

## 1. PRESENTATION OF THE PVC FLOORING FORTELOCK

We are introducing the first-class system of PVC interlocking flooring. The floor tiles are made by state-of-the-art and energy efficient injection presses and they feature homogeneous or heterogeneous designs. The system Fortelock can be laid on both new and old surfaces of various qualities. Thanks to the carefully selected material, the homogeneous floor tiles excel in high wear resistance, resistance to chemicals and long-term stability. They are intended to create floor

coverings exposed to heavy load, which require superior abrasion resistance, impact resistance and resistance to penetration of liquids (oils, solvents and others). The aesthetically designed heterogeneous floor tiles Fortelock are intended for commercial, residential and public premises, as they excel in material resistance and easy maintenance as well as a positive effect on safety when walking. Made in the Czech Republic.

## 2. INSTALLATION OF A NEW FLOOR

**1.** The floor tiles shall be installed on a level and hard surface. Be sure to let them acclimatize thoroughly (see clause 2.1).

**2.** In case of higher load on the floor (in particular when using pallet trucks), consider fixation or bonding with adhesive (see clause 2.3). Please, first browse our advice, warnings and guarantees (clauses 3 and 4).

**3.** Before laying, mark the ground with chalk or laser and make two orthogonal lines, see the dashed line in the drawing. Fortelock Industry Light and XL shall be marked from the entrance to the room, whereas Decor and Invisible shall be marked at the edge, at least 10 cm from the wall. Put the side of the floor tile with hidden interlocks to the wall.

**4.** If you want to have the entryway trims positioned precisely, first put two rows of floor tiles along the line and connect the entryway trims where required.

**5.** The floor tiles shall be installed in their places in the order as indicated in the drawing. Knock with a rubber mallet (with a black or white head according to the colour of the floor). Start with the outer corners of the floor tile and continue toward the inner corner of the floor tile before laying. It is

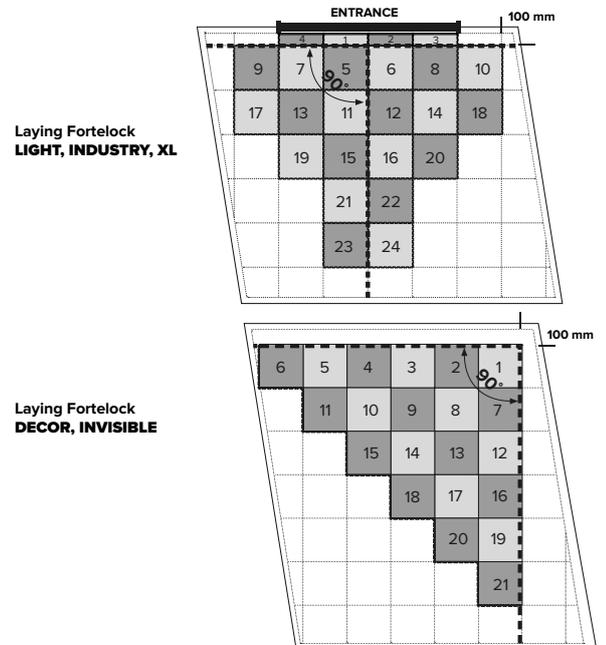
imperative that the floor

The pattern on the floor tile Fortelock DECOR is random. Therefore, it is advisable to spread the floor tiles, compare them and assemble them as you wish.

**6.** Any final cuts and completion of peripheral floor tiles (see clause 2.2) shall be done only after the floor tiles have all been laid. Ideally after several hours after their application. When cutting the peripheral floor tiles, consider a gap of min. 10 mm from any fixed point (e.g. around a column, rack or walls). In case of tiles marked as Eco, count at least with a gap of 15 mm. This joint can be pointed with flexible sealant or covered with a strip.

**7.** After the application, we recommend that you use products and detergents made by Dr. Schutz and read the document Cleaning, Maintenance and Disinfection thoroughly.

**8.** We will be very happy if you share your good or bad experience with laying your floor as well as your photographs. Please send your comments to us at [info@fortemix.cz](mailto:info@fortemix.cz).



## 2.1. TEMPERATURE CONDITIONS AND PREPARATION OF THE ORIGINAL SUBFLOOR

### TEMPERATURE CONDITIONS

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 / 6 pieces for XL. 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.

### PREPARATION OF THE ORIGINAL SUBFLOOR (SURFACE)

The floor tiles Fortelock can be installed on virtually any hard surface, which is smooth and even. Therefore, remove any uneven points from the floor. Any unevenness and holes shall be filled with filling or sealant intended for repairs to floors. To ensure permanent functional qualities of PVC floorings, the structure of the subfloor must be flawless, as recommended in applicable national or European standards.

### 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.

## 2.2. CUTTING OF PERIPHERAL TILES, INSTALLATION OF BASEBOARDS

To shorten the panel, the side to be cut must be turned to the wall, so that there is an expansion gap of approx. 10 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 fill with elastic sealant.

For easy, even and, in particular, fast cuts of individual floor tiles, we recommend that you use a cutter/a guillotine, e.g. type FREISS PF-63. The PVC floor tiles Fortelock Light can be easily cut with a knife. Prior to any difficult or complicated cuts, make a template. If you do not have a cutting machine/trimmer, it is also possible to use hot air guns to heat the tile at the cutting point, then the tile can be cut with an ordinary cutter knife. Especially for more complex cut-outs (eg around heaters, door frames, niches and external corners), cutting is much easier with the use of a hot air gun.

The tiles can also be supplemented with original floor moldings. The floor moldings are made from Industry series tiles (except ECO), so the technical parameters are identical to Fortelock Industry tiles.

Floor moldings can be installed in three ways:

- by screwing the base molding into the wall and inserting the floor molding,
- gluing the base molding to the wall and inserting the floor molding,
- by direct screwing the floor molding into the wall without using the base molding.

The least technically demanding is the installation b). We first adjust the size of the base molding to the size of the room (they are supplied in a length of 2.5 m). Then we glue the base molding to the wall - we recommend using Den Braven Mamut glue for gluing - or we screw it properly. In case of gluing, it is necessary to let the glue harden before inserting the individual parts (we recommend 24 h). If you screw the base molding, it is possible to install the individual parts of the floor molding immediately. Insert the upper part of the floor molding under the edge of the base molding and press it against the wall so that the lower part of the floor molding (narrowed part) covers the expansion joint. Gradually, we insert other parts of the floor molding and pay attention on the correct connection of the locks.

In the case of direct screwing to the wall, measure the height (9 cm) and screw it into the wall. During installation, we pay attention to the correct connection of the locks.

### IMPORTANT

- We recommend that the width of the cut tiles, located closest to the walls, should be more 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.

## 2.3. FLOOR-TILE BONDING AND FIXING

Under certain, below-listed conditions, the PVC flooring Fortelock must be fixed or bonded to the subfloor.

The fixation shall mean detachable connection of floor tiles, which sufficiently ensures the stability of floor tile for high-load travel. To fix the floor tiles, it is advisable to use the product UZIN Universalfixierung 6473. Absorbent subfloors absorb thin dispersion coating and reduce anti-skid effects. That is why the floor shall be penetrated using suitable penetration coating.

The fixation shall also mean the application of water-removeable coating intended for floors, which holds the floor tile in place.

### ADVANTAGES

- Simple application with a roller
- Low consumption
- Dismantling one floor tile or the entire floor is easy
- The coating can be removed with warm water and it does not damage the subfloor

Gluing is a permanent way of bonding floor tiles with the floor. For usual places, you can use common dispersion or solvent adhesives, suitable for gluing PVC floorings. To glue floor tiles on heavily-loaded areas, it is advisable to use the adhesives Uzin KR 430, Bostic EPONAL PU 456, Murexin PU 330 and Dipur Polychem.

In terms of the suitability, application and conditions for the use of the adhesives, follow the manufacturer's instructions.

### 2.3.1. WHEN SHALL THE FLOOR BE FIXED OR BACKED WITH ADHESIVE?

#### DIRECT SUN LIGHT

It is advisable to glue the floor tiles in places exposed to direct sunlight. The places include, in particular, glazed parts of the room, south-facing doors of the loading area, ceiling skylights, etc. The floor tiles exposed to direct sunlight can easily heat up and expand faster and more than the rest of the floor.

#### ⚠ CAUTION

*Recycled floor tiles are more expansive than floor tiles made of primary raw materials*

#### HEAVY TRUCKS AND HIGHLY-LOADED PLACES

Some fork-lift trucks and pallet trucks can impair the durability of the PVC flooring Fortelock in interlocks. They include, for example, heavy trucks with small wheels, in particular electric trucks for heavy loads, where the battery is placed over the main driven axle. Should you use this type of trucks, we recommend that you test these floor tiles with the trucks before you make a decision on the type of floor tiles to be used.

For permanent use, the floor tile must be fixed to the floor.

Recommended maximum load weight, incl. the weight of the track for:	Free laying		Fixation		Gluing
	Using at 20 °C	Using at 25 °C	Using at 20 °C	Using at 25 °C	
Four-wheel fork-lift trucks with rubber tires	< 5 500 kg	< 5 000 kg	< 5 500 kg	< 5 500 kg	> 5 500 kg
Reach trucks with hard wheels	< 0 kg	< 0 kg	< 4 200 kg	< 4 200 kg	> 4 200 kg
Pallet trucks on hard wheels	< 800 kg	< 500 kg	< 1 800 kg	< 1 800 kg	> 1 800 kg

**Note:** Where there are uneven surfaces and/or where the floor tiles from recycled material are used, the maximum load capacity can be reduced. The figures in the table were based on the recommended use of PVC tiles Fortelock Industry.

#### EXTERNAL HEAT SOURCES AND CATALYSTS

Any ovens, furnaces and catalysts can heat up the floor strongly, causing the floor tiles to expand. To avoid this process, glue the floor tiles in the area of the heat source. When in front of the oven or where there is a catalyst of a parked vehicle or any other heat source.

## 3. 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](http://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.

**The company Fortemix shall guarantee wear resistance of the flooring Fortelock, series Light, Industry, Invisible, XL (floor tiles made of PVC) in grey and black colours for three (3) years, and in other colours for six (6) years from the date of manufacture, except for products from recycled materials (marked as Eco), where the warranty is two (2) years from the**

**date of production. The warranty can be extended to six (6) years for grey and black. This extension is subject to a fee and twelve (12) years from the date of manufacture for other colours, except for the floor tiles made from recycled material. The company Fortemix shall guarantee wear resistance of the flooring Fortelock, series DECOR (floor tiles made of PVC) for a period of six (6) years from the date of manufacture. For a fee, the guarantee can be extended to twelve (12) years from the date of manufacture.**

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.

### 3.1. THESE WARRANTIES DO NOT COVER:

- 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.
- Any problems due to use, maintenance and installation in conflict with the specifications indicated by the company Fortemix, its recommendations and instructions.
- Material installed with obvious defects.
- Installation with adhesives other than those recommended by Fortemix.
- Written Disclaimer.
- Any direct or indirect promises made by a reseller or a representative.

These 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. does not accept responsibility for any of the recommended products, because the correct information about the suitability for the given use (e.g. quality of the substrate, conditions on constructions or during working) is the responsibility of the producer (of e.g. cleaners, adhesives, screeds, etc.) and the floor implementer, not producer of floor tiles.

#### ⚠ NOTE

Unless otherwise stated, the procedures, recommendations and warranties below are applicable to all kinds of Fortelock flooring.

## 4. ADVICE AND WARNINGS

To ensure your satisfaction with the resulting floor covering, to eliminate adverse risks and to ensure effortless installation, we have prepared a list of advice and warnings for you. You will appreciate them, whether you deal with interior/exterior designs or their implemen-

ta-tion and maintenance. The system of the PVC flooring Fortelock is a quick way to get a new floor.

1. Some types of tyres and wheels can stain the floor tiles over the time. This is due to the chemical reaction that occurs between the antioxidant used in some rubbers, and the plasticizer used in vinyl. The stain/reaction is brown, so it is not so visible on some colours of floor tiles (dark grey, black, etc.). We recommend that you consider using two-component polyurethane sealing coat against colouring and staining (e.g. Dr. Schutz). When using the floor, some stains from tyres, hair dyes and other aggressive chemicals can occur. Please contact us for more information.
2. To ensure better cleanability, appearance and durability of the floor covering, we recommend that you use products and detergents manufactured by Dr. Schutz.
3. The floor tiles belonging to the series ECO (ECOGrey, ECOblack), which are made from recycled conductors, are not uniform in colour and they can contain substances which are contained in the conductors, such as copper, aluminium, cadmium and lead. Due to the use of the ECO input material, ECO tiles can have visual defects on the surface in the form of a sil-vering effect or dispersed small particles, which, however, do not limit the functionality of the tiles in any way. Furthermore, they can contain phthalate DEHP (EC 204-211-0; CAS 117-81-7), which is classified as a substance subject to restrictions under the REACH Regulation and also as a substance subject to authorization, annex XIV of the REACH Regulation. Phthalates are not significantly released from our product under normal conditions. It is not reasonably expected to be released provided that the application conditions have been observed. We do not assume any risk to health or the environment if used as recommended. The content of phthalate in the product can range in the concentration between 0 to 5%. Please consider this information when placing the floor tiles and use them mainly for industrial and agricultural purposes.
4. The subfloor must meet the requirements stipulated in the local standard for PVC-floor laying.
5. The floorings are intended for interior use. If they are bonded, they must not be installed in the rooms which are not sufficiently insulated against ground moisture. Avoid bringing moisture (e.g. wet footwear, spilling a bucket of water) onto the subfloor ready for the installation.
6. Do not expose the flooring to water for more than 24 hours. Do not expose the flooring to the environment with relative air humidity of more than 75 % for a long time. Operating conditions for the flooring: air temperature +10 °C to +35 °C, relative humidity (50 ± 10)%.
7. Do not allow any objects with sharp edges from materials with hardness exceeding the hardness of PVC to move on the floor surface. Any stones, sand grains, edges of furniture legs or claws of pets can cause damage to the surface and scratch it. Mount protective feet on any objects with sharp or angled corners. Do not move pallets without lifting them. This will prevent the floor from being scratched.
8. For castor chairs, use the castors of the "W" type - soft plastic on a hard core, or protective PET mats intended for mobile furniture. The furniture feet shall be provided with protective glides made of soft plastic or felt pads or any other means. Check out their function regularly.
9. If the surface of the PUR protective layer has been scratched due to moving furniture without protected surfaces of contact with the floor by suitable protective means, no claim for this scratching can be made.
10. Do not exceed the point compressive load of the flooring of 5 MPa.
11. Glowing and smouldering objects leave irreversible changes to the colour and structure. Rubber objects from dark and coloured rubber (rubber castors, instrument mats, footwear soles and others) with prolonged contact with the floor can cause an irremovable colour

change in the wear layer of the flooring, resulting in yellowing, browning or blackening of the floor surface in the contact spot.

12. The floor tiles are not recommended for exterior use. Their colours are not UV stable. Directly incident ultraviolet radiation in the C spectrum (e.g. germicidal lamps, direct sunlight) causes gradual degradation of the surface and irreversible colour changes in the floor covering.
13. Adherence to preventive measures, such as using sufficiently dimensioned and efficient cleaning zones and using suitable products for care and maintenance, significantly contributes to the quality and durability of the floor covering.
14. Hot-air welding with a welding rod or cold welding are recommended when perfect sealing and joining of gaps between the floor tiles are required. If you have used adhesive, you can weld the floor and load it only after its curing.
15. Unfortunately, we are not able to guarantee 100% colour consistency among product batches. For different batches, the installation needs to be adapted.
16. The manufacturing process of the flooring Fortelock Home Decor, design Wood, does not allow automatic joining of individual floor tiles to ensure the consistency of the wood decor between randomly selected floor tiles.
17. The floor tiles have been designed to provide exceptional durability and easy installation. This was achieved by the unique interlock design and manufacturing process. This manufacturing method can cause visible traces of injection from the centre to the edge (applies to Fortelock Industry, Light).
18. Although some tiles have a unique drainage system to avoid moisture retention, you must consider the possibility of moisture entering into the joints of squares and include this information in the building specification.
19. Before the application, please check [www.fortemix.com](http://www.fortemix.com) to make sure you have the latest technical documentation.
20. For better consistency of interlocks in corners of joined floor tiles, it is advisable to turn the next floor tile by 90 degrees relative to the previous floor tile. The logo displayed on the bottom of the floor tile facilitates the installation. This procedure shall be adhered to throughout the installation.
21. More detailed information on maintenance can be found in the document: Cleaning, Maintenance and Disinfection.
22. When installing the diamond-pattern floor tiles on a pallet, the pattern can be embossed in the pattern of surrounding floor tiles. This aspect does not affect any technical properties of the floor. This is only a visual aspect.
23. Despite the increased resistance of the PVC floor tiles Fortelock to oils, petrol and other substances of petroleum origin, the floor tiles where such substances have been spilled must be cleaned as soon as possible.

## 5. TECHNICAL PARAMETERS OF THE PVC FLOORING FORTELOCK

Floor tiles Fortelock are subject to assessment under the EP and Council Regulation no. 305/2011 ("CPR") in compliance with the procedure according to the harmonized standard ČSN EN 14041. Detailed information about the product and its variants can be found in the catalog or on the website: [www.fortelock.com](http://www.fortelock.com). Contact your dealer for more information.

Series	Standard	PVC flooring Fortelock						
		LIGHT	INDUSTRY	INVISIBLE	XL	HOME DECOR	BUSINESS DECOR	SOLID DECOR
Product Numbers – Tiles		2050 – diamond 2060 – leather 2080 – coin	2010 – diamond 2020 – leather 2040 – coin	2030	2230	2110	2120	2130
Product Numbers – Entryway trims		2015 – diamond 2025 – leather 2045 – coin	2015 – diamond 2025 – leather 2045 – coin	2035 – type A 2034 – type B 2033 – type C 2032 – type D	2235	2115 – type A 2114 – type B 2113 – type C 2112 – type D	2125 – type A 2124 – type B 2123 – type C 2122 – type D	2135 – type A 2134 – type B 2133 – type C 2132 – type D
Product Numbers – Corners		2016 – diamond 2026 – leather 2046 – coin	2016 – diamond 2026 – leather 2046 – coin	2036 – type A 2037 – type B 2038 – type C 2039 – type D	2236	2116 – type A 2117 – type B 2118 – type C 2119 – type D	2126 – type A 2127 – type B 2128 – type C 2129 – type D	2136 – type A 2137 – type B 2138 – type C 2139 – type D
Product Numbers – Baseboards		2011 – diamond 2021 – leather 2041 – coin	2011 – diamond 2021 – leather 2041 – coin					
The area of use (classification according to ČSN EN ISO 10581 and 10582)		commercial and residential premises, garages, workshops (commercial use of the load class 32, 33)	industry, heavy-duty storage (industrial use, load classes 42, 43)	commercial and residential premises, garages, workshops, industry, heavy-duty storage (industrial use, load classes 42, 43)	commercial and residential premises, garages, workshops (commercial use of the load class 32, 33)	residential – housing premises with common use class 22, commercial use of classes 32, 33	commercial use, classes 33, 34 or industrial use, class 41	industrial use, classes 42, 43
The size of the tile with locks <b>1</b>		510,5 × 510,5 mm		468 × 468 mm	653 × 653 mm	472 × 472 mm		
Actual coverage size <b>2</b>		496,5 × 496,5 mm		453 × 453 mm	639 × 639 mm	456 × 456 mm		
Type		homogeneous flooring				heterogeneous flooring		
Weight (± 10 %) *		1,6 kg	2,2 kg	1,7 kg	2,3 kg	1,9 kg	2,1 kg	2,6 kg
Floor finish		PVC				Fatra DOMO	Fatra Novoflor Extra	Tarkett Premium Collection
Finish		leather/diamond/coins	leather/diamond/coins	snakeskin				
Surface layer		PVC				PUR		
Thickness		7 mm		6,7 mm	4 mm	6,5 mm	6,5 mm	
Surface (wear) layer thickness	ČSN EN ISO 24340	7 mm		6,7 mm	4 mm	0,2 mm	0,8 mm	2 mm
Dimensional stability *	ČSN EN ISO 23999					≤ 0,4 %		
Resistance to chemicals	ČSN EN ISO 26987					good		
Reaction to fire *	ČSN EN ISO 13501-1+A1					Bfl-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 ISO 425					suitable		
Abrasion resistance *	ČSN EN ISO 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 fastness to artificial light		>5 (without damage) (ČSN EN 20105-A02)				≥ 6 (ČSN EN ISO 105-B02)		
Warranty						up to 12 years		
Number of pieces in 1 m <sup>2</sup>		4		5	2,5	5		
Compressive strength *	ČSN EN ISO 604-1					520 kg/cm		
Electrostatic Behaviour	ČSN EN 1815					< 2 000 V		

\* cannot be guaranteed with the floor tiles made of recycled material.

