



# **colorex<sup>®</sup> and sphaera<sup>®</sup> SD | EC**

Leading the way in ESD flooring for manufacturing

creating better environments

**forbo**  
FLOORING SYSTEMS



# PROVIDING PEACE OF MIND IN MANUFACTURING ENVIRONMENTS

Forbo Flooring Systems is an international market leader with a wealth of experience in providing ESD and cleanroom flooring. Within the wide range of Forbo products, there are several collections which offer a solution for the highest requirements and needs of controlled environments. These collections are featured in Forbo’s Under Control portfolio. Whether you are a chip manufacturer, a third party component manufacturer or an OEM automotive manufacturer, Forbo’s Under Control offer will protect your products and profit.

Each solution within the portfolio contains specific properties that we offer to meet very high requirements of a controlled environment in ESD cleanroom, manufacturing and assembly across the automotive industry and beyond.

Keep everything **Under Control**. Under Control refers to what is important: making sure the environment is managed, everything is controlled and kept safe. It also refers to the base, to the floor.

One of the most trusted brands on the market is the homogeneous vinyl tile collection Colorex. 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 newest addition to the flooring offer for controlled environments is Sphera SD | EC. This homogeneous vinyl sheet flooring provides permanent ESD control and is suitable for light industrial application areas.



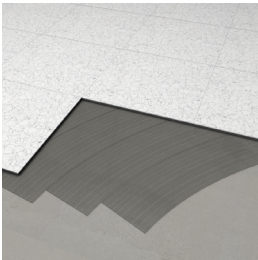
# IDEAL FOR CHALLENGING INDUSTRIAL ENVIRONMENTS

Industrial environments present their own flooring challenges, particularly in areas with high wear and tear. Forbo’s high performance floor covering systems are designed for use in all industrial areas including the toughest of settings. Advancement in in-car technology must be matched by even greater control of contamination and static discharges in the manufacturing environment.

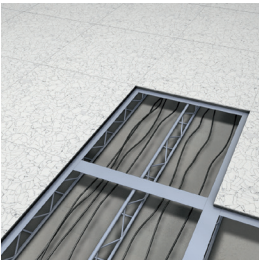
### Colorex SD | EC

Colorex SD | EC are premium conductive glue down tiles that are highly dimensionally stable, offer low emissions and are available with two ranges of conductivity: static dissipative and electrostatic conductive. They can be installed by fully adhering them directly to the subfloor. The unique dimensional stability ensures no shrinkage and therefore a correctly installed weld will never open up.

Often Colorex is bonded to a raised access floor panel that can be used in cleanrooms. Due to the strength and unique properties of Colorex, it is suitable for use on all formats of raised access floor panels, including those designed to withstand heavy point loading. Since Colorex has extremely low emissions and a high density, it can be perforated for air flow systems that are often used in combination with raised access floors.



Colorex with welded seams fully adhered directly to the floor



Colorex bonded to a raised access floor panel

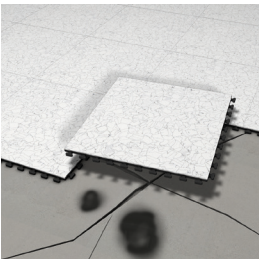
### Colorex plus

Colorex plus is a loose lay conductive floor system with a surface composed of Colorex tile material. This ensures all the benefits of standard Colorex, such as high density, easy repair and stain resistance but also combines the benefits of a heavy duty loose lay tile.

Colorex plus can be installed quickly and easily without the need for conductive adhesive. Specific, expensive sub floor treatment or preparation is not necessary as long as the floor is reasonably level.



colorex® SD | EC | plus



Colorex as loose lay tile: colorex® plus EC

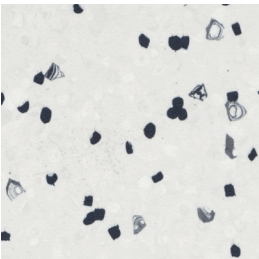
### Sphera SD | EC

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.

Sphera SD | EC provides permanent ESD control, reducing the buildup of static electricity which can cause attraction of powders, dust and other contaminants. Thanks to the SMART control ⚡ top, the surface is easy to clean.



sphera® SD



sphera® EC



# LOOSE LAY MODULAR SOLUTIONS

Renovating an industrial floor can be a very costly and labour intensive project. The downtime needed to move or disassemble heavy production equipment and the expense of renovating a complex subfloor have to be accounted for, in addition to the cost of installing a new floor surface. Colorex plus, a high performance loose lay tile solution, which can provide a cost effective alternative.

Colorex plus can be installed without disruption of activities and it can be used immediately after installation, even by forklift trucks. The unique honeycomb structure on the back of Colorex plus allows damp floors to be ventilated during use. Colorex plus tiles offer all the benefits associated with Colorex along with an unique dovetail system that remains hidden under the surface.

In constantly changing production areas, especially when the site is leased, the requirement is for a flexible flooring solution that can be uplifted and relocated to meet the needs of the business, rather than permanently fixed flooring. Colorex plus is easy to relocate.



Colorex plus is available as electrostatic conductive (EC). Additionally the Colorex basic version is available for installations where conductivity is not required. The Colorex plus collection is complemented with a R10 slip resistant option that can be used in conjunction with all other types of Colorex plus tiles for areas of heavy duty usage.

The shared dovetail connection allows the products to be seamlessly connected. A range of specially developed ramps and skirtings are available for use with Colorex plus to provide a complete installation solution.



COLOREX PLUS EC	COLOREX PLUS R10	COLOREX PLUS BASIC
<b>Permanently conductive</b> Colorex plus EC is a heavy duty loose lay floor system. It is permanently conductive via the connection between tiles through the dovetail system and connected to earth with a copper strip. Colorex plus EC performs regardless of the humidity level of the area. Compliant to IEC 61340-4-5 with appropriate ESD shoes.	<b>Antistatic</b> Colorex plus R10 is a heavy duty loose lay floor system with a textured surface for enhanced slip resistance (R10). The surface structure improves safety when there is a risk of contamination of the floor, for example through powder or water spillage.	<b>Antistatic</b> Colorex plus basic is a heavy duty loose lay floor system, which provides excellent chemical resistance. The floor can also be repaired in case of heavy damage.
<b>Application areas</b> Renovation of ESD facilities and production sites. Suitable when down time, damp floors or poor subfloors are an issue.	<b>Application areas</b> Places where slip resistance is required, such as production sites.	<b>Application areas</b> Shops, stores, warehouses. Areas with high traffic needing daily intensive cleaning. Suitable when downtime, damp floors or poor sub floors are an issue.

# MAJOR PROBLEMS FACED BY CUSTOMERS

At Forbo we understand the needs and challenges of the industrial environments. Our solutions do not stop at the threshold of a cleanroom. We can supply advanced high performance flooring for all ESD sensitive areas in industrial settings, extending across the factory floor and into every area of the site as required.

**Cracked flooring**  
Unacceptable in any cleanroom or contamination critical area is cracked flooring. Unlike resin poured floors, vinyl flooring has a minimal likelihood of cracking. Colorex is highly resistant to high point loading, rolling traffic and falling loads. If damage does occur, the floor can be easily repaired and restored.

**Subfloor humidity**  
Commonly known to be one of the biggest causes of flooring failure, subfloor humidity will emulsify adhesives and cause poured resin floors to lift. Colorex plus is unaffected by subfloor humidity thanks to its unique raised and ventilated honeycomb.

**Cost and time required to uplift existing floors**  
Colorex plus can be overlaid onto existing cracked flooring once the damage has been patched.

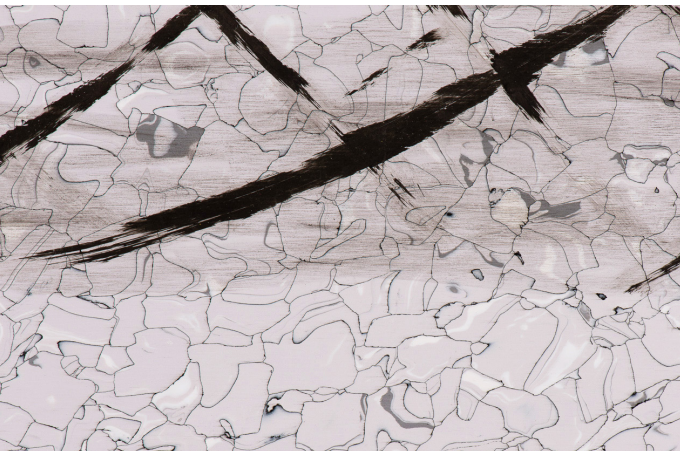
**Costly downtime for flooring renovation**  
Colorex plus can be fitted dust-free in a fraction of the time required to lay a traditional poured floor or install glue-down sheet options.

**Repairs and unsightly patching**  
It is difficult to effectively repair many types of flooring commonly used in manufacturing environments, and over time, an unsightly patchwork effect can be created. If damage occurs, Colorex can be invisibly repaired with ease, ensuring that the appearance of the floor can be maintained for many years.

**Chemical staining**  
A common cause of functional and aesthetic degradation of floors is in the construction of a floor. Colorex has excellent chemical resistance thanks to its pore-free surface construction and low plasticizer formulation. Sphera SD | EC is protected against stainings, thanks to the SMART control ⚡ top. Both collections can withstand harsh cleaning processes.



A piece of Colorex can be used for a seamless repair



Heavy soiling on the floor can be fully removed

# A UNIQUE MANUFACTURING METHOD

## HOW COLOREX IS MADE

For decades, Colorex has been produced by Forbo in a factory which specializes in the production of vinyl ESD tiles. The production process has been specifically set up for this product and the development work is carried out by ESD specialists with extensive knowledge of the application areas.

**Step 1: Chips and conductive coating**

Vinyl chips are coated with a conductive substance.

- The coating on the chips ensures that the ESD properties are consistent throughout the product.
- The construction ensures permanently conductive or dissipative properties over time.
- The technology used guarantees performance, regardless of changes in humidity and temperature.

**Step 2: High pressure production**

By applying very high pressure and a high temperature, these coated chips are then compressed into solid blocks of homogeneous material.

- After pressing, the conductive coating around each chip forms a dense, continuous network of tiny black veins.
- The continuous paths enable safe electrostatic discharge across both the width and the depth of the tile.

**Step 3: Splitting and surface treatment**

Colorex tiles are cut from the solid blocks of homogeneous material and machine finished to provide a pore free surface.

- Colorex is a highly compressed tile with a compact pore free, easy to clean and repairable surface.
- Batch information is printed on the back of each tile to enable easy identification.

**Finished product**

To ensure the integrity of the product post-production, special care is taken to get the product to the final location in good shape.

- Distinct labelling of the pallet.
- Protection to prevent damage during transport and handling.

# THE BENEFITS

## OF COLOREX

It is the unique way in which Colorex is made that gives this advanced technical floor covering its exceptionally high density, heavy load resistance and durability. These are critical performance properties for production and assembly areas, including challenging heavy manufacturing facilities where resistance to point loading and heavy rolling traffic is demanded.

The dense construction and pore free surface, resulting from the application of intense heat and pressure, combine to give Colorex its inherent resistance to chemicals and staining and allow extensive and effective surface repairs to be made avoiding the need to replace tiles.

Whilst offering the performance features normally associated with ESD ‘sheet’ products, Colorex tiles do not require the high plasticizer content that gives sheet vinyl its flexibility, but which can also result in outgassing and poor mechanical performance.

Colorex has only minimal plasticizer content and exceptionally low VOC emissions, providing the perfect solution for any environment where micro contamination has to be controlled.

**Customer references for Colorex**

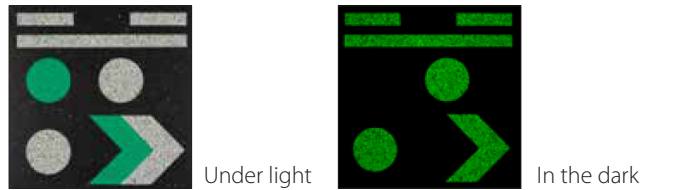
• Siemens	• Hella
• Bosch	• Porsche
• Audi	• Nexteer Automotive
• Continental	• ASK



### Why choose Colorex?

- 1 | 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 with the resistance to electricity being monitored continuously, online, through the production process.
- 2 | The surface of Colorex can be fully repaired extending the useful life of the product.
- 3 | The low plasticizer content in Colorex tiles creates a unique dimensional stability and prevents shrinkage.
- 4 | The low plasticizer content also ensures extremely low emissions and outgassing making Colorex the right choice for any area where control of micro contamination is required.

- 5 | 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.
- 6 | Colorex fully complies with all ESD and cleanroom standards, which have been verified by independent bodies including the Fraunhofer Institute.
- 7 | There is an option to add safety signs and guiding with signal and glow.



\*Measurement reports are available upon request.



# STATE-OF-THE-ART PROCESS

## HOW SPHERA SD | EC IS MADE

Forbo has invested in the most up to date equipment and technology available to provide customers with products and solutions of constant and exceptional quality from sources that are fully operated and controlled by Forbo employees. The manufacturing process for Sphera SD | EC includes five main steps:

**Step 1: Producing granulate**

Forbo's new internal extrusion process enables the controlled creation of granules in an efficient way. PVC granules are created by extruding PVC dry blend and colour pigments. The functional granules are separately produced using a similar process, with a conductive black carbon component for Sphera EC.

**Step 2: Mixing**

The size and ratio of coloured and functional chips is carefully set to make sure that the distribution of the functional granules is sufficient to consistently meet all conductivity requirements. No matter which spot on the floor is chosen to do the measurement.

**Step 3: Sheet making**

The granules are then released by precision scatter units onto a conveyor belt. A steel-belt press forms a homogeneous sheet with a truly non-directional visual. Unlike conventional manufacturing, there is no need to back sand the product, which means there is no over-application of granules (less waste) and the process is more energy efficient.

**Step 4: Lacquering, embossing and backside primer**

In-line, Sphera SD | EC has a conductive UV-cured lacquer applied on the top of the product. The embossing achieves a particularly matt finish, which diffuses light and conceals any minor sub-floor imperfections. Forbo calls this SMART control ⚡ top, as it provides permanent and consistent conductivity and very good resistance to stains and scuffmarks. On the reverse of the product, a permanently conductive primer is applied.

**Step 5: Relaxation**

Homogeneous vinyls acquire tension during production. The tension in Sphera SD | EC is removed by heating the material again and then slowly cooling to achieve the most dimensionally stable sheet product in this category.

# THE BENEFITS

## OF SPHERA SD | EC

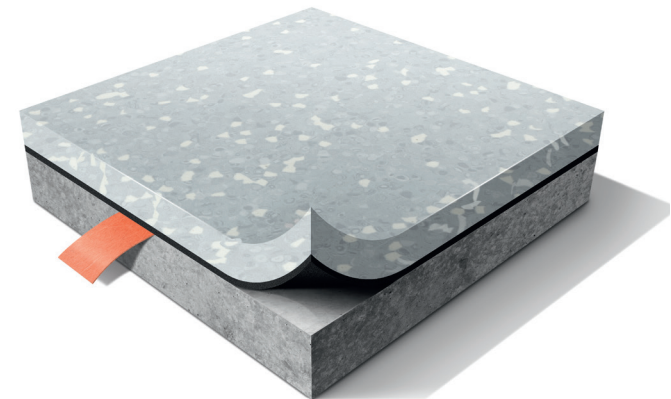
The Forbo Sphera SD | EC sheet collection offers a trustworthy solution delivering consistently high quality for the most demanding of controlled environments. Our technical flooring solution will perform regardless of the conditions of the area.

Forbo's Sphera SD | EC collection is an innovative addition to the product category of homogeneous conductive vinyl flooring. Design, technology and performance meet in this high-quality and visually attractive flooring solution.

For Sphera SD an innovative technology is used to create a permanent dissipative, consistently performing granule. Integration of this granule in the product ensures an electrical resistance of  $1 \times 10^6 \leq R \leq 10^8 \Omega$ .

For the production of Sphera EC ingredients from our Colorex technology are used; a proven consistent high performance technology and product with many years of experience. These ingredients ensure that Sphera EC has an electrical resistance of  $5 \times 10^4 \leq R \leq 10^6 \Omega$ .

The SMART control ⚡ top is the finishing touch on both Sphera SD and EC. It protects the floor against stains, scuffmarks and gives the floor a saturated high end appearance.



sphera®SD



sphera®EC

### Why choose Sphera SD | EC?

- 1** | Innovative product development and carefully controlled production processes ensure a solution with permanent conductive and dissipative properties, which comply with all ESD standards.

**2** | 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 area.

**3** | The unique SMART control ⚡ top makes Sphera SD | EC resistant to stains and scratches, for a durable and easy to clean solution.

**4** | Low TVOC emissions and outgassing. Vital for application areas where sensitive materials are used, contributing to a healthy indoor environment. TVOC emissions are  $\leq 0,01 \text{ mg/m}^3$ .

**5** | In critical areas, control of cleanliness of the air and surfaces is essential to reduce the risk of contamination with particles or microorganisms. Sphera SD has been approved for cleanrooms to class 6 and Sphera EC for cleanrooms to class 5, as confirmed by the Fraunhofer Institute.



# HOW TO CHOOSE COLOREX OR SPHERA SD | EC

We constantly strive to produce sustainable flooring solutions that create better environments across all application areas. At the same time we help to take care of the natural environment through our commitment to sustainable development, responsible raw material procurement and manufacturing processes.

Colorex offers complete peace of mind as it fully complies with all ESD and cleanroom standards. Sphera SD | EC is a trustworthy solution for most application areas in controlled environments. Both products have been extensively tested and verified by independent bodies including Fraunhofer IPA. Which product is the best solution depends on the specific circumstances of the premises, application area and requirements. Contact a Forbo specialist for detailed information.

	Permanent and consistent ESD control	Cleanroom conformity and particle control	Dimensional stability and seams	Chemical resistance	Contamination control and hygienics	Heavy loads resistance	High point loads resistance	Repairability and restorability
colorex® SD	Static dissipative	ISO 4	≤ 0.05%, more seams	Excellent	Excellent	Extreme	1500 PSI	Can be fully restored and repaired
colorex® EC	Electrostatic conductive	ISO 2	≤ 0.05%, more seams	Excellent	Excellent	Extreme	1500 PSI	Can be fully restored and repaired
colorex® plus EC	Electrostatic conductive	ISO 2	≤ 0.25%, interlocking dovetails	Excellent	Excellent	Heavy	1500 PSI	Can be fully restored and repaired
sphera® SD	Static dissipative	ISO 6	≤ 0.4%, less seams	Very good	Excellent	Moderate	-	Polishing by dry buffing
sphera® EC	Electrostatic conductive	ISO 5	≤ 0.4% , less seams	Very good	Excellent	Moderate	-	Polishing by dry buffing



# UNDER CONTROL PORTFOLIO

Within the wide range of Forbo products, there are several collections which offer a solution for the highest requirements and needs of controlled environments. Colorex and Sphera SD | EC form the base of the Forbo's **Under Control** portfolio.

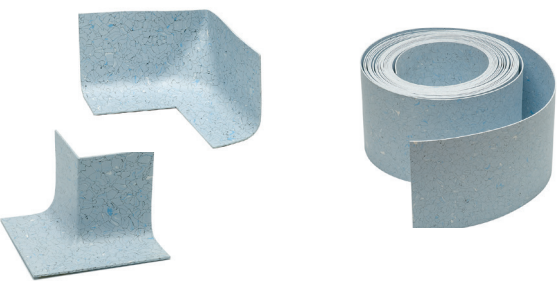
The installation and final finish of the floor will have significant impact on the floors performance and lifespan. Forbo has developed a series of products and pre-formed accessories to ensure the final result will keep functioning for the protection of your product.

## Accessories

In hygiene sensitive areas, high quality finishes are a must from a hygienic point of view. The use of preformed corners and skirtings provides the perfect solution for water-tight floor-to-wall transitions which are perfectly hygienic and aesthetically pleasing. Our integrated coving system for Colorex creates a perfect seal for these critical areas.

Preformed corners with a radius linked to the size of cleaning pads found on most commercial cleaning machines. This ensures that no sharp corners are created that would prove difficult to clean. Preformed outer corners are prevented from tearing thanks to their special construction. The inner reinforcement prevents the outer corners tearing or breaking due to high mechanical pressure, e.g. the rotation of a cleaning machine.

The accessories shown on the right are frequently used accessories. More options are available, please ask your local Forbo contact or website for the complete offer.



Inner and outer corners  
(Colorex and Sphera SD | EC)

Skirting  
(Colorex only)



Colour matching welding rod  
(Colorex and Sphera SD | EC)

Ventilated skirting  
(Colorex and Sphera SD | EC)

# eurocol

Installation of controlled environment flooring can require the use of specific accessories such as conductive adhesive and copper strips, as offered by Eurocol or other high quality brands.

# coral® & nuway®

Entrance flooring systems such as Coral and Nuway are not meant to be installed in controlled environments, but they are essential for almost every building. Soil and dirt can inhibit the conductive properties of ESD flooring. Capturing dirt in an early stage by the use of entrance flooring can be part of a contamination control plan for facilities with strict hygienic requirements. Entrance flooring can even be used for internal and external entrance areas where heavy duty loads and intense pedestrian and/or wheeled traffic are to be catered.





# THE COLLECTIONS

## colorex® SD | EC | plus

SD 150201 | EC 250201  
everest\*

SD 150204 | EC 250204  
montblanc\*

SD 150206 | EC 250206  
moonstone

SD 150213 | EC 250213  
sahara\*

SD 150225 | EC 250225  
kiwi

SD 150221 | EC 250221  
pacific

SD 150205 | EC 250205  
adula\*

SD 150262 | EC 250262  
nevo

SD 150264 | EC 250264  
meru

SD 150234 | EC 250234  
twilight

SD 150222 | EC 250222  
niagara\*

SD 150240 | EC 250240  
etna

SD 150207 | EC 250207  
quartz\*

SD 150263 | EC 250263  
massif

SD 150219 | EC 250219  
assuan

SD 150268 | EC 250268  
pelion

SD 150265 | EC 250265  
blue ridge

SD 150266 | EC 250266  
fuji

SD 150267 | EC 250267  
montserrat

\* items also available in Colorex plus

colorex®	plus EC	plus basic	plus R10
everest	621001		
montblanc	621004	611004	
adula	621005	611005	
quartz	621007	611007	661007
sahara	621013	611013	
niagara	621022	611022	

## colorex® signal

Colorex signal glow  
under light

Colorex signal glow  
in the dark

EC 250299  
glow

SD 150231  
sole

SD 150237  
amazonas

SD 150233  
fuego

## sphera® SD

SD 550000  
white

SD 550007  
grey sky

SD 550017  
ivory

SD 550032  
soft lilac

SD 550036  
water

SD 550050  
olive

SD 550003  
light neutral grey

SD 550008  
silver grey

SD 550023  
sand

SD 550034  
amethyst

SD 550037  
China blue

SD 550049  
yellow green

SD 550005  
dark neutral grey

SD 550018  
mortar

## sphera® EC

EC 450000  
white

EC 450007  
grey sky

EC 450017  
ivory

EC 450032  
soft lilac

EC 450036  
water

EC450050  
olive

EC 450003  
light neutral grey

EC 450008  
silver grey

EC 450018  
mortar

EC 450034  
amethyst

EC 450037  
China blue

EC 450049  
yellow green

EC 450005  
dark neutral grey





## Technical specifications

Colorex® meets the requirements of EN ISO 10581 and ASTM 1700  
Sphera® SD | EC meets the requirements of EN ISO 10581

		Colorex® SD	Colorex® EC	Colorex® plus EC	Sphera® SD	Sphera® EC
	Binder content	EN ISO 10581	type 1	type 1	type 1	type 1
	Total thickness	EN ISO 24346	2.0 mm / 3.0 mm*	2.0 mm / 3.0 mm*	10.3 mm	2.0 mm
	Surface finish		n.a.	n.a.	n.a.	SMART control ⚡top
	Commercial use	EN ISO 10874	34 very heavy	34 very heavy	34 very heavy	34 very heavy
	Light industrial use	EN ISO 10874	43 heavy	43 heavy	43 heavy	43 heavy
	Roll width	EN ISO 24341	n.a.	n.a.	n.a.	2 m
	Roll length	EN ISO 24341	n.a.	n.a.	n.a.	≤ 27 m ~ 26 m
	Tile size	EN ISO 24342	615x615 mm 615x1230 mm*	615x615 mm 615x1230 mm*	607x607 mm	n.a.
	Total weight	EN ISO 23997	3.2 kg/m²	3.2 kg/m²	12.0 kg/m²	2.9 kg/m²
	Electrostatics (general requirements)	IEC 61340-5-1	Compliant	Compliant	Compliant	Compliant
	Electrical resistance	IEC 61340-4-1 ESD STM7.1	1 x 10⁵ ≤ R ≤ 10⁶ Ω	5 x 10⁴ ≤ R ≤ 10⁶ Ω	2.5 x 10⁴ ≤ R ≤ 10⁶	1 x 10⁵ ≤ R ≤ 10⁶ Ω
	Electrical resistance in combination with ESD control footwear	IEC 61340-4-5 ESD STM97.1	R ≤ 1 x 10⁶ Ω	R ≤ 3.5 x 10⁷ Ω	R ≤ 3.5 x 10⁷ Ω	R ≤ 1 x 10⁶ Ω
	Body Voltage Generation, in combination with ESD control footwear <i>Typical value</i>	IEC 61340-4-5 ESD STM97.2	< 100 V ~ 40 V	< 100 V ~ 20 V	< 100 V ~ 20 V	< 50 V ~ 0 V <> 30 V
	Electrical insulation to ground	DIN VDE 0100	≥ 50 kΩ	n.a.	n.a.	≥ 50 kΩ
	Dimensional stability	EN ISO 23999	≤ 0.05%	≤ 0.05%	≤ 0.25%	≤ 0.4 %
	Residual indentation <i>Typical value</i>	EN ISO 24343-1	≤ 0.10 mm ~ 0.02 mm	≤ 0.10 mm ~ 0.02 mm	≤ 0.10 mm ~ 0.05 mm	≤ 0.10 mm ~ 0.03 mm
	Resistance to loads		Powered pallet truck and forklifts: total weight up to 2.5 t with hard wheels and up to 5 t with air tyres. Static loads: 50 kg/cm² - dynamic loads: 90 kg/cm² (performance may vary, subject to local conditions)			n.a.
	Castor chair continuous use	ISO 4918	Pass	Pass	Pass	Pass
	Impact sound reduction	EN ISO 140-8	2 dB	2 dB	12 dB	4 dB
	Light fastness	EN ISO 105-B02	≥ 6	≥ 6	≥ 6	≥ 7
	Resistance to chemicals	EN ISO 26987	Excellent	Excellent	Excellent	Very good
	Slip resistance	DIN 51130	R9	R9	R9	R9
	Bacteria resistance	ISO 846	All products do not support growth of bacteria			
	Outgassing: VOC	ISO 14644-8	- 8.1	- 8.1	- 8.1	- 8.3
	Indoor Air Emissions: TVOC after 28 days	EN 16516	≤ 0.025 mg/m³	≤ 0.025 mg/m³	≤ 0.025 mg/m³	≤ 0.01 mg/m³
	Cleanroom particle emission	ISO 14644-1	ISO 4	ISO 2	ISO 2	ISO 6
	Creating better environments					
	Renewable electricity		Colorex SD, Colorex EC, Sphera SD and Sphera EC are manufactured using 100% electricity from renewable sources			
	Recycled content		Colorex plus contains up to 95% recycled content in the backing			
	Colorex and Sphera® SD   EC products meet the requirements of EN 14041	EN 14041 CE 0201083-DuP-003	EN 14041 CE 0201083-DuP-003	EN 14041 CE 0201083-DuP-003	EN 14041 CE 0201083-DuP-003	EN 14041 CE 0201083-DuP-003
	Reaction to fire**	EN 13501-1	B <sub>fl</sub> -s1, G, CS	B <sub>fl</sub> -s1, G, CS	B <sub>fl</sub> -s1, L, CS	B <sub>fl</sub> -s1,G, NCS
	Slip resistance	EN 13893	μ ≥ 0.30	μ ≥ 0.30	μ ≥ 0.30	μ ≥ 0.30
	Thermal conductivity	EN 12524	0.25 W/(m·K)	0.25 W/(m·K)	0.25 W/(m·K)	0.25 W/m·K
	Body voltage	EN 1815	≤ 2 kV	≤ 2 kV	≤ 2 kV	≤ 2 kV
	Electrical behaviour - static dissipative	EN 1081	≤ 1 x 10⁹ Ω	n.a.	n.a.	≤ 1 x 10⁹ Ω
	Electrical behaviour - conductive	EN 1081	n.a.	≤ 1 x 10⁶ Ω	≤ 1 x 10⁶ Ω	n.a.

\* Available on request

\*\* Product also tested to ASTM. Fire ASTM E648: class 1, Smoke ASTM 662: pass

All Forbo Flooring Systems' sales organisations worldwide have a certified Quality Management System in accordance with ISO 9001.  
All Forbo Flooring Systems' manufacturing operations have a certified Environmental Management System in accordance with ISO 14001.  
The Life Cycle Assessment (LCA) of Forbo Flooring Systems' products is documented in individual Environmental Product Declarations (EPD's) which can be found on all of our websites.







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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creating better environments

**forbo**  
FLOORING SYSTEMS