

1. PRESENTATION OF THE PVC FLOORING FORTELOCK ESD

In the product portfolio of homogeneous floorings Fortelock, you can find the series ESD, which meets the requirements for electrical properties.

The floor tiles Fortelock ESD are special floors that excel in great electrical conductivity and they are suitable for the rooms where electrostatic discharges need to be avoided or eliminated.

The homogeneous floor coverings are homogeneous in their composition throughout their thickness. The wear (walking) layer is the same as the flooring thickness.

Made in the Czech Republic.

APPLICATION OF THE PVC FLOORING FORTELOCK ESD

- laboratories, chemical industry
- hazardous areas
- electrotechnical industry
- pharmaceutical industry
- automotive industry
- paper and rubber industries

Fortelock INDUSTRY

2020 – Fortelock ESD leather pattern
 2025 – entryway trim Fortelock ESD leather design
 2026 – corner Fortelock ESD leather design

2. INSTALLATION OF A NEW FLOOR

2.1. SUBFLOOR TYPES

PREPARATION OF THE ORIGINAL SUBFLOOR (SURFACE)

To ensure permanent functional qualities of PVC floorings, the structure of the subfloor must be flawless, as recommended in applicable national or European standards.

The surface must be flat, smooth, with no cracks and dust, sufficiently strong, clean and dry. Any grease stains and other dirt must be removed. Any unevenness, cracks, structural joints and different levels are advisable to be repaired and aligned. The choice of the subfloor material depends on the place of final use, and the properties such as point-load resistance must be considered.

The PVC flooring Fortelock ESD can be installed on concrete, wood, asbestos floor tiles and other standard solid floors. An expansion joint should be left around the perimeter. The joint allows expansion and contraction. The floor must be properly earthed to ensure correct discharge of static charges.

Electrical conductivity of the original subfloor can differ considerably. That is why the installed flooring can feature lower resistance than the minimum value indicated in the specification. Therefore, it is advisable to use a cementitious backing providing an insulating barrier between the vinyl floor covering ESD and the original subfloor.

The bottom layer shall be dry before applying the floor covering Fortelock ESD.

Any defects such as holes, grooves and deep scratches in the concrete substrate must be repaired. Newly cast concrete slabs often contain excessive moisture and other impurities. Before installing the ESD floor, always check moisture of the concrete.

- a) The concrete structure of the subfloor must meet and/or exceed static and dynamic loads for the intended use of the space.
- b) Installing the vinyl floor tiles Fortelock ESD on the existing elastic floor is not recommended. After removal of the elastic floor, there are soluble asphalt adhesives on the subfloor which are not readily recognizable.
- c) Gypsum-based subfloors are not recommended for use with the ESD flooring.

RECOMMENDATION

If there is still construction work in progress, protect any newly laid floor tiles with a suitable protective cover. Limit the risk of inadvertent damage. In the event of malfunction or specific failure, the subcontractor is responsible for warranties and/or performance warranties. Should this be the case, the manufacturer of the Fortelock floor cannot be held liable.

2.2. EARTHING

Proper installation of the earthing system is a prerequisite for all ESD floors. The system ensures conductivity of the installed floor to the earthing point via a predetermined and controlled path.

- The grounding kit contains a plug with connecting cord (2.4 m) and stud (10.3 mm) in one piece, an L-shaped metal grounding element and copper self-adhesive tape (used for sticking the grounding element to the grounding tape).

- The tape (black, PE/PP) should be nominally 70 mm wide and 0.1 mm thick.
- The earthing system shall be connected to the earthing system of the entire building. It should be implemented by a qualified electrician, not the floor supplier. Its electrical inspection must be valid.

2.3. ACCESSORIES

For efficient fiction in gof the ESD floor system, it is advisable to ensure the following:

- Fixing point EBP
- Fixing tape and 2 fixing sets for every 30 m²

We recommend to Conner the floor with 2 fixing sets. The second fixing set is there in case anyone of them fail due to wear and tear. Which would lead to the flooring system to stop working.

2.4. METHOD OF INSTALLATION

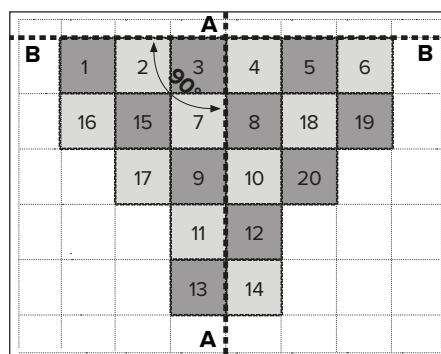
1. The floor tiles shall be installed on a flat and hard surface. Make sure to let the floor tiles acclimatize thoroughly before the installation (see clause 3.5).

2. Use chalk to draw a line or use a laser to make lines A-A and B-B.

3. Place the earthing strap (marked in red). The strap must be laid so that it is under joints of each floor tile in at least one direction. At the same time, it must be perpendicular through the center of joints every 5 meters.

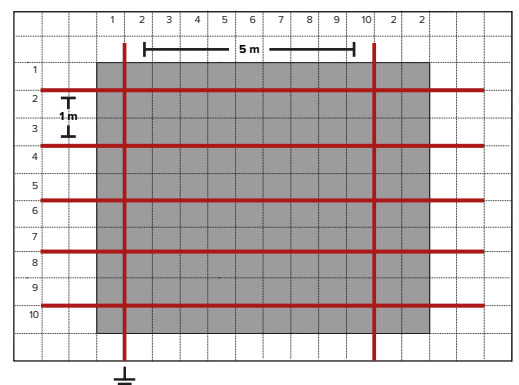
4. The installation shall start from the entrance to the room and continue with laying the floor in the shape of a pyramid. Using a rubber mallet (with a black or white head, depending on the floor colour) knock the floor tiles together. Start at the outer corners of the floor tile and proceed toward the inner corner of the floor tile before laying. It is imperative that the floor tiles are kept in the mutual rectangular position.

5. The floor tiles shall be installed in a usual way so that the earthing connections are fitted (one for every 60-80 m²). It is important that the earth strap is connected to the floor tile with an earth pin.



6. Final cuts and completion of the perimeter floor tiles (see clause 3.6) can be done only after you have laid all floor tiles. Ideally, after several hours from the application. When cutting the perimeter floor tiles, allow for a 5 mm gap from any fixed points (e.g. columns, racks and walls). This joint can be pointed with flexible sealant or covered with a strip.

7. The earthing point shall be placed in the room corners or along the walls to avoid the risk of tripping.



8. After installation, the floor must be properly cleaned (clause 4) to obtain correct values during the conductivity tests. If the current floor has been already earthed, the floor must be insulated.

9. We will be glad if you share your good or bad experience and photos of the installation of the floor. Please send your comments to us at info@fortemix.cz.

2.5. TEMPERATURE CONDITIONS AND PREPARATION OF THE ORIGINAL SUBFLOOR

Do not install the floor tiles immediately after their delivery. Let the flooring acclimatize for at least 48 hours before the installation. The acclimatization shall take place at air temperature of 18-26 °C, considering the temperature in the room. The higher the temperature, the faster the floor tiles acclimatize. The floor tiles must be unloaded from pallets and spread in the room where they are expected to be installed. To facilitate the acclimatization process, spread the floor tiles in smaller units, e.g. in bundles of 10 pieces. Note that the temperature of the subfloor must not fall below +15 °C. Working temperature during the installation

and 24 hours after the installation must be constant, in the range from 18 to 26 °C, to avoid any thermally conditioned dimensional changes of individual flooring components. When installing at normal temperature deviations, note the movement of the floor and leave a gap of at least 5 mm between the floor tiles and any fixed points (e.g. a wall). If the installation takes place at a temperature below 15 °C, leave a larger expansion gap (joint) between the floor tiles and any fixed points (e.g. a wall). If the operating temperature below 0 °C is necessary, contact the business department of the manufacturer.

2.6. CUTTING THE PERIPHERAL TILES

To shorten the panel, the side to be cut must be turned to the wall, so that there is an expansion gap of approx. 5 mm. This expansion gap shall be kept at all penetrating or related structures (such as heating bodies, a different type of floor covering). The joints shall be covered with skirts or filled with flexible sealant suitable for the ESD system.

The PVC floor tiles Fortelock ESD can be cut with a saw or a knife. Do not exert force on the floor tiles. Put them together and gently joint them with a mallet. For easy, straight and

especially fast cuts of floor tiles we recommend that you use a cutter / a guillotine, e.g. type Freiss PF-63. Prior to any difficult or complicated cuts, make a template.

⚠ IMPORTANT!

- The tiles which have been cut and are closest to the walls must be wider than 10 cm.
- At doors and recesses, the area of the cut floor tile must be larger than a half of the original entire floor tile.

3. CLEANING

The Fortelock ESD flooring requires regular cleaning and maintenance. The frequency of cleaning depends on the workload, cleanliness of equipment and the type of production in the area where the product is installed. The following general instructions apply to most applications. The frequency of procedures may be adjusted to suit the environmental conditions in the room where the floor is installed.

Regular cleaning and maintenance are of great importance for all floor coverings Fortelock, both in terms of appearance, hygiene and long service life.

The following recommendations for cleaning and maintenance consider using products made by Dr. Schutz. They are based on many years of experience and they correspond to trends in cleaning. Costs of cleaning and cleaning intervals depend on the workload and the degree of soiling. Due to different cleaning conditions, these recommendations are non-binding.

⚠ CAUTION

Preventive measures help to keep as little dirt on the floor as possible, thus eliminating the resulting contamination. E.g. there shall be cleaning zones at the entrances to buildings. The cleaning zones capture dirt. Thanks to these zones, the quantity of dirt brought into the building is minimized. The recommended size is at least 2-3 steps. The document does not discuss ways of preventive measures in terms of cleaning any more. If the maximum friction coefficient is required, you can apply special anti-slip varnish to the floor.

3.1. PROTECTIVE COATING SYSTEMS FOR THE ESD FLOORS

Dr. Schutz® ESD Color System* – if your floor looks worn, has lost its original colour and the results of conductivity measurement do not meet the specified requirements, ESD colour offers the ideal solution. After two applications of conductive 2K-PU paint ESD Colour Base, your floor will look like a new one. Top transparent coat ESD Top Coat or ESD Medicoat (increased resistance to chemicals, disinfections and colour chemicals) ensure optimum conductivity. Using this simple system of three coats, you can give each ESD floor its original properties without limiting everyday operations.

Dr. Schutz® ESD Transparent System* – if your floor has lost its original visual properties, dirt is deposited deeply in the pores, daily cleaning of the floor pores is ineffective and the results of conductivity are not satisfying, ESD Transparent system is the ideal solution. Application in three transparent coats (2x ESD Base Coat and 1x ESD Top Coat) ensures not only the restoration of conductivity, but it also significantly revive the visual characteristics and you will be able to clean the entire surface very easily again.

Dr. Schutz® ESD Single Coat System* – if your newly-installed floor has been scratched or damaged or if it is difficult to clean your floor (for example you are not able to get rid of ESD-pallet residues), it is advisable to apply one layer of ESD Topcoat or ESD Medicoat (increased resistance to chemicals, disinfections and colour chemicals) after initial cleaning. The transparent coat protects the surface of your floor, ensures it easy and simple cleaning, without losing its conductive properties.

The Dr. Schutz® ESD systems are all certified, meet requirements of standards (DIN EN 61340-5-1 / ANSI 20.20)) and they are compatible with all current ESD floor systems. The coatings are highly resistant to wear and chemicals.

3.2. 10 MOST IMPORTANT PRINCIPLES OF CLEANING

1. Never use abrasive discs. This way you can avoid the risk of damage to the surface (abrasive products, solvents, etc.).
2. Never use rubber covers (for legs of chairs or other articles of furniture). Use PVC or polyethylene protectors instead.
3. Regular cleaning is more favourable and effective than occasional deep cleaning.
4. Use the recommended detergents.
5. Always observe instructions from manufacturers of the detergents as well as their health and safety provisions.
6. Choose soft brushes for rotary cleaning machines (bristles <0,25 mm). Machines with equivalent brushes can be used as an alternative. The type of brushes with hard bristles is not recommended.
7. Solvents damage elastic floor coverings.
8. A significant amount of brought-in dirt can be minimized by using cleaning mats in front of the entrance and by cleaning zones in entrance areas of buildings.
9. For common cleaning, do not use any aggressive products (such as products containing abrasive matters, alkalis or with a large volume of organic solvents and degreasing agents).
10. If you have a rotary cleaner-dryer at your disposal, use it. Use a weak solution of clean water and pH-neutral detergent. For better cleanability, appearance and durability of the floor covering, we recommend using the below-listed products.

4. OTHER PROVISIONS

The texts of the manuals have been prepared by representatives of the listed companies. Fortemix s.r.o. cannot assume liability for the listed detergents and caring products. If in doubt, the instructions from the manufacturer or sales representative of these product shall prevail.

When you use any detergents or caring products, observe the instructions from the manufacturer of the products and, if appropriate, consult manufacturer's technical advisors.

5. WARRANTY

The company Fortemix provides the following warranty, which is subject to the conditions herein and the terms and conditions indicated at www.fortemix.cz. The warranty covers all interlocking floor tiles made of PVC for a period of one (1) year from the date of shipment or for a period stipulated in binding regulations applicable in the country of delivery, should the longer period be required.

The company Fortemix shall replace any defective products free of charge if the defect is detected before laying. If the customer is convinced that the defect occurred after the installation, they shall immediately notify the company Fortemix of this fact and they shall allow the product to be inspected. If the company Fortemix acknowledges, having performed the inspection, that the product is defective and no limitations included in this warranty apply to it, the company shall replace the defective product with a defect-free one. If the owner

is not satisfied with the wear resistance, they must inform the company Fortemix and allow it to inspect the floor. If the original floor is worn in the wear layer and the floor has been properly installed and maintained, the company Fortemix shall replace any worn floor tiles for new ones. The customer can be charged for the replacement. The fee shall reflect the depreciation difference between the new and the old floor tile.

In order to be entitled to replacement under this warranty, the customer shall submit a written notification of any claimed defect to the company Fortemix immediately after the defect has been found, but no later than 90 days after the detection of the defect. This notification shall be sent to the registered address of the company: Fortemix s.r.o., Kirilovova 812, Paskov, Czech Republic.

ONE-YEAR LIMITED WARRANTY

The products are all covered with warranty for material or workmanship defects for a period of one (1) year from the date of purchase.

10-YEAR WARRANTY FOR WEAR AND TEAR

The warranty for wear and tear of the wear layer is applicable to all Fortelock ESD floor tiles. The warranty depends on normal and proper use and it is valid for a period of 10 years from the date of purchase.

5.1. THESE WARRANTIES DO NOT COVER:

- The exact consistency of shade, colour and matting.
- Any detachment, burns, cuts and damage due to improper installation, sharp castors, improper or rough use or unsuitable detergents or maintenance methods.
- Costs of delivery and installation of the original or replaced material.
- Any problems due to moisture, hydrostatic pressure or alkaline substances in the subfloor of the floor.
- The problems due to use, maintenance and installation, which do not correspond to specifications issued by the company Fortemix, its recommendations and instructions.
- Material installed with obvious defects.
- Installation with adhesives other than those recommended by Fortemix.
- Fading or discoloration due to excessive penetration of sunlight and exposition to ultraviolet radiation from direct sunlight or sunlight passing through the glass.
- Written Disclaimer.
- Any direct or indirect promises made by a reseller or a representative.

This warranty supersedes any other warranties, expressed or implied. The company Fortemix shall not be liable for any incidental or consequential damage due to any malfunctions. The extended warranty must be confirmed by the company Fortemix in writing. The company Fortemix shall not be liable for any damage resulting from failure to observe instructions and recommendations from the manufacturer.

This manual has been drawn up as a guide only. The information included herein is provided in good faith, but without any guarantee, since the conditions on the site can be different and the company Fortemix cannot have any influence on them.

Fortemix, s.r.o. assumes no responsibility for any of the recommended products if it fails in connection with any of its products. The proper information on the suitability of the products used for the given application is the responsibility of the specific manufacturer (of detergents, adhesives, screed, etc.) and the implementer of the floor, not the manufacturer of the floor.

SUITABILITY AND INSTALLATION OF THE PRODUCT

Fortemix shall not be held liable for the specification of the suitability of the product for the selected use and applications, intended by the customer. This specification shall be the sole responsibility of the customer.

The application recommendations indicated in advertising materials of the company Fortemix is considered to be reliable. However, the company Fortemix does not give any warranty for results which are expected to be achieved since the conditions of use, application and installation provided by the customer and other conditions are beyond control of Fortemix and they vary at each application.

The PVC flooring Fortelock ESD contains stainless-steel fibres which can be visible on the floor-tile surface. This is an inevitable and key part of the manufacturing process providing the optimum performance of ESD. Check the floor tiles. If the floor tiles are not acceptable for you in terms of their appearance, do not continue installing them because we do not accept liability for replacement or refunds for any goods after they have been installed on 10 m² or more.

⚠ IMPORTANT NOTICE

Any warranties apply only to the original end user of the product. Under no circumstances, they cannot be assigned or transferred. If the floor tiles of the product have been replaced within the warranty, the replacement floor shall be considered an equivalent product and the same service life and the conditions of the original warranty shall be assumed.

6. TECHNICAL PARAMETERS OF THE PVC FLOORING FORTELOCK ESD

The Fortelock Floor Tiles are subject to the assessment according to the European Parliament and Council Regulation No. 305/2011 ("CPR") following the procedure according to the harmonized standard EN 14041.

Detailed information on the product and variants thereof can be found in the catalogue or on the website www.fortelock.com

Series	Standard	PVC flooring Fortelock	
		INDUSTRY ESD	XL ESD
Product Numbers		2020, 2025, 2026	2230
The area of use (classification according to ČSN EN ISO 10581 and 10582)		industry, heavy-duty storage (industrial use, load classes 42, 43)	commercial and residential premises, garages, workshops (commercial use of the load class 32, 33)
Outer size of the floor tile 1		510,5 × 510,5 mm	653 × 653 mm
The actual size of coverage 2		496,5 × 496,5 mm	639 × 639 mm
Type		homogeneous flooring	
Weight (+/- 10%)		2.2 kg	2.3 kg
Floor finish		PVC	
Finish		leather	snake skin
Surface layer		PVC	
Thickness		7 mm	4 mm
Surface (wear) layer thickness	EN ISO 24340	7 mm	4 mm
Dimensional stability	EN ISO 23999	≤ 0,4 %	
Resistance to chemicals	EN ISO 26987	good	
Reaction to fire	EN 13501-1+A1	B _n -s1	
Resistance to bacteria	EN ISO 846	passed	
Hardness	EN ISO 868	92±3 Shore A	
Deformation after static loading	EN ISO 24343-1	< 0,1 mm	
Influence of a castor chair	EN 425	suitable	
Abrasion resistance	EN 660-2	T	
Anti-slip property	DIN 51130:2014-02	R10	
Side length, edge straightness and squareness	EN ISO 24342	≤ ±0,20% of nominal length	
Colour uniformity		≤ ±2ΔE*ab	
Colour fastness to artificial light		>5 (without damage) (EN 20105-A02)	
Colours		Grey, Graphite	
Warranty		up to 12 years	
Number of pieces in 1 m ²		4	2.5
Compressive strength	EN ISO 604-1	520 kg/cm ²	
Resistance (R _{pp})	EN 61340-5-1	< 10 ⁵ Ω	
Earth electrical resistance	EN 61340-5-1	< 10 ⁶ Ω	
Packaging		10 pieces in a package – on palette 120 m ²	24 pieces in a package – on palette 172 m ²

Entryway trims and corners for the PVC flooring Fortelock, series Light and Industry ESD, meet the technical parameters of the flooring Fortelock Industry ESD.

For detailed information, please contact your dealer.

