Flush metal door installation instructions

1. General

1.1. These instructions are designed for a specialist who is competent in the field of installation of flush metal doors and hatches (hereinafter the product). The types and specifications of the product are provided in Table 1. Before installation, please read the instructions and bring all the required materials and tools to the installation site. Determine the final finishing of the surrounding structures and the position of the product in the structure. Determine the locations of any potential communications in the structure to prevent driving the fixing elements of the product into any electric or weak-current wires, underfloor heating pipes, etc. Always place the product on a 'soft' surface in the installation site to prevent damaging the finishing of the product. Restrict the access of unauthorized individuals to the installation site for the duration of the installation works. Wear protective gloves and personal protective equipment that must be worn when working with the tools used during the installation works.

TABLE 1. Types of flush metal doors

Type of the door	E30	E60	EI_2-15	EI_1-15	EI_2-30	EI_2-60	EI_2-90	EI_2-120
TU-06	X	X	X	-	X	X	-	-
TU-07	X	X	X	-	X	X	-	-
TU-17	X	X	X	-	X	X	X	X
TU-16	X	X	X	-	X	X	X	X
TUL-01	X	X	X	-	X	X	-	-
TUL-02	X	X	X	X	X	X	X	-
U-3	-	-	-	-	-	-	-	-
U-4	-	-	-	-	-	-	-	-

2. Product

2.1. The set

The set consists of the door sheet, frame, striking plate, caps for covering the installation holes, and seals. Depending on the requirements and the specific order, the door set may also include a window, ventilation grid, mail hatch, lock frame, lock core with a cover, door knob, fix, panic exit lock, door closer, door viewer, cable bushing, magnet, automatic door sealing system, rubber seals, linear strip brush seals, and design elements.

2.2. Protection

The door sheet is covered with a film in the factory. The film is not designed for protecting the product from damages or soiling in the course of construction works. In order to protect the door sheets from damages or soiling, it is advisable to cover them with construction cardboard or thicker plastic sheets. **Never tape over the seals on the**

frame and on the door sheet when covering the door and working on the structures surrounding the door, as the seal may break or become loose as a result of removing the tape. Our warranty does not extend to seals that have been damaged in this manner.

3. The materials and tools required for installation

3.1. The materials for fixing

Suitable isolation materials for doors with fire resistance class are shown in table 2. Isolation material for doors without a fire resistance class is freely selectable according to environmental conditions. Door frame must be fixed with fastener that is suitable for the wall type. Fastener minimum dimensions are shown in table 2.

TABLE 2. The fasteners and isolation materials for fixing flush metal doors.

	TU-06	TU-07	TU-17	TU-16	TUL-01	TUL-02	U3	U4
Isolation materials / maximum mounting gap								
Rockwool with density ≥ 28 kg/m3 (e.g. Paroc Ultra)	25mm	25mm	30mm	30mm	10mm	10mm	40mm	40mm
Fire rated gunfoam (e.g. PENOSIL Fire Rated Gunfoam B1 187 or Soudal Soudafoam FR)	15mm	15mm	Not allowed	Not allowed	Not allowed	Not allowed	40mm	40mm
Gunfoam not firerated	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed	40mm	40mm
Minimum dimensions for fasteners								
Concrete screw	7,5x72	7,5x72	7,5x72	7,5x72	7,5x72	7,5x72	7,5x72	7,5x72
Lightweight block screw	8x90	8x90	8x90	8x90	8x90	8x90	8x90	8x90
Self-drilling metal screw	5x50	5x50	5x65	5x65	-	-	5x50	5x50
Wood screw	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72	6x80/ 7,2x72

The diameter of the heads of the fixing elements can be at most 30 mm due to the diameter of the installation holes in the frame.

3.2. Frame mounting wedges

Mounting wedges help to place the door in the proper position but are not required or compulsory tools for the installation of the door. When installing a TU product, the mounting wedges must be made of a non-combustible material, such as promatech, steel, cement fibreboard, dry wall, etc. Pieces of dry wall are not suitable for using as mounting wedges under the door sill.

4. Requirements for the openings for installation of the products

4.1. The sides of the opening must at least meet the requirements for class 2 of the RYL 2000/2010 standard for structures. The edges must be free of any residual grout and

other foreign bodies to ensure the best possible installation. The surface under the door sill must be as level as possible, straight, and of a load-bearing material (concrete, brick, wood, steel, etc.). Otherwise, the maximum permitted deflection of the sill cannot be ensured (+/– 2 mm).

4.2. In the case of a light steel frame wall, an at least 50 mm wooden reinforcement beam or a reinforcement profile must be used in the frame of the wall in the entire width of the frame.

4.3. When installing the product in a sandwich wall, the opening must be prepared based on the instructions of the manufacturer of the panels or based on the building design documentation. The products of Doordec OÜ may be installed in a steel box of the thickness of at least 1.0 mm.

If the conditions specified in points 4.1–4.3 are not met, the possibilities for installing the product and the potentially required additional works must be specified separately in each specific case and the contracting entity should be asked to confirm the installation works. The manufacturer cannot guarantee the proper functioning of a product which has been installed in an improper opening and the warranty of the product will become invalid.

5. Installation of the product

5.1. General instructions

The fixing holes have been prepared by the manufacturer. U and TU type products usually have four fixing holes on the sides and two on the top for fixing the frame, while larger frames have five fixing holes on the sides and three on the top. TUL type hatches have six fixing holes in total. If necessary, the door sill is attached by using 1–3 prepared fixing holes. The doors without sills have additional fixing holes in the inner edge of the frame for fixing the frame to the floor. If the fixing holes in the frame cannot be used for some reason, montage plates must be used. Montage plates must be attached to the frame with four non-corrosive blind rivets or at least Ø 3.2 mm steel self-drilling screws.

A fire grade door may be used without a sill if it has been manufactured for that purpose and if the floor on both sides of the door is made of a non-combustible material in the extent of 100 mm and if the door gap is not wider than 10 mm. In the case of a door without sill, there is a steel sheet attached to the bottom of the frame in the factory which must be removed before the installation of the product.

The installation gap between the product and the structure must be filled with materials that are specified in subsection 3. When filling with wool, the wool must be tightly installed between the side frame and the structure. When installing with wool or foam, the installation gap must be filled to the depth of the frame. In the case of doors that are installed in external walls, a 5 mm gap must be left under the threshold for foam. For sealing, the joint between the threshold and the floor must be covered with silicone on the outdoor side.

When using installation foam, fire-resistant foam must be used for fire grade products. See table 2. In a cold weather, the permitted installation temperature of the foam must be observed.

If the installation foam is not covered with plaster or silicone, it must be covered with steel trims. The trim must overlap with the wall by at least 5 mm and with the

frame by at least 10 mm. The trims are attached to the frame by using blind rivets. The distances between the rivets must be short enough to ensure that the trims are properly fixed. In most cases, rivets should be placed at an interval of 600 mm. NB! Both threshold silicone and finishing the sides of the door opening are not part of the installation offered by Doordec OÜ, unless separately agreed upon.

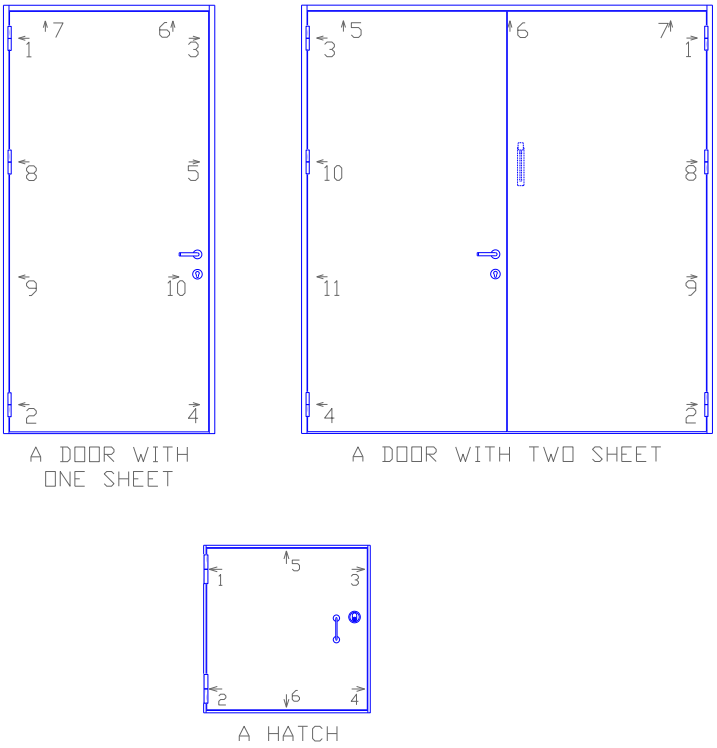
5.2. The order of installation operations

5.2.1. Remove the door sheet from the frame. Place the door sheet on a wooden or other base in order to avoid scratching it by leaning it on the floor.

5.2.2. Place the frame in the opening, fixing it in the opening so that the frame is straight and in the required place. Use mounting wedges, if necessary (see point 3.2).

5.2.3. Commence fixing the frame through the fixing holes in the frame based on the order provided on the 'Order of fixing during installation' figure.

FIGURE 1. Order of fixing during installation



5.2.4. Install the door sheet in the frame, make sure that the gaps between the door sheet and the frame are parallel above and below the door sheet, as well as on the side of the lock and on the side of the hinge. Make sure that the gaps between the door sheet and the frame are of an equal width and parallel. The permitted size of the gap is 4 ± 2 mm. The permitted installation tolerance of the frame in the horizontal and vertical directions is ± 2 mm. If necessary, adjust the door, the hinges, or the fixing.

5.2.5. Fill/seal the installation gap based on the instructions in Table 2.

5.2.6. Make sure that the door sheet moves freely, and the door closes smoothly. Make sure that the lock can be turned properly on both sides. Make sure that the door closes properly, and tongue of the lock remains in a fixed position. If there is a closer, install the closer on the frame and the arm of the closer to the door sheet based on the installation instructions of the manufacturer of the closer. Warning! In the event of a closer with a link arm, the arm of the closer must remain approximately at a 90° angle with respect to the door sheet when the door is closed. Make sure that the closer is functioning. If necessary, adjust based on the instructions of the manufacturer of the closer.

5.2.7. Install the trim or finish the sides of the door opening.

In case of any differences between the instructions and the actual situation in the installation site, as well as in the case of any issues or questions, please contact a representative of Doordec OÜ before installation (the contact information can be found in the header of the instructions).