

6. TECHNICAL PARAMETERS OF FORTELOCK PVC FLOOR TILES

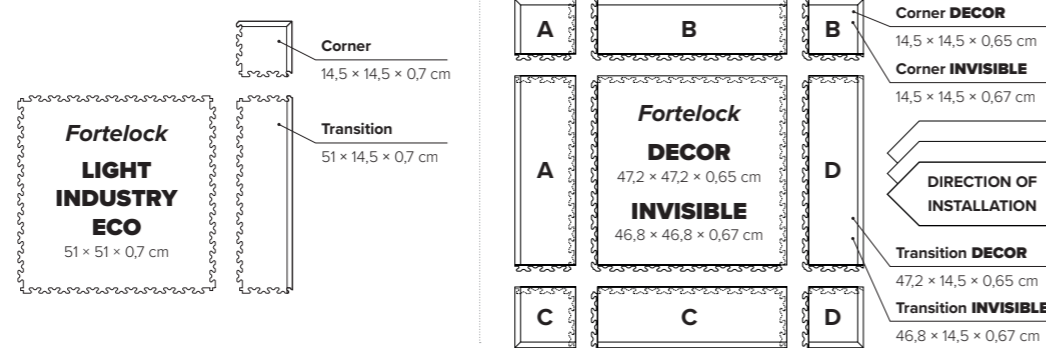
These certificates attest to the tests of the product and conformity assessment in accordance with EN 14041, Council of the European Communities Directive, 89/106/EEC (CPD –Construction Products

Directive). Detailed information about the product and its variants can be found in the catalog or on the website: www.fortelock.com

Series	Standard	Fortelock PVC floor tiles					
		LIGHT	INDUSTRY	INVISIBLE	HOME DECOR	BUSINESS DECOR	SOLID DECOR
Product numbers		2050, 2060, 2080	2010, 2020, 2040	2030	2110	2120	2130
Area of application		commercial and residential spaces, garages, workshops	Industry, high-load storage	commercial and residential spaces, garages, workshops, industry, high-load storage	residential – living spaces with normal use, class 22 (EN 685)	commercial – very high loads, class 34 (EN 685) in light industry – high loads, class 43 (EN 685)	
External size of the tiles		510×510 mm		468×468 mm	472×472 mm		
Type		homogenous tiles			heterogenous tiles		
Weight (+10%)*		1,4kg	2,2 kg	1,7 kg	1,9 kg	2,1 kg	2,6kg
Wear adjustment		PVC			Fatra DOMO	Fatra Novoflor Extra	Tarkett Premium Collection
Surface		skin/diamond/coins	skin/diamond/coins	snake skin			
Surface layer		PVC			PUR		
Thickness		7 mm		6,7 mm	6,5 mm	6,5 mm	
Wear layer thickness	EN 429	7 mm		6,7 mm	0,2 mm	0,8 mm	2 mm
Dimensional stability *	BS EN 434	≤ 0,4 %					
Chemical resistance	EN 423	good					
Reaction to fire *	EN 13501-1	B _s -s1					
Bacteria resistance	EN ISO 846	satisfactory					
Hardness *	EN ISO 868	92±3 Shore A					
Deformation after static load *	EN 433	< 0,1 mm					
Effect of rolling chairs	EN 425	good					
Abrasion resistance *	EN 660-2	T					
Anti-slip *	DIN EN 51130	R10			R10	R10	R9
Straightness of rectangularity, length *	EN 24342	<=±0,20% of nominal length					
Color consistency *		<±2ΔE*ab					
Color fastness to artificial light		>5 (without damage) (EN 20105)			≥ 6 (EN ISO 105 - B02)		
Colors		More information at www.fortelock.com					
Warranty		up to 12 years					
Number per 1 m ²		4			5		

* cannot be guaranteed for tiles made from recycled material

The transitions and corners for Fortelock PVC tiles of the Light and Industry series meet the technical parameters of Fortelock Industry tiles. For the DECOR, SOLID and INVISIBLE series, the features of transitions and corners correspond to those types of tiles. They differ only in dimensions. If you plan to use transitions and corners for the DECOR, SOLID and INVISIBLE series, observe the diagram with the recommended method of installation. The final choice of the type of corner and transition depends on the direction of installation. For the various options of color and type of tread, see the website www.fortelock.com. For more information, contact your dealer.



1. INTRODUCING FORTELOCK PVC FLOOR TILES

We would like to introduce you to a first-class system of interlocking PVC floor tiles. These tiles are manufactured in modern, energy-saving injection molds in homogenous or heterogeneous designs. The Fortelock system can be installed on old and new surfaces of varying quality. The choice of carefully selected materials allows homogenous tiles to exhibit high resistance to wear and chemicals and have long-term stability. They are used to create a wear layer for the floor that can take high operational loads and offer superior abrasion resistance, can withstand impacts and seepage of liquids (oils, solvents, and more).

The aesthetically sophisticated heterogeneous Fortelock Decor tiles are designed for commercial, residential and civic spaces, where they stand out for their resistance, ease of maintenance and safety for walking on.

Made in the Czech Republic.

2. PRODUCT LINES

HOMOGENEOUS TILES

Fortelock LIGHT 2050 – diamond design 2060 – skin design 2080 – coins design	2015 – diamond transition 2025 – skin transition 2045 – coins transition
Fortelock INDUSTRY 2010 – diamond design 2020 – skin design 2040 – coins design	2016 – diamond corner 2026 – skin corner 2046 – coins corner
Fortelock ECO 2010 – diamond design 2020 – skin design 2040 – coins design	2035 – Invisible transition – type A 2034 – Invisible transition – type B 2033 – Invisible transition – type C 2032 – Invisible transition – type D
Fortelock INVISIBLE 2030 – snake skin design	2036 – Invisible corner – type A 2037 – Invisible corner – type B 2038 – Invisible corner – type C 2039 – Invisible corner – type D

HETEROGENEOUS TILES

Fortelock HOME DECOR / 2110	
Fortelock BUSINESS DECOR / 2120	
Fortelock SOLID DECOR / 2130	
2115 – Homedecor transition – type A 2114 – Homedecor transition – type B 2113 – Homedecor transition – type C 2112 – Homedecor transition – type D	2126 – BusinessDecor corner – type A 2127 – BusinessDecor corner – type B 2128 – BusinessDecor corner – type C 2129 – BusinessDecor corner – type D
2116 – HomeDecor corner – type A 2117 – HomeDecor corner – type B 2118 – HomeDecor corner – type C 2119 – HomeDecor corner – type D	2135 – SolidDecor transition – type A 2134 – SolidDecor transition – type B 2133 – SolidDecor transition – type C 2132 – SolidDecor transition – type D
2125 – BusinessDecor transition – type A 2124 – BusinessDecor transition – type B 2123 – BusinessDecor transition – type C 2122 – BusinessDecor transition – type D	2136 – SolidDecor corner – type A 2137 – SolidDecor corner – type B 2138 – SolidDecor corner – type C 2139 – SolidDecor corner – type D

3. INSTALLING A NEW FLOOR

3.1. TEMPERATURE CONDITIONS AND ADJUSTMENTS TO THE ORIGINAL SUBSTRATE

TEMPERATURE CONDITIONS

Do not install the tiles immediately after delivery. The flooring must be allowed to acclimatize for at least 48 hours prior to installation at an ambient room temperature of 18-26°C. The higher the temperature, the faster the tiles will acclimatize. The tiles must be unloaded from the pallets and laid out in the room where they will be installed. In order to speed up the process of acclimatization, lay out the tiles in small groups, e.g. in bundles of 10 tiles each. Ensure that the temperature of the substrate does not fall below 15°C. The working temperature during installation, and 24 hours after it is complete, must be constant and within the range of 18-26°C to avoid any situations where the temperature could change the dimensions of individual parts of the floor covering. For installations where temperature deviates from the normal, the movement of the floor needs to be expected and so a gap of at least 5 mm needs to be left between the tiles and any fixed point (e.g. the wall). If the installation must take place at a temperature below 15°C, leave a larger expansion gap (joint) between the tiles and any fixed point (e.g. the wall). In the event installation is necessary where the temperature falls below 0°C, contact the sales department of the manufacturer.

MODIFYING THE ORIGINAL SUBSTRATE

A prerequisite for ensuring the lasting quality of PVC flooring is a flawless substrate constructed according to the recommendations of prevailing national or European standards. The surface must be flat, smooth, without any cracks or dust, adequately firm, clean and dry. Greasy stains and other impurities must be removed. We recommend correcting and leveling out any bumps, cracks, structural joints and uneven patches. Fortelock tiles can be placed on virtually any hard surface that is smooth and levelled. Therefore, remove any uneven points from the floor. Level out any unevenness and cracks or fill in any holes with a floor screed or grout (e.g. FortegROUT).

RECOMMENDATIONS

In case other constructions activities continue, protect your newly installed floor with a suitable protective cover. Limit the risk of accidental damage.

3.2. INSTALLATION METHOD

FORTELOCK FLOORING SYSTEM SERIES

LIGHT, INDUSTRY, INVISIBLE, ECO, DECOR

After modifying the original substrate, lay out the tiles of Fortelock Light, Industry or ECO on the floor, put them in their place and make sure the gaps are in a single line. It is necessary for the tiles to retain a right-angle position. Lightly snap the tiles together with a rubber hammer. Start in a corner and proceed outwards to the edge of the tiles.

When installing a new floor that includes floor transitions, start with these transitions and then continue according to the above principle. For example on how to use individual transitions, look at the illustrative image.

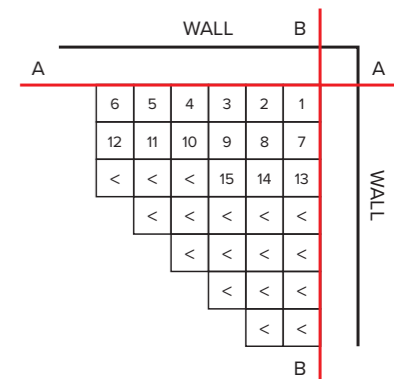
When cutting perimeter tiles, make sure to keep a gap of 5 mm from any fixed point (e.g. around columns, shelves and walls). This gap can be grouted with a flexible sealant or covered with molding.

We recommend you follow the above installation method to make the installation easier of the floor transitions that finish off the Fortelock DECOR and INVISIBLE tiles.

When installing a new floor that includes floor transitions, start with these transitions and then continue according to the above principle. For example on how to use individual transitions, look at the illustrative image.

RECOMMENDATIONS

Since the pattern of Fortelock DECOR is random, we recommend you spread out and compare the tiles and then put them together according to your own discretion.



3.3. CUTTING PERIMETER TILES

After cutting the piece, it is necessary to have the cut side facing the wall with an expansion gap of approximately 5 mm remaining to the wall. Keep this gap for all objects or connecting structures you pass around (e.g. heating, different floor coverings). Afterwards cover the gaps with skirting boards or fill them in with a flexible grout.

You can easily cut Fortelock PVC tiles with a saw or knife. Don't exert force on the tiles, just connect them and gently tap them with a hammer. For easy, straight and above all quick cuts of individual tiles we recommend using a cutter/guillotine, for example, Freiss PF-63

Before making difficult and complicated cuts, create a template.

Important!

- The cut tiles, closest to the wall, must be more than 10 cm wide.
- For doors and nooks and crannies, the surface for the cut tile must be greater than half of the original whole tile.

3.4. GLUING TILES

Fortelock PVC tiles can be placed on any hard surface. Under normal circumstances, there is no need to glue the tiles to the substrate. The exception is any place where the floor is subject to large temperature fluctuations (especially direct sunlight) or where the floor is exposed to moisture and water over a long period of time. In these places, we recommend gluing the tiles.

The size of the area for gluing in one operation depends on the conditions of the site, such as the relative humidity, temperature and airflow that affect the gelling action in the adhesive and likewise the complexity of the pattern.

Adhesive manufacturers give a working time for the glue and this time must be taken into account. For gluing tiles in areas with heavy loads, we recommend the adhesives Uzin KR 430, Bostic EPONAL PU 456, Murexin PU 330, Dipur Polychem.


For areas with normal loads, we recommend a general dispersion or solvent-based adhesive good for gluing PVC flooring.

See the instructions of the adhesive manufacturer for the suitability, application and conditions of use.

3.4.1. WHEN TO GLUE THE FLOOR?

DIRECT SUNLIGHT

We recommend gluing tiles in places that are exposed to direct sunlight. These are mostly glazed parts of the room, the doors of loading spaces facing south, skylights, etc. Tiles exposed to direct sunlight can very easily absorb heat and expand quicker than the rest of the floor. In case of big temperatures changes, we recommend you to use glue.

 **Warning:** Tiles made from recycled material are more expansive than tiles from primary raw materials.

HEAVY TRUCKS AND AREAS UNDER GREAT STRESS

Some forklifts and pallet trucks can disrupt the durability of Fortelock PVC floor tiles in the locks. These include heavy trucks with small wheels, especially electric heavy-duty trucks, where the battery is located above the main drive axle. If you use this type of truck, we recommend testing these tiles first with it before you make a decision about which type of tile to use.

The recommended maximum loads for a floating installation without gluing:

- Four-wheeled forklifts with rubber tires that can carry loads up to 1,500 kg.
- Three-wheeled forklifts with rubber tires with a double rear wheel that can carry loads up to 1000 kg.
- Pallet trucks with a total weight including cargo not exceeding 1000 kg.

 **Note:** For uneven surfaces and/or use of tiles made of recycled material, the maximum load can be reduced.

EXTERNAL HEAT SOURCES AND CATALYSTS

Ovens, furnaces and catalyzers can strongly heat up the floor and cause the tiles to expand. To avoid this from happening, the tiles in any heat generating space need to be glued. Whether it be in front of your oven or where you park your car and the catalyzer will be running, or another source of heat.

4. WARRANTY

Fortemix provides the following warranty, which is subject to the terms and conditions herein and terms and conditions at www.fortemix.eu/tot.pdf, for all interlocking PVC floor tiles for a period of one (1) year from the date of shipment or for a period according to the prevailing laws of the country of delivery if a longer period is required.

Fortemix will replace all defective products free of charge if the defect is discovered prior to installation. If the customer believes that the defect in the product occurred after installation, this matter should be reported immediately to Fortemix and an inspection of the product permitted. If after the inspection Fortemix acknowledges that the product is defective and it does not relate to the restrictions contained in this warranty, the defective product will be replaced with the delivery of a flawless product.

Fortemix guarantees the wear resistance of its Fortelock Light, Industry, Invisible (PVC floor tiles) for a period of three (3) years from the date of manufacture in the case of gray and black colors and six (6) years in the case of other colors, with the exception of products made from recycled material. For a fee, the warranty can be extended to six (6) years in the case of gray and black color and twelve

(12) years for other colors from the date of manufacture, with the exception of tiles made from recycled material. Fortemix guarantees the wear resistance of its Fortelock DECOR (PVC floor tiles) for a period of six (6) years from the date of manufacture. For a fee, the warranty can be extended to twelve (12) years from the date of manufacture.

Should the owner not be satisfied with the wear resistance, they must notify Fortemix and allow an inspection of the floor to be carried out. Should the wear layer of the original floor become worn and the floor was installed and maintained properly, Fortemix will replace the worn tiles with the delivery of new ones. The change of tiles may be subject to a customer fee that reflects the difference in the depreciation of the new and old tiles.

To ensure the customer's right to a replacement of tiles under this warranty, they must notify Fortemix in writing about any claimed defect immediately after discovering it, but no later than 90 days after discovering the defect. This notification should be sent to the company's address: Fortemix s.r.o., Kirilovova 812, Paskov, Czech Republic

4.1. THESE WARRANTIES DO NOT APPLY TO THE FOLLOWING:

- The exact hue, color, and consistency.
- Tears, burns, cuts and damage caused by improper installation, sharp wheels, or the incorrect or gross use of cleaning agents or maintenance methods.
- The costs of the delivery and installation of the original and/or replaced material.
- Problems caused by moisture, hydrostatic pressure, or alkali substances in the basic layer of the floor.
- Problems caused by use, maintenance and installation, which do not adhere to the specifications issued by Fortemix, its recommendations or instructions.
- Material installed with obvious defects.
- Installation with adhesives other than those recommended by Fortemix.
- Fading or lightening due to the excessive penetration of sunlight and exposure of ultraviolet radiation from direct sunlight or sunlight passing through glass.
- Written exclusion of the company warranty.
- Direct or implied promises made by a salesperson or representative.

These warranties replace all other warranties, expressed or implied. Fortemix is not liable for any incidental or subsequent damage that can cause a defect. An extended warranty must be confirmed in writing by Fortemix. Fortemix is not liable for damages resulting from a failure to observe the instructions and recommendations of the manufacturer.

This manual has been prepared as a guide only. This information is provided in good faith, but without guarantee, since conditions on site can differ and Fortemix can in no way influence them.

Fortemix accepts no liability for any of the recommended products if they fail in conjunction with any of their products. Having the proper knowledge of whether the products used are suitable for the given application is the responsibility of the manufacturer (of cleaning agents, adhesives, leveling compounds, etc.) and floor installer, not the floor manufacturer.

5. ADVICE AND WARNINGS

In order to ensure your satisfaction with the final floor, eliminate unwanted risks and make the installation go without needless problems, we have prepared a list of recommendations and warnings for you. You will appreciate them whether you are dealing with interior/exterior versions or their actual

installation and maintenance. Fortelock PVC floor tile systems are the fast way to a new floor.

1. **Some tires and wheels can leave stains on tiles over time. This is due to the chemical reaction that occurs between the antioxidant used in some rubbers and the plasticizer used in vinyl. This stain/reaction is brown in color and so is not as visible on certain colors of tiles (dark gray, black, etc.). We recommend that you consider using a two-component polyurethane sealant to protect against coloring and stains (such as Dr. Schutz). Floors can become stained from tires, hair dyes and other aggressive chemicals. Please contact us and we will provide you with more information.**
2. **In order to ensure the better appearance, cleanability and durability of your floor, we recommend you use the products and cleaning agents available from Dr. Schutz.**
3. **The tiles of the ECO series (ECOgrey, ECOblack), which are made from recycled wires, are not uniform in color and may contain substances that contain these wires, such as copper, aluminum, cadmium, and lead. They may also contain phthalate DEHP (EC 204-211-0; CAS 117-81-7), which is included among the substances subject to restrictions according to Annex XVII of the REACH regulation and also among the substances subject to authorization, Annex XIV of the REACH regulation. Phthalate is not released from our product under normal conditions, nor is any release reasonably expected under the conditions of use, and we do not anticipate any risk to health or the environment when used according to recommendations. The content of phthalate in the product is in a concentration between 0-5%. This needs to be taken into account when placing the tiles.**
4. **The substrate must meet the requirements of local standards for the installation of PVC floors.**
5. **Floorings are designed for the interior. Gluing them must not take place in areas that are not sufficiently insulated against bottom moisture. Avoid introducing any dampness to a substrate (e.g. wet shoes, spilling a bucket of water) ready for installation.**
6. **Do not expose the floor to the effects of water for at least 24 hours or an environment with long-term relative humidity in excess of 75%. The conditions for using such a floor: air temperature + 10°C to + 35°C, relative humidity (50 +/-10%).**
7. **Avoid moving objects on the floor surface that have sharp edges made of materials with a hardness greater than PVC. Pebbles, grains of sand, the edges of furniture legs and claws of pets can damage the surface with scratches. Add protective feet to objects with sharp angles or corners. Do not move pallets without lifting them. Avoid scratching the floor.**
8. **For rolling chairs, use wheel type "W" – soft plastic on a hard core, or a protective PET pad designed for under mobile furniture. Fit the legs of furniture with protective soft plastic gliders, material pads, etc., and regularly check that they are working.**
9. **If the protective layer of a PVC floor is scratched due to moving around furniture that lacked any protective contact with the floor using appropriate protections, no claim can be made for these scratches.**
10. **Do not exceed a pressure point of 5 MPa on the floor.**
11. **Hot and smoldering objects leave indelible changes in color and structure. Products made from dark and dyed rubber (rubber wheels, mats for appliances, soles, etc.) may, after prolonged contact with the floor, cause permanent changes in the color of the wear layer, which will show up as yellowing, browning or blackening of the floor surface at the point of contact.**
12. **Tiles are not recommended for outdoor use as their colors are not UV stable. Direct ultraviolet radiation within the C spectrum (e.g. germicidal lamps, direct solar radiation) gradually degrade the surface and change the color of the floor permanently.**
13. **Complying with preventive measures like using adequately sized and cleaned zones and using the right resources for treatment and maintenance contribute significantly to the quality and life of the floor.**
14. **Hot-air welding with welding tips or cold welding is recommended in case a perfect connection and seal between the tiles is needed. In the case of using adhesives, we can weld a floor and put it into operation only after it is cured.**
15. **Unfortunately we are unable to guarantee the 100% consistency of the color, especially between individual product batches. The installation has to be adapted when using various batches.**
16. **The manufacturing process of Fortelock Home Decor tiles of the Wood design does not allow individual tiles to be automatically joined together because installing randomly selected tiles would disrupt the wood decor.**
17. **These tiles were designed to provide exceptional durability and be easily installed. We have achieved this using a unique locking design and manufacturing method. The results of this method can be seen in the visible traces of injection on the tiles flowing from the center outwards to the edge (applies for Fortelock Industry, Light, ECO). These traces are unavoidable.**
18. **In spite of the fact that these tiles have a unique moisture drainage system that prevents water from accumulating, the possibility of moisture appearing in the gaps between the squares must be reckoned with and this information needs to be included in the building specifications.**
19. **Before application, please check the website www.fortemix.cz to see if you have the current technical documentation.**
20. **For better bonding of the locks in the corners of connected tiles, we advise you to rotate the next tile 90 degrees to the previous one. The logo displayed on the bottom of the tile will aid in this. Maintain this procedure throughout the installation process.**
21. **For more detailed information about maintenance, see the document entitled "Cleaning, Maintenance and Disinfection".**

 **Note:** Unless noted otherwise, the procedures, recommendations and warranties below apply for all types of Fortelock tiles.