizon / 0354 Bleu



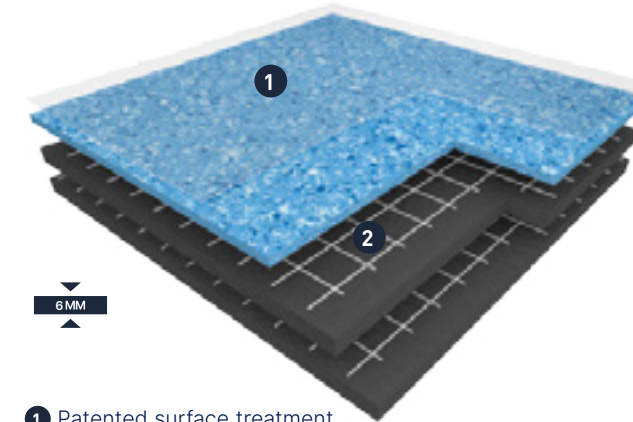
2006 Medium Fog / 0352 Grey



2001 Light Fog / 0350 Light Grey



0353 Beige



- 1 Patented surface treatment
- 2 Double fiber glass reinforced grid



Sold in tiles of 600 x 600 mm



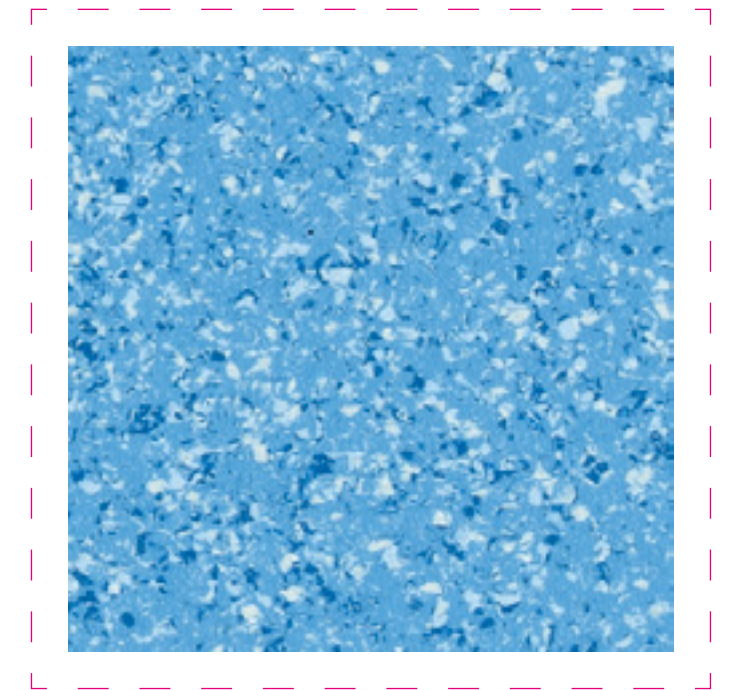
Watertight system



A little to no adhesive



High mechanical traffic resistance



THE EXCLUSIVE SOLUTION FOR RENOVATION OF CLEANROOMS WITH HIGH TRAFFIC



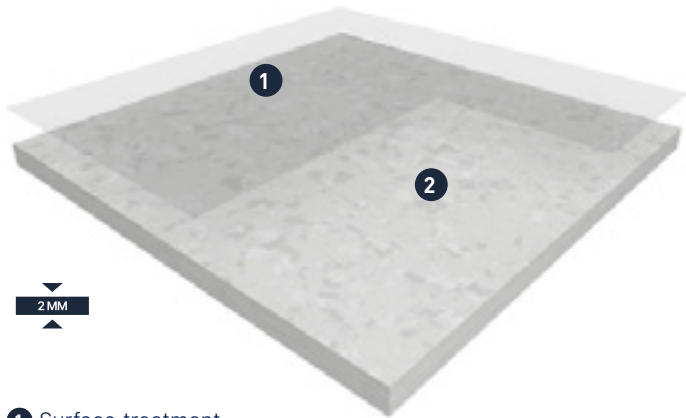
* For US, on demand

Mipolam Biocontrol Performance

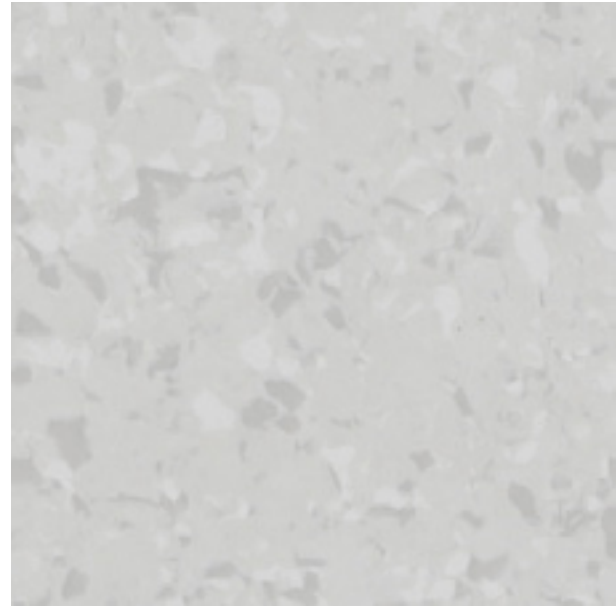
ISO 3

GMP-Class A

H₂O₂ RESISTANT



- 1 Surface treatment
- 2 2 mm calendared PVC single layer



■ HIGH PERFORMANCE SOLUTION FOR CLEANROOMS

■ 17% PLANT-BASED CONTENT



Sold in rolls of 20 x 2 m



Resistant to micro biological attacks

H₂O₂ RESISTANT

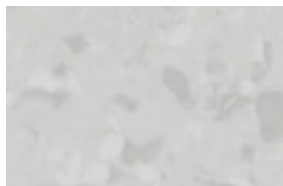
Resistant to decontamination process



Resistant to heavy load



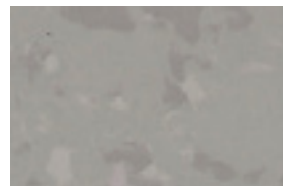
Resistant to chemical spills



6009 Grey Stone



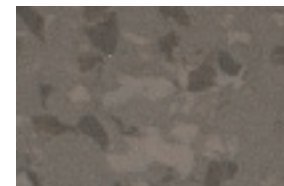
6039 Pebble



6029 Cloud



6043 Wood



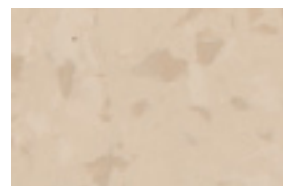
6044 Sea Storm



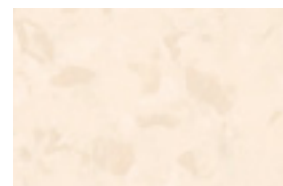
6008 Calico



6041 Clay



6031 Breeze



6001 Cotton



6032 Sunshine



6025 Tangelo



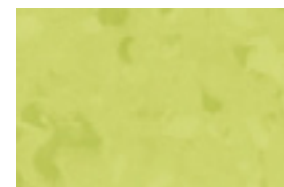
6075 Cardinal



6036 Oceania



6006 Blue Sky



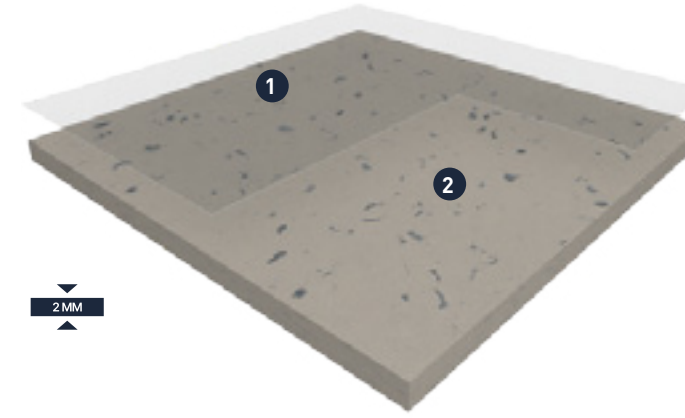
6027 Accacia

Mipolam Biocontrol Clean

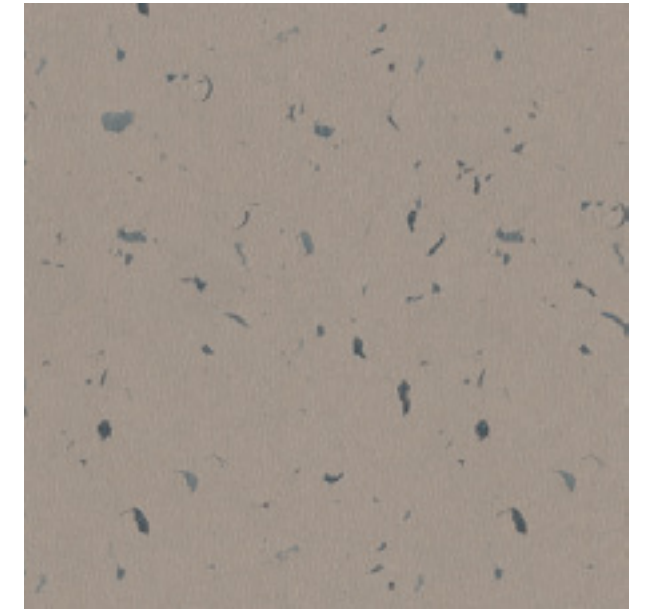
ISO 3

GMP-Class A

H₂O₂ RESISTANT



- 1 Surface treatment
- 2 2 mm calendared PVC single layer



■ THE REFERENCE FOR CLEANROOMS



Sold in rolls of 20 x 2 m

H₂O₂ RESISTANT

Resistant to decontamination process



Resistant to heavy load



Resistant to chemical spills



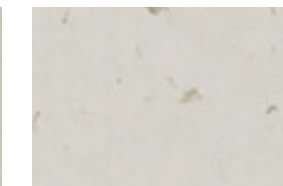
5445 Tree Bark



5443 Wood Path



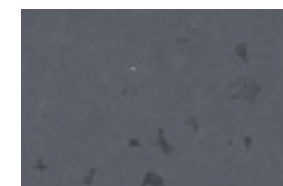
5441 Clay Soil



5412 Moon Stone



5404 Vanilla Sky



5459 Stormy Cloud



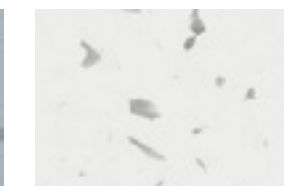
5430 Sideral Grey



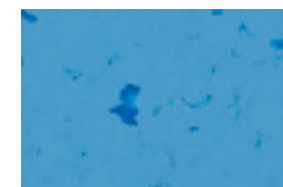
5413 Rain Fall



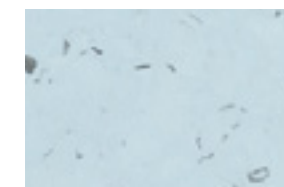
5420 Stone Powder



5408 Chalk Dust



5436 Tiger Eye



5406 Moqui



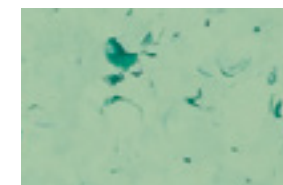
5427 Green Zest



5455 Lava Flow



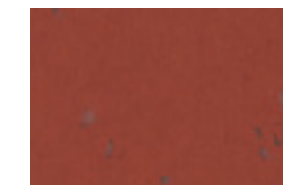
5432 Sun Stone



5417 Foggy Hill



5456 Intense Indigo



5475 Intense Ruby

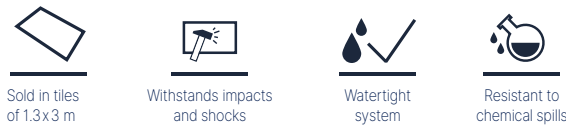
* More colours available

Decoclean wall panel system

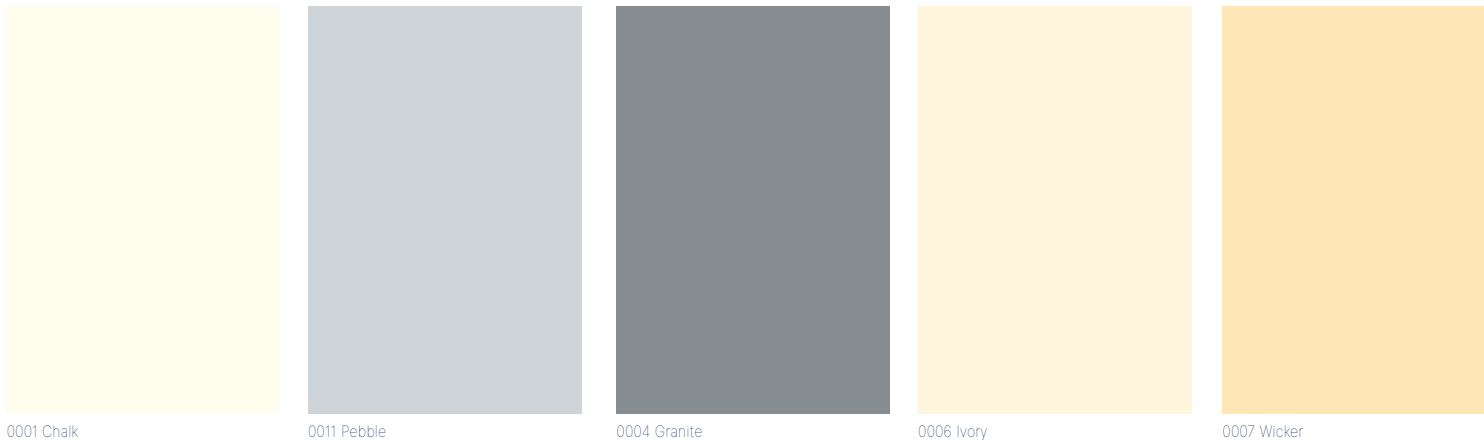
ISO 5 **GMP-Class A** **H₂O₂ RESISTANT**



1 Solid color PVC 2 mm thick



- **ANTIBACTERIAL HOMOGENEOUS** resilient wall panels PVC, tinted in the mass, thickness 2 mm
- **EASY TO INSTALL:** delivered with a peel-off protective film to avoid having to do a systemic cleaning after installation
- **LOW MAINTENANCE:** can be welded to floor for continuous floor-to-ceiling watertight room and resistant to chemical spills
- **RESISTANT TO NUCLEAR DECONTAMINATION** according to ISO 8690
- **BACTERIOLOGICAL RESISTANCE** according to ISO 22196, Class 1 (Bs2d0)
- **SUSTAINABLE:** REACH-compliant, GREENGUARD certified, low VOC, 100% recyclable, Phthalates-free, non polluting / non-toxic material, no heavy metals



0001 Chalk 0011 Pebble 0004 Granite 0006 Ivory 0007 Wicker



■ **WALL PROTECTION SOLUTION IDEAL FOR RENOVATION**

Clean corner system



Gerflor floor-to-ceiling smooth transition



- **COMPLIANT WITH GMP**
- **EASY COVING**
- **ULTRA RESISTANT BI-MATERIAL CORNER PROFILES**
- **QUICK AND EASY CLEANING AND DECONTAMINATION**



- 1 Clean Corner internal floor angle
- 2 Clean Corner external floor angle

Watertightness control system



- **VALIDATION:** the quality of the installation and the seal-tightness of the flooring is checked before commissioning.
- **RELIABILITY:** Periodic checks of the integrity of the flooring during service stoppages.
- **QUALITY:** Any defects can be repaired before commissioning. Any moisture-related problems are identified.
- **DECONTAMINATION:** Prevents a contamination zone from forming.





Z0013949

				Mipolam Biocontrol Performance	Mipolam Biocontrol Clean	GTI® Max Cleantech	GTI® EL5 Cleantech	Mipolam Biocontrol EL5	DecoClean
Performances in cleanroom									
Particulate emission	Fraunhofer method	ISO 14644-1	-	ISO3	ISO3	ISO3	ISO5	ISO5	ISO5
Air cleanliness	ISO 16000-6, -9,-11	ISO 14644-8	(µg/m ³ /h)	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 9.6	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 8.2	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 8.5	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 8	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 7.7	TCOV = unmesurable (23°C) ACCM/AMCm ≤ - 7.7
Anion emission	Fraunhofer method	ISO 14644-8	(µg/m ³ /h)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)
Amonium N emission	ISO 11732	ISO 14644-8	(µg/m ³ /h)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)	Unmesurable (23°C)
Static electrical propensity / Body voltage generation	EN 1815	-	kV	Antistatic: < 2	Antistatic: < 2	Antistatic: < 2	Antistatic: < 2	Antistatic: < 2	-
	IEC 61340-4-5 / ASTM 97.2	EN61340-5-1 ESD S2020	V	-	-	-	< 100	< 100	-
Electrical resistance	EN61340-4-1 ESD 7.1	EN61340-5-1 ESD S2020	Ω	Isolating: > 10 ¹¹ Ω	Isolating: > 10 ¹¹ Ω	Isolating: > 10 ¹¹ Ω	< 10 ⁹ Ω	< 10 ⁹ Ω	-
Resistance on Microorganism development on the floor ⁽¹⁾	ISO 846	BPF / GMP	Part A (fongj)	Good	Good	Good	Good	Good	-
			Part C (bacterial)	Excellent	Excellent	Very Good	Excellent	Excellent	-
Anti-viral activity ⁽¹⁾	VirHealth	ISO 21702	VirHealth	99.7% after 2 h 99.9% after 5 h	99.7% after 2 h 99.9% after 5 h	-	-	99.7% after 2 h 99.9% after 5 h	99.96 % after 2h 99.99 % after 5h
Anti-bacterial activity ⁽¹⁾	Intertek	ISO 22196	INTERTEK	> 99% inhibits growth	99% inhibits growth	-	-	> 99% inhibits growth	> 99 % de réduction
Chemical resistance	ISO 2812-1	ISO 14644-4/BPF	-	Excellent	Excellent	Good	Excellent	Excellent	Excellent
Nuclear decontamination	-	ISO 8690	-	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Resistance to gaseous H ₂ O ₂	Bioquell	ISO 14644-4/BPF	-	No alteration	No alteration	No alteration	No alteration	No alteration	Unmesurable (23°C)
Maximum static load	-	ASTM F970	-	- .002" under 250 psi and up to 2000 psi	- .002" under 250 psi and up to 2000 psi	- .002" under 250 psi and up to 2000 psi	- .002" under 250 psi and up to 2000 psi	- .002" under 250 psi and up to 2000 psi	-
Fire behaviour	-	EN 13501-1	Class	Bfl-S1	Bfl-S1	Bfl-S1	Bfl-S1	Bfl-S1	Bs2d0
Fire rating	-	ASTM E 648	Class	Class 1	Class 1	Class 1	Class 1	Class 1	Class A
Slip resistance	-	DIN 51 130	Class	R9	R9	R10	R9	R9	-
Coefficient of friction	-	ASTM D 2047	-	0.56 (OK)	0.56 (OK)	0.56 (OK)	0.56 (OK)	0.56 (OK)	-
		ASTM C 1028	-	Meets requirements	Meets requirements	Meets requirements	Meets requirements	Meets requirements	-

Description

Total thickness	-	EN ISO 24346 (EN428)	mm	2 (0.08")	2 (0.08")	6 (1/4")	6 (1/4")	2 (0.08")	2 (0.08")
Roll size	-	EN ISO 24341 (EN426)	m	2 x 20 (6'6 x 66')	2 x 20 (6'6 x 66')	-	-	2 x 20 (6'6 x 66')	-
Tile size*	-	EN ISO 24342 (EN727)	mm	608 x 608 (23.9" x 23.9")	608 x 608 (23.9" x 23.9")	600 x 600 (23.6" x 23.6")	650 x 650 (25.6" x 25.6")	608 x 608 (23.9" x 23.9")	1300x3000 (4.26» x 9.8»)
European classification	-	EN ISO 10874 (EN685)	Classification	34-43	34-43	34-43	34-43	34-43	-
Reference specification	-	ASTM F1913	-	Meets requirements	Meets requirements	Meets requirements	Meets requirements	Meets requirements	-
		EN 14041	-	Meets requirements	Meets requirements	Meets requirements	Meets requirements	Meets requirements	-

* Measured before installation / ** Measured with ESD shoes compliant with ESD S20.20 and IEC 61340.5.1
(1) Subject to respect of appropriate maintenance and decontamination protocols.



we care / we act Our Commitments for a Sustainable future



CARBON FOOTPRINT*
-20 % kg CO₂ equivalent/m² between 2020 and 2025



BIO-SOURCED CONTENT***
10 % by 2025



RECYCLED CONTENT
30 % by 2025



ADHESIVE FREE**
35 % by 2025



ANNUAL VOLUME RECYCLED
60 000 t by 2025



* Scopes 1 and 2 defined in the GHG protocol *** % of activity with biosourced materials ** % of activity - adhesive free solution