

1. PRESENTATION OF FORTELOCK ESD PVC FLOORING

In the product portfolio of Fortelock homogeneous floorings, you can find our ESD series, which meets the requirements for electrical properties. Fortelock ESD floor tiles are special floors that excel in electrical conductivity and they are suitable for the rooms where electrostatic discharges need to be avoided or eliminated. The 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.

WHERE TO FIND FORTELOCK ESD PVC FLOORING

- Laboratories, chemical industry
- Hazardous areas
- Electro technical industry
- Pharmaceutical industry
- Automotive industry
- Paper and rubber industries



2. INSTALLATION OF A NEW FLOOR

2.1. PREPARATION OF THE ORIGINAL SUBFLOOR (SURFACE)

To ensure the 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 or dust, sufficiently strong, clean and dry. Any grease stains or dirt must be removed. Any unevenness, cracks, structural joints and different levels should be repaired and aligned. The choice of the subfloor material depends on the place of final use, and properties such as point-load resistance must be considered.

Fortelock ESD PVC flooring 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 for expansion and contraction. The floor must be properly grounded to ensure the 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 ESD vinyl floor covering and the original subfloor.

The bottom layer should be dry before applying Fortelock ESD floor covering. Any defects such

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

- The concrete structure of the subfloor must meet and/or exceed the **static and dynamic loads for the intended use of the space.**
- Installing Fortelock ESD PVC floor tiles on an 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.
- Gypsum-based subfloors are not recommended for use with 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 a 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. GROUNDING

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

- We recommend **using grounding tape and kit for every 30 m².**
- 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 width and gauge are governed by performance standards.
- The grounding system shall be connected to the grounding system of the entire building. It should be installed by a qualified electrician, not the floor supplier. **The electrical inspection for it must be valid.**

To safeguard the complete and functioning ESD flooring system, our customers can order the grounding kit and tape directly from us. Please inquire with our sales representative.

2.3. ACCESSORIES

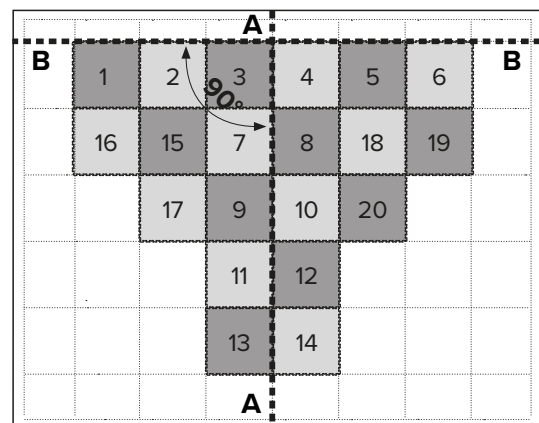
To ensure the ESD floor system works effectively, the following is recommended:

- An EBP grounding point
- Grounding tape and 2 grounding kits for every 30 m²

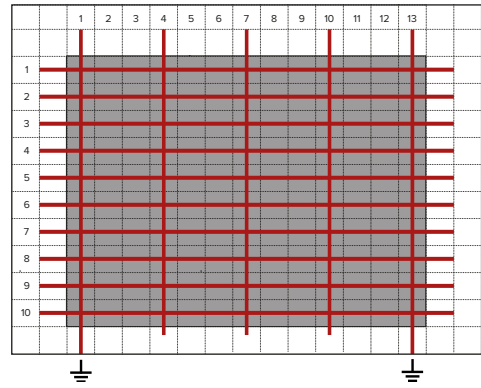
We recommend connecting the floor system with 2 grounding kits. The second grounding kit is there in case one of them fails due to wear and tear, which would lead the flooring system to stop working.

2.4. METHOD OF INSTALLATION

- Install the floor tiles on a **flat, hard surface**. Make sure to let the floor tiles **acclimatize** thoroughly before the installation (see clause 2.5).
- Use chalk to draw a line or use a laser to make lines A-A and B-B.
- Lay the grounding tape (marked in red). The tape must be laid so that it is under the centre part of all tiles in at least one direction and that it also runs perpendicular across the centre part of all joints, **at least for every 4 tiles**. The grounding tape can also be laid under each tile in both directions to form a grid.
- Use this formula to **calculate the total length of the grounding tape**:
Fortelock ESD: Total area in m² x 2.8 = linear metres of film.
 Example: 45 m² x 2.8 = 126 m of film and 2x grounding kit. Running the tape under each tile requires 4x the area in m² of grounding tape.
Fortelock XL ESD: Total area in m² x 2.2 = linear metres of foil.
 Example: 45 m² x 2.2 = 99 m of film and 2x grounding kit. Running the tape under each tile requires 3.1x the area in m² of grounding tape.
- Start the installation 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) tap 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.
- Install the floor tiles in the usual way so that the grounding connections are fitted** (one for every 60-80 m²). It is important that the grounding strap is connected to the floor tile with an ground pin.



7. The final cuts and completion of the perimeter floor tiles (see clause 2.6) 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 or walls). This gap can be covered with a skirting board.
8. Place the grounding point in the corners of the room or along the walls to avoid the risk of tripping.
9. After installation, the floor must be properly cleaned (clause 3) to obtain the correct values of the conductivity tests. If the current floor has been already grounded, the floor must be insulated.



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 an **ambient temperature of 18-26 °C**. The higher the temperature, the faster the floor tiles acclimatize. The floor tiles must be unloaded from pallets and spread out in the room where they are expected to be installed. To facilitate the acclimatization process, spread the floor tiles in smaller groups, e.g. in bundles of 10 pieces. Note that the temperature of the subfloor must not fall below +15 °C. The 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 an operating temperature below 0 °C is necessary, contact the business department of the manufacturer.

2.6. CUTTING PERIPHERAL TILES

To shorten the piece, the side to be cut must be turned to the wall so that there is an expansion gap of approximately 5 mm. There must be an expansion gap around all penetrating or related structures (such as heaters, different type of floor covering). The gaps are then covered with skirting boards.

Fortelock ESD PVC floor tiles can be easily cut with a saw or a knife. Do not exert force on the floor tiles. Join them together and gently tap them with a mallet. For easy, straight and especially fast cuts of floor tiles we recommend that you use a cutter / guillotine, e.g. Freiss PF-63.

Make a template before making difficult and complicated cuts.

▲ IMPORTANT!

Any cut floor tile laid next to the walls **must be wider than 10 cm**.

At doors and recesses, the size of the cut floor tile **must be larger than half of the original size of the floor tile**.

2.7. GLUING THE TILES

Fortelock ESD PVC tiles can be glued to the subfloor. For gluing the tiles, we recommend the brand adhesive Uzin KR 421 L with a TKB A2/ B1 toothed spatula.

Uzin KR 421 L is a conductive, epoxy-resin elastic adhesive for heavy-duty flooring. It is especially characterized by its high strength, extraordinary plasticity and very high resistance to water, chemicals and alkalis. It prevents the formation of voltage potentials and keeps electrostatic charges to a minimum.

Gluing permanently connects tiles to the floor. Please therefore follow the information given in the UZIN product data sheets. The installation recommendations are based on tests and practical experience, but since UZIN cannot influence the conditions at the installation site nor the course of work, the information is general in nature without any guarantee of performance.

When using ramps, we recommend gluing both the ramps and the first row of tiles.

3. CLEANING

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 Fortelock floor coverings, 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.

For cleaning after installation and for regular cleaning, we recommend **Dr. Schutz ESD Floor Cleaner**. It is characterized by excellent binding of dirt and greasy deposits. It prevents the formation of a leached surface, gray veils, and the cleaned surface remains streak-free.

▲ CAUTION

Preventive measures help to keep as little dirt on the floor as possible, thus eliminating soiling. For example, entrances to buildings should have **cleaning zones**. The cleaning zones trap the dirt. Thanks to these zones, the amount of dirt brought into the building is minimized. The recommended area is at least 2-3 steps.

3.1. PROTECTIVE COATING SYSTEMS FOR ESD FLOORS

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

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 tests are not satisfying, Dr. Schutz ESD Transparent System is the ideal solution. Application in three transparent coats (2x ESD Base Coat and 1 x ESD Top Coat) ensures not only the restoration of conductivity, but it also significantly revives the visual characteristics and you will be able to clean the entire surface very easily again.

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 Dr. Schutz ESD Single Coat System or ESD Medicoat (increased resistance to chemicals, disinfectants and colour chemicals) after initial cleaning. The transparent coat protects the surface of your floor, ensures it is simple and easy to clean without losing its conductive properties.

The Dr. Schutz ESD systems are all certified, meet the requirements of standards (DIN EN 61340-4-1 / 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. Brushes with hard bristles are 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 agents, 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 ARRANGEMENTS

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 care products. If in doubt, consult the instructions from the manufacturer or sales representative of these product.

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

5. WARRANTY

Fortemix, s.r.o. provides the following warranty, which is subject to the conditions here and to the terms and conditions indicated at www.fortemix.com. 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 the binding regulations applicable in the country of delivery, should a longer period be required.

Fortemix, s.r.o. warrants that its Fortelock floor tiles will not be dented or punctured under normal use for a period of 12 years after delivery. This guarantee does not apply to recycled tiles where the legal guarantee depends on the country in question.

Fortemix, s.r.o. 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 Fortemix, s.r.o. of this fact and they shall allow the product to be inspected. If Fortemix, s.r.o. 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 customer is not satisfied with the quality of the tiles, they must inform Fortemix, s.r.o. and allow them to inspect the floor. If the complaint is accepted, Fortemix, s.r.o. will replace the worn tiles with 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 Fortemix, s.r.o. immediately after the defect has been found, but no later than 90 days after the detection of the defect. This notification must be sent to the company's address in writing or by email. In order for the above warranty and statutory warranty to be accepted, the conditions set out in this Technical Data Sheet and Fortemix's Terms and Conditions must be met.

5.1. THESE WARRANTIES DO NOT COVER:

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

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

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

Fortemix, s.r.o. assumes no responsibility for any of the recommended products if they fail 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 installer of the floor, not the manufacturer of the floor.

6. SUITABILITY AND INSTALLATION OF THE PRODUCT

Fortemix, s.r.o. 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 Fortemix, s.r.o. are considered to be reliable. However, Fortemix, s.r.o. does not give any warranty for results which are expected to be achieved since the conditions of use, application and installation undertaken by the customer and other conditions are beyond the control of Fortemix, s.r.o. and vary for each application.

Fortelock ESD and XL ESD PVC flooring 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 they are not acceptable for you in terms of their appearance, do not continue installing them because we do not accept any liability for replacement or refunds for any goods after they have been installed on 10 m or more.

▲ IMPORTANT NOTICE

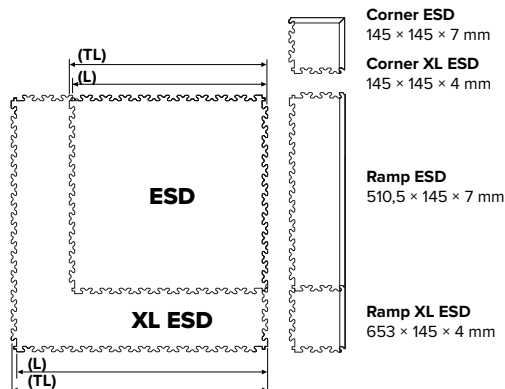
Any warranties apply only to the original end user of the product. Under no circumstances can they be assigned or transferred. If the floor tiles of the product have been replaced under the warranty, the replacement floor shall be considered an equivalent product and the same service life and conditions of the original warranty shall be assumed.

7. TECHNICAL PARAMETERS OF PVC FLOOR TILES FORTELOCK ESD, XL 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	Fortelock PVC Floor Tiles	
		ESD	XL ESD
Product numbers – tiles	–	2020 – leather	2230 – snake skin
Product numbers – ramps	–	2025 – leather	2235 – snake skin
Product numbers – corners	–	2026 – leather	2236 – snake skin
Area of use, intensity of use	ČSN EN ISO 10581 and 10582	42 - 43	32 - 33
Outer size of the floor tile (TL)	–	510,5 x 510,5 mm	653 x 653 mm
The actual size of coverage (L)	–	496,5 x 496,5 mm	639 x 639 mm
Type	–	homogeneous flooring	
Weight (± 10 %)	–	2,4 kg	2,4 kg
Floor finish	–	PVC	
Finish	–	leather	snake skin
Surface layer	–	PVC	
Thickness	–	7 mm	4 mm
Surface (wear) layer thickness	ČSN EN ISO 24340	7 mm	4 mm
Dimensional stability	ČSN EN ISO 23999	≤ 0,4 %	
Resistance to chemicals	ČSN EN ISO 26987	good	
Reaction to fire	ČSN EN 13501-1+A1	B _{fl} - s1	
Resistance to bacteria	ČSN EN ISO 846	passed	
Hardness	ČSN EN ISO 868	92±3 Shore A	
Deformation after static loading	ČSN EN ISO 24343-1	< 0,1 mm	
Influence of a castor chair	ČSN EN 425	suitable	
Abrasion resistance	ČSN EN 660-2	T	
Anti-slip property	DIN 51130:2014-02	R10	
Side length, edge straightness and squareness	ČSN EN ISO 24342	≤ ±0,20 % of nominal length	
Colour uniformity	–	≤ ±2ΔE*ab	
Colour fastness to artificial light	ČSN EN 20105-A02	>5 (without damage)	
Warranty	–	up to 12 years	
Number of pieces in 1 m ²	–	4 pcs	2,5 pcs
Compressive strength	ČSN EN ISO 604-1	520 kg/cm ²	
Resistance (R pp)	ČSN EN 61340-4-1	< 10 ⁵ Ω	
Earth electrical resistance	ČSN EN 61340-4-1	< 10 ⁶ Ω	
Packaging	–	10 pieces in a package – on palette 120 m ²	24 pieces in a package – on palette 172 m ²

Ramps and corners for the PVC flooring Fortelock, series ESD and XL ESD, meet the technical parameters of the flooring Fortelock ESD.
For detailed information, please contact your dealer.



8. ACCESSORIES AND SERVICES

Accessories	Description	Packaging/Design/Colour
ESD Ramps, Corners	They are used for a smooth run-up to the tiles from the main floor. We recommend gluing them to the subfloor.	–
ESD Grounding Kit	It includes a plug with cord (2.4 m) and connection rivet (10.3 mm) in one piece, L-shaped metal grounding element and CU self-adhesive tape, used to stick the grounding element to the grounding tape.	–
ESD Grounding Tape	The width and spacing of the installation are governed by performance standards. Dimensions: width 70 mm, length as required, thickness 0.1 mm.	–
Rubber hammer	Rubber hammer, wooden handle.	–

Bonding	Description	Packaging/Design/Colour
Adhesive for ESD tiles	2-component epoxy adhesive for permanent connection of tiles to the floor . Conductive, elastic adhesive based on epoxy resin for highly stressed flooring. It is particularly characterized by its high strength, its extraordinary plasticity and also its very high resistance to water, chemicals and alkalis. It prevents the formation of voltage potentials and minimizes electrostatic charges to a minimum.	6 kg

Cleaners	Description	Packaging/Design/Colour
Dr. Schutz ESD Floor Cleaner	Cleaning concentrate for daily cleaning and also for cleaning after ESD tile installation. Developed for all electrostatically conductive and antistatic floors.	10 l
Dr. Schutz Universal stain remover Elatex	Universal product for removing water-soluble and water-insoluble stains such as coca-cola, fruit juices, ketchup, ballpoint pens, marmalade, red wine, coffee, chocolate, chewing gum, shoe cream, nail polish, asphalt, markers, etc. It is particularly suitable for removing rubber scuffing, heel scuffing, and graffiti and waterproof paints.	200 ml

Services	Description	
Fortelock used tile recycling	We offer the option to take back the unwanted Fortelock PVC tile as a part of ecological program . Thanks to this service you will save time, worries and money spent on disposal and together we will contribute to the protection of the environment.	–
Borrow up to 5 m ² of tiles to try out	Take advantage of the opportunity to try our tiles for yourself . We will lend you up to 5 m ² of tiles for a whole month for FREE. For more information, contact our customer service.	–
Onsite inspection	We offer expert assessment and proposal of possible solutions for your floor onsite.	–
Visualization	Take advantage of the state of the art visualization software and change the floor color scheme according to you expectation.	–