



# **UNDER CONTROL** portfolio

Forbo's ESD and cleanroom flooring

creating better environments

**Forbo**  
FLOORING SYSTEMS



# KEEP THE ENVIRONMENT UNDER CONTROL

In most sensitive environments where critical processes take place, ESD- and or particle control is required. These environments are also known as ‘controlled environments’ and are most common in the life science, electronics and healthcare segments.

Controlled environments require certain measures to control for example:

- Electrostatics
- Volume and size of airborne particles
- Gas emissions
- Presence of micro-organisms, such as: viruses, bacteria and mould

Forbo offers a range of products to meet the needs in these segments. The Under Control portfolio has been developed to create synergy between the several collections.

Collections included are:

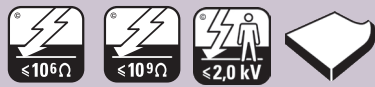
- Colorex
- Sphera SD | EC
- Marmoleum Ohmex





# IS SAFE. STAYS SAFE.

colorex®



Colorex is Forbo's advanced technical flooring system in tile format. The collection is especially designed to withstand and control most demanding conditions. It offers a suitable solution for highly sensitive areas such as cleanrooms and for most demanding production sites in the electronics, life sciences and manufacturing industry. Not only does Colorex provide an advanced technical solution, it is also aesthetically pleasing, enhancing any commercial interior from industrial to healthcare establishments.

ESD control, particle control, moisture control or a combination, the various Colorex ranges offer heavy duty solutions to meet the highest demands. You can have peace of mind that Colorex complies to every standard and norm that is required today and likely to be required tomorrow.

- The technology ensures a permanently conductive product guaranteeing optimal performance throughout the life of the product, regardless of the humidity level of the area. Colorex fully complies with all ESD standards.
- The surface of Colorex can be fully restored and repaired extending the useful life of the product.
- The low plasticizer content in Colorex tiles creates excellent dimensional stability and prevents shrinkage. This avoids tension on welding rods and ensures joints won't open up after installation, what is very critical for the hygiene.



EC 250201 | everest

- The low plasticizer content also ensures extremely low emissions and outgassing, making Colorex the right choice for cleanrooms. Colorex fully complies with all cleanroom standards, confirmed by the Fraunhofer institute.



SD 150206 | moonstone SD 150231 | sole

- The dense construction of Colorex and the Colorex plus loose lay system provides excellent resistance to heavy loads making it an ideal solution for commercial and industrial environments.

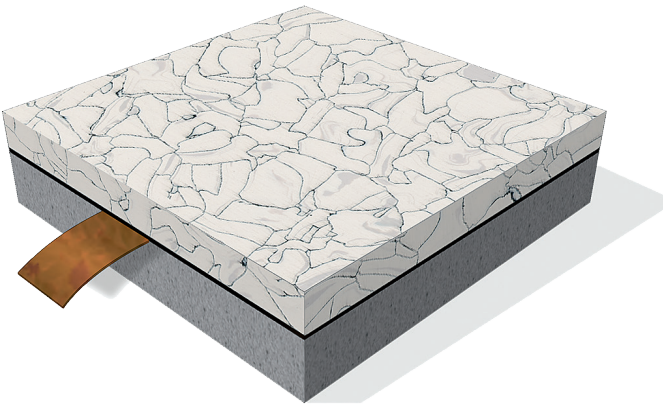
- Colorex is available in tile format, a prerequisite for raised access floors found in many commercial environments such a data centres and server rooms.

- There is an option to add safety signs and guiding with Colorex signal and Colorex signal glow.

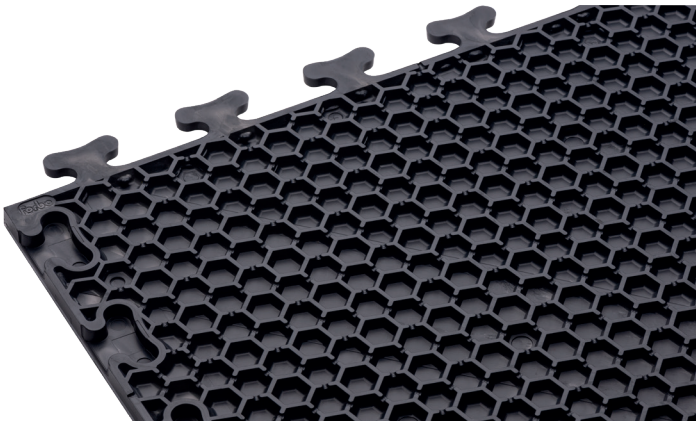
The Colorex collection offers a choice of different levels of conductivity (SD and EC). The tiles can be installed by fully adhering directly to the subfloor or by bonding it to a raised access floor panel. Furthermore the Colorex plus options offer a heavy duty loose lay solution, with a unique dovetail system and a honey comb backing. The Colorex plus system is available with conductive properties (plus EC), for areas where down time, damp floors or subfloors are an issue and the control of static electricity is required. The plus system is also available without conductive properties (plus basic) for areas with high traffic needing daily intensive cleaning. In addition there is a version with a textured surface for enhanced slip resistance available (plus R10), to improve safety when there is a risk of contamination of the floor by for example powder or water spillage.

In addition, the collection includes Colorex signal items, which can be used for safety signals and guidance. Colorex signal glow is especially developed to create a glow in the dark effect, for example to indicate emergency exits or to mark escape routes.

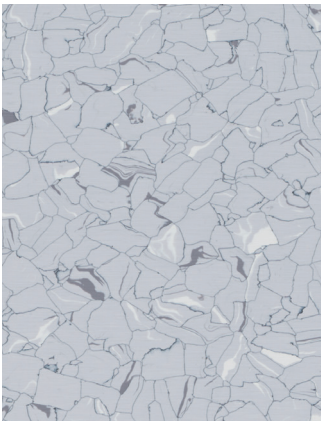
The total Colorex range comprises of 25 colours. Details and a collection overview can be found on [www.forbo.com](http://www.forbo.com).



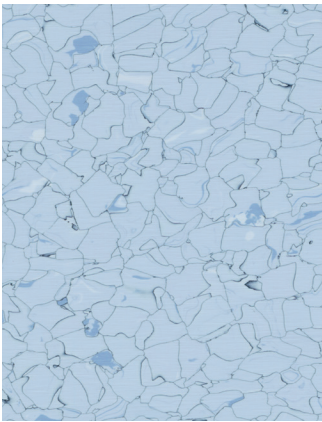
Colorex | product build up



Colorex plus | honeycomb backing and dovetail system



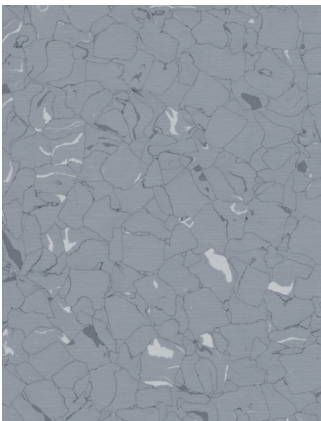
SD 150205 | EC 250105 | adula\*



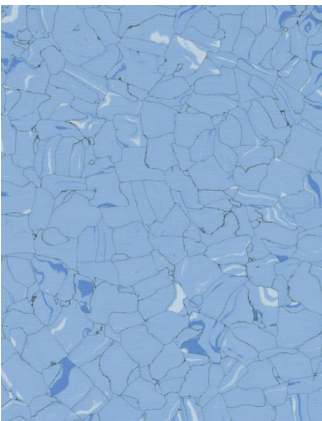
SD 150221 | EC 250221 | pacific



SD 150204 | EC 250104 | montblanc\*



SD 150207 | EC 250107 | quartz\*



SD 150222 | EC 250222 | niagara\*

\*Also available as Colorex plus system



# A TRUSTWORTHY SOLUTION

# sphera® SD | EC



Sphera SD | EC is Forbo's homogeneous vinyl collection with conductive properties in sheet format. The collection is specifically designed to control static discharges and particle emissions in the most sensitive environments, such as pharmaceutical, MedTech and healthcare facilities. Sphera SD | EC provides permanent ESD control, regardless the conditions of the environment.

In addition Sphera SD | EC ensures the highest hygienic properties and very good chemical resistance, thanks to the SMART control ⚡ top. Due to this conductive PUR coating, the floor is resistant to stains, scuffmarks and scratches. Design, technology and performance meet in Sphera SD | EC's high-quality and visually attractive flooring solution.

- Innovative product development and carefully controlled production processes ensure a solution with permanent conductive properties, which comply with all ESD standards.
- Optimal performance of the product will remain throughout the lifetime of the product, regardless of the conditions of the environment, such as the relative humidity level in the application area.
- In critical areas, control of cleanliness of the air and surfaces is essential to reduce the risk of contamination with particles or microorganisms. Sphera EC has been approved for cleanrooms up to class 5 and Sphera SD for cleanrooms up to class 6 by the Fraunhofer institute.
- Sphera SD | EC ensures low TVOC emissions and outgassing. This is vital for application areas where sensitive materials are used and it contributes to a healthy indoor environment. TVOC emissions are ≤ 0,01 mg/m³.
- The unique SMART control ⚡ top makes Sphera SD | EC resistant to stains and scratches, for a durable and hygienic solution.
- Thanks to the conductive backing on Sphera SD | EC, there is no need for conductive adhesive underneath the full sheet. This reduces installation costs and the risk of installation errors. Only on the copper strip the floor needs to be attached with conductive adhesive.



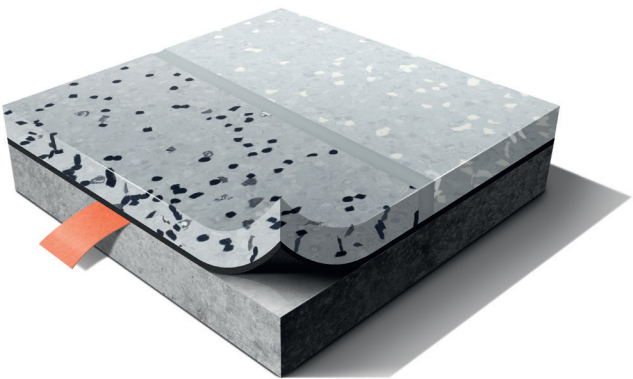
SD 550032 | soft lilac SD 550034 | amethyst



EC 450036 | water

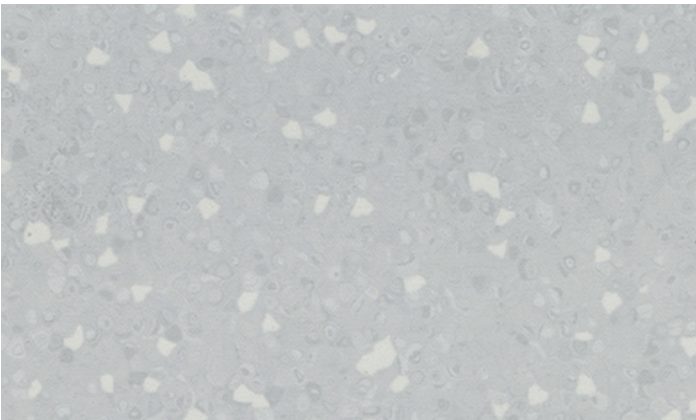
The Sphera SD | EC collection consists of two ESD sheet flooring systems, with different levels of conductivity. A static dissipative (SD) solution and an electrostatic conductive (EC) solution. Both flooring solutions can be used throughout a wide variety of application areas, where permanent ESD control and high hygiene standards play a major role.

Sphera SD | EC can be installed by fully adhering it directly to the subfloor. The conductive backing on Sphera SD | EC makes the installation easier, more cost effective and less critical when it comes to ESD performance. There is no need for conductive adhesive underneath the full sheet. Only on the copper strip the floor needs to be attached with conductive adhesive.

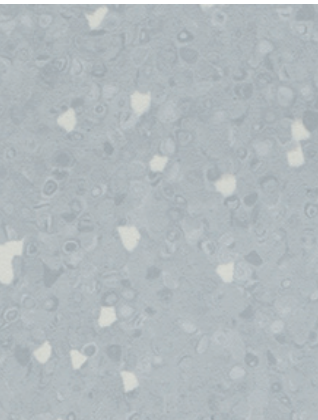


Sphera EC and Sphera SD | product build up with conductive backing

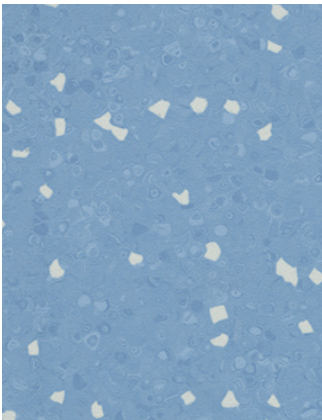
The total Sphera SD | EC range comprises of 27 colours. Details and a collection overview can be found on [www.forbo.com](http://www.forbo.com).



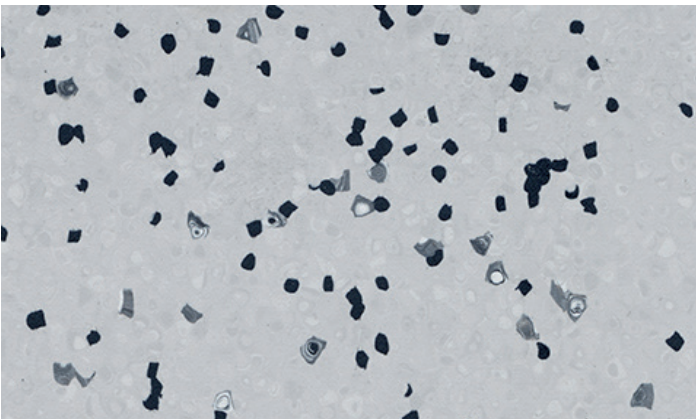
SD 550003 | light neutral grey



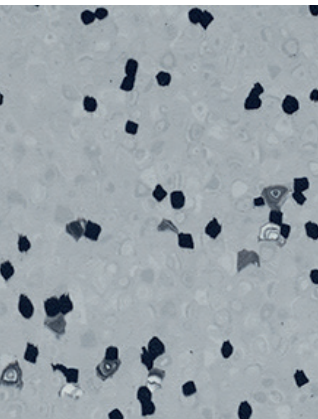
SD 550008 | silver grey



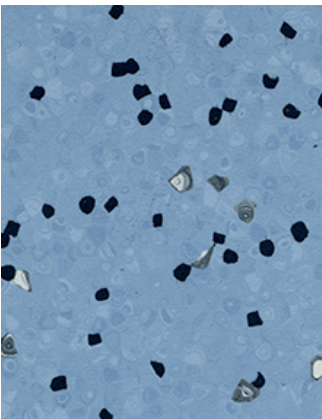
SD 550037 | China blue



EC 450003 | light neutral grey



EC 450008 | silver grey



EC 550037 | China blue



# MOST SUSTAINABLE, NATURAL SOLUTION

marmoleum® ohmex

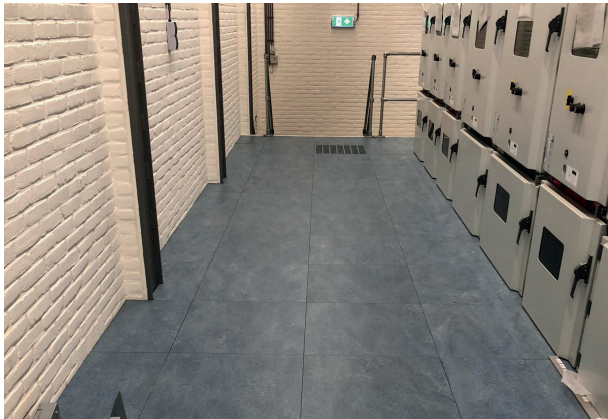


Marmoleum Ohmex is Forbo's most sustainable static dissipative flooring solution, created from natural, renewable and recycled raw materials. It contains no phthalates, no plasticizers and no mineral oil. Marmoleum Ohmex is designed for specific applications in controlled environments, such as intensive care units, x-ray and MRI rooms, server rooms and data centers.

- Most sustainable, natural static dissipative (SD) flooring solution. Contributes to minimizing the customers' environmental footprint and has a positive effect to the environmental challenges of nowadays, while ensuring a safe environment which is not affected by electrostatics (provided that the relative humidity is above 40%).
- Created from natural and renewable and recycled raw materials, which means you are literally bringing the nature inside and create a healthy indoor environment.
- Marmoleum Ohmex ensures an anti bacterial effect. Marmoleum flooring is naturally bacteriostatic; it offers lasting bacteriostatic properties without antimicrobial additives. Just like tree rosin that naturally protects a tree from bacteria. The anti baceterial effect and sheet properties of Marmoleum Ohmex contribute to the hygienic requirements and standards of the area.
- Low emissions are ensured. With TVOC's 30 times lower than the European norm, Marmoleum Ohmex contributes to a healthier indoor environment.
- Easy and time efficient installation of Marmoleum Ohmex is ensured due to the sheet properties of the product.



73055 | fresco blue



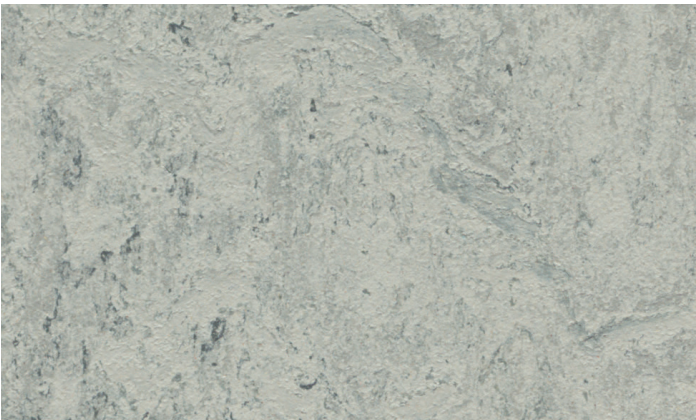
73146 | serene grey

Marmoleum Ohmex is a linoleum floor covering that meets higher requirements for electrical conductivity. It's electrical resistance is improved to  $< 1-108\Omega$  (in accordance with EN1081). This ensures personal safety and protects equipment that is sensitive to static electricity, like computers and other electronic devices. Marmoleum ohmex is 2.5 mm thick and available in six colors.



Marmoleum Ohmex | product build up

The total Marmoleum Ohmex range comprises of 6 colours. Details and a collection overview can be found on [www.forbo.com](http://www.forbo.com).



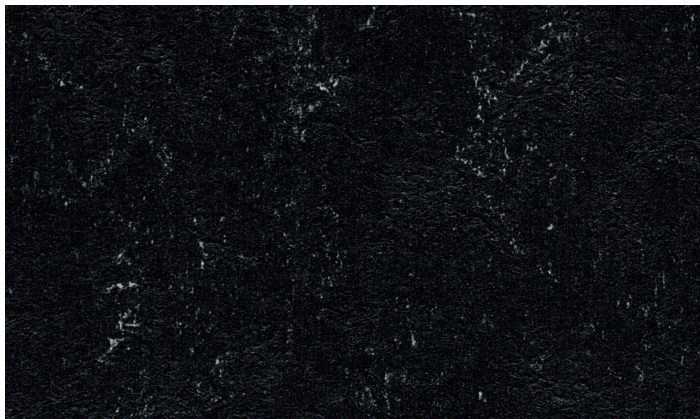
73032 | mist grey



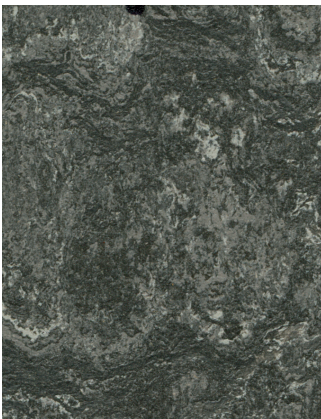
73146 | serene grey



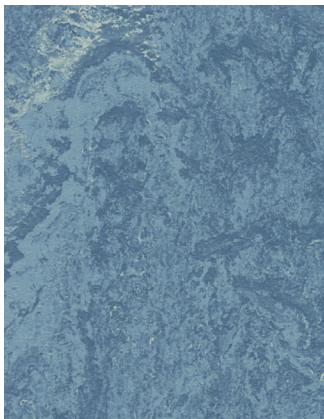
73038 | Caribbean



72939 | black



73408 | graphite



73055 | fresco blue



# KEEP THE ENVIRONMENT UNDER CONTROL

Forbo offers a wide range of flooring solutions which serve the requirements of most demanding and critical controlled environments. Whether particles and electrostatics need to be controlled or heavy duty must be endured, Forbo can provide the right solution. Due to the years of experience and inhouse expertise, the highest quality and the best solutions for all needs and problems faced in controlled environments are ensured. Keep the environment under control with Forbo's Under Control flooring solutions.

## Electronics

Airborne Molecular Contamination (AMC) and off-gassing can have a detrimental effect on products and processes. Building and cleanroom construction materials can be sources of environmental pollutants such as dust, airborne microbes, aerosol particles, and chemical vapours. Forbo's Under Control solutions Colorex and Sphera SD | EC ensure very low emissions and outgassing, according to the relevant ISO standards. Also the cleanliness of the air and surfaces will be ensured.

Due to the ESD properties of Forbo's Under Control solutions, components vulnerable to discharge will be protected and product failure will be prevented.

## Life sciences

In life science areas, cleanroom conformity plays a major role. The cleanliness of the air and surfaces must be controlled, and the risk of contamination with particles or micro-organisms must be limited. Forbo's Under Control solutions Colorex and Sphera SD | EC are certified for cleanrooms and are able to withstand the harsh chemicals and cleaning processes used in the industry. ESD control protects contaminants via ESA, aids processing of powders and prevents explosion risks from chemicals. The Under Control solutions won't deteriorate functionally or aesthetically overtime.

## Healthcare

When it comes to highly sensitive healthcare areas, Forbo can offer most hygienic and safe solutions. From radiology rooms which require careful ESD control, to operating theatres where the highest hygienic standards are important. Also heavy traffic from beds, (motorized) wheelchairs or equipment is mainly part of the daily business in healthcare and is no problem for the Under Control solutions of Forbo at all. The flooring systems ensure a durable, highly stable and indentation resistant solution.

## Manufacturing

In heavy duty areas found in manufacturing facilities the floor must be able to withstand heavy rolling traffic, falling loads and high point loading. In the event of damage, the floor must be easily repaired. These aspects are no problem for Forbo's Colorex range. Downtime reduction and no problems with the subfloor can be ensured. ESD flooring eliminates the risk of miniature sparks, which can be the trigger for explosions in areas with inflammable gasses, ammunition or high concentrations of dust.

# CHOOSE THE RIGHT SOLUTION

	PROJECT REQUIREMENTS						INSTALLATION REQUIREMENTS			
	Tile or sheet	Intensity of loads	ESD control	Particle control and cleanroom suitability	Chemical resistance	Repairable solution	Slip resistance	Subfloor tolerance	Installation method	Installation efficiency
Colorex® SD	Tile	Extreme	Permanent static dissipative	ISO class 4	Excellent	Can be fully restored and repaired	R9	Medium	Glued	Medium
Colorex® EC	Tile	Extreme	Permanent electrostatic conductive	ISO class 2	Excellent	Can be fully restored and repaired	R9	Medium	Glued	Medium
Colorex® plus EC	Tile	Heavy	Permanent and consistent electrostatic conductive	ISO class 2	Excellent	Can be fully restored and repaired	R9	High	Loose lay	Very high
Colorex® plus basic	Tile	Heavy	Antistatic	ISO class 4	Excellent	Can be fully restored and repaired	R9	High	Loose lay	Very high
Colorex® plus R10	Tile	Heavy	Antistatic	ISO class 6	Excellent	Partially restorable	R10 - Textured surface for enhanced slip resistance	High	Loose lay	Very high
Sphera SD	Sheet	Moderate	Permanent and consistent static dissipative	ISO class 6	Very good	-	R10	Low	Glued	High
Sphera EC	Sheet	Moderate	Permanent and consistent electrostatic conductive	ISO class 5	Very good	-	R10	Low	Glued	High
Marmoleum Ohmex	Sheet	Moderate	Static dissipative with relative humidity > 40 %	-	Good	-	R10	Low	Glued	Medium







Forbo Flooring Systems is part of the Forbo Group, a global leader in flooring and movement systems, and offers a full range of flooring products for both commercial and residential markets. High quality linoleum, vinyl, textile, flocked and entrance flooring products combine functionality, colour and design, offering you total flooring solutions for any environment.

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