GENERAL INSTALLATION MANUAL FOR SMU TYPE METAL DOORS AND SMU HATCH

1. INSTALLATION

Before installing, pay attention to the following:

- The door frame of the SMU type metal door and SMU hatch (hereinafter referred to as „opening filler “) must be fastened tightly and firmly into a completed structural opening and onto a completed floor. The thickness of the later flooring material should also be taken into an account. The most suitable installation time is after casting the floor and, if the side cheeks are finished without covering strips, before any possible finishing work on the wall. When using cover strips, it is advisable to install the door after the final finishing of the structural opening, incl. painting.
- **Suitable materials for isolating gaps between the door frame of the opening filler and the wall for doors with fire resistance class are shown in Table 1**, for opening fillers without a fire resistance class, insulation foam/wool can be freely chosen according to the conditions of the environment. It is also allowed to use wind and vapor barrier tapes over the installation slots (according to the user manual of the vapor and wind barrier tape manufacturer). Metal border strips can be used to finish the gap between the frame and the wall of the fire protection class products. Ask the door manufacturer for information about other materials.
- The door frame must be fixed with a screw fastening, suitable for the wall type. It is permitted to use wedge anchor bolts, screws, or bolts with metal or plastic dowels or other fasteners, the minimum dimensions are shown in **Table 1**

	SMU 101/201 102/202	**SMU 101/201 102/202 EI30/EI60**	**SMU 103**	**SMU 103 EI60**	**SMU 110/210**	**SMU 110/210 EI120**	**SMU 106/107/ 206/207**
Isolation materials for the gaps between the door frame and the wall							
Wool Paroc eXtra, Paroc-FPY; Roxrema*	x	x	x	x	x	x	x
Soudal Soudafoam FR *	x	x	x		x		x
Penosil Premium Gunfoam Fire Rated*	x	x	x	x	x		x
Penosil Premium Gunfoam Fire Rated**	x	x	x	x	x	x	x
Isolation foam for opening fillers without a fire class	x		x		x		x
Minimum required dimensions for the fasteners							
Screw for concrete Ø7,5x82	x	x	x	x	x	x	x
Screw for concrete Ø7,2x42 (for fastening the threshold)	x	x			x	x	x
Screw for a Fibo block Ø 8x90mm	x	x	x	x	x	x	x
Self-drilling screw for a metal frame Ø 6,3x55	x	x	x	x	x		x
Screws or bolts Ø 5x60mm	x		x	x	x		x
Screws or bolts Ø 5x60mm	x	x	x	x	x		x
Metal or plastic dowel Ø8x50mm	x	x		x	x		x

*Installation gap up to 30mm

**Installation gap up to 17mm

Table 1 Fasteners for the door frame and isolation materials for the gaps between the frame of the opening filler and the wall.

Works sequence:

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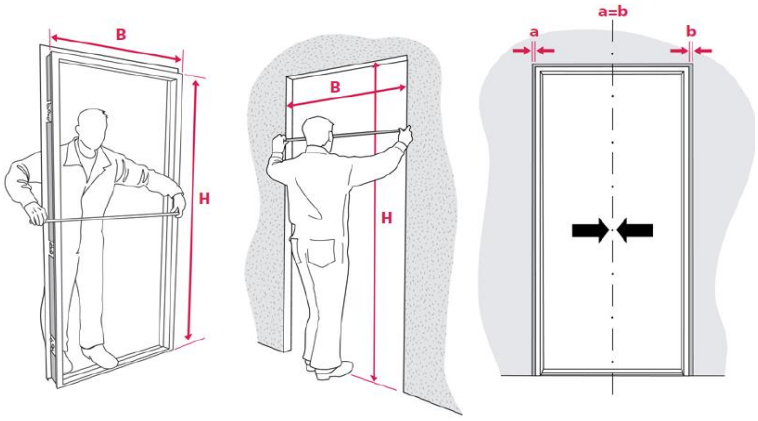
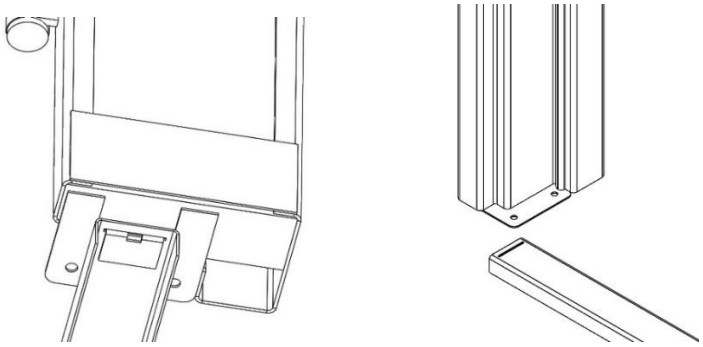
1) When transporting the opening filler to the aperture, avoid damaging the surface finish and, if necessary, protect the surfaces with cardboard, plastic foil or some other material.
2) Check the compatibility of the structural opening and the dimensions of the door.



3) Place the door frame into the structural opening on the completed and level floor.
   NB! In case of an opening filler without a threshold, make sure that you remove the installation support from the door frame and later from the sub-frame before installation!



4) Bend the fixing elements of the frame according to the building practice.
5) The thresholds of opening fillers, which are filled with wool, must be fitted with fire resistance class insulation foam – for opening fillers with a fire resistance class is shown in **Table 1,** and for opening fillers without a fire resistance class, the isolation foam can be chosen freely according to the conditions of the environment.
6) NB! If necessary, fix the hinge-side bottom corner with metal or plastic wedge (Plastic wedge is allowed to be used up to class EI 60 incl.)

7) Place the door frame in the center of the structural opening, while checking with a spirit lever that it is fixed correctly, both vertically and horizontally. If necessary, the frame should be wedged into the wall opening.

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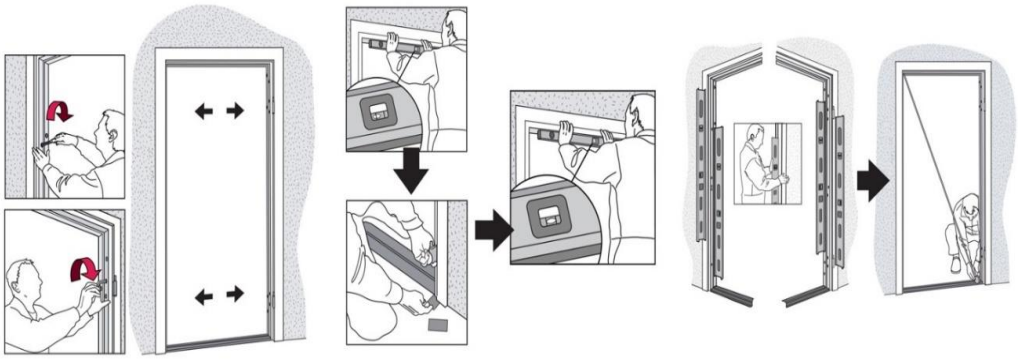
NB! Avoid deforming the door frame! Make sure the internal diagonals of the door frame are equal!

8) When the door frame of the opening filler is too large to be transported to the place of installation, a so-called lego door frame is utilized – for the assembling instructions, see Appendix 1.



9) If the floor is not level, nstall metal or plastic distance plates under the threshold (plastic wedges up to class EI60 incl.)

10) Fix the fasteners 1, 2 and 3 (see Figures 1, 2, 3 and 4) so that the threshold (if there is one) and the hinge-side door post are level. See Figure 11.

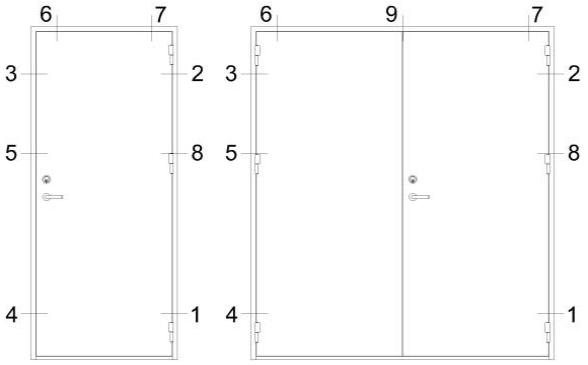


Figure 1 – Layout of fasteners SMU101/201

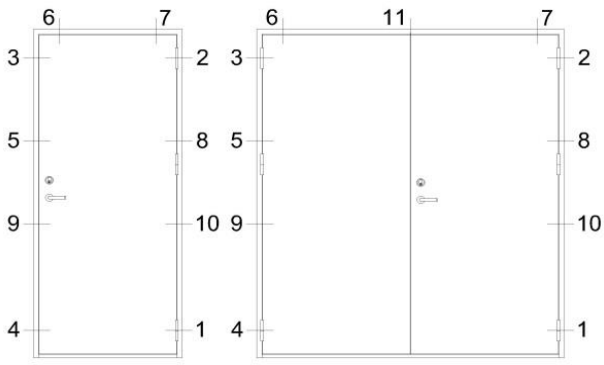


Figure 2 – Layout of fasteners SMU102/202

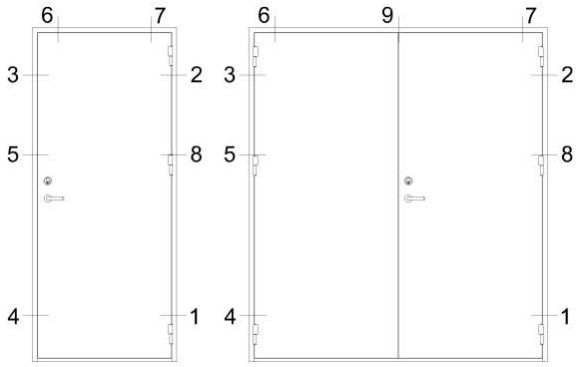


Figure 3 – Layout of fasteners SMU110/210
SMU106/206
SMU107/207
Doubled according to Figure 6

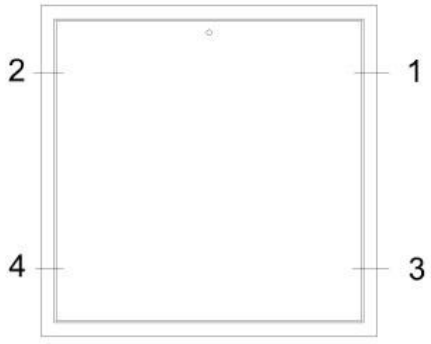


Figure 4 – Layout of fasteners SMU103

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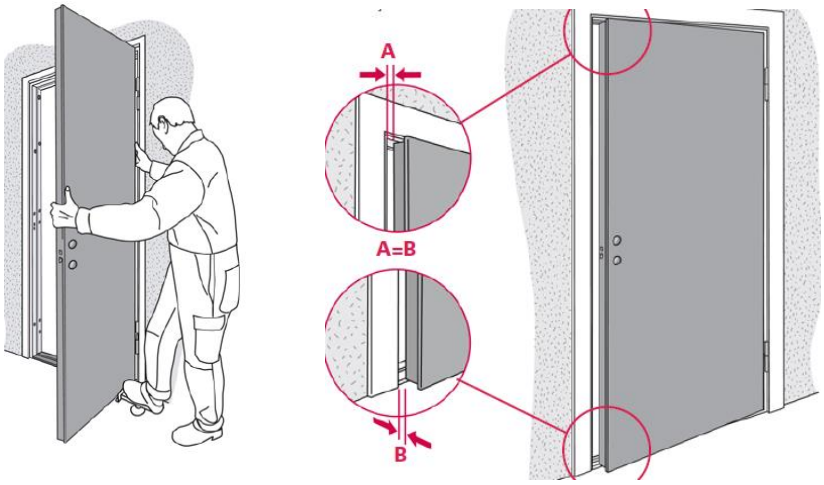
11) In the case of a double door, install the active door leaf into the frame and check the evenness of the gaps between the door leaf and frame at the top and bottom of the door leaf on the hinge and lock side. See Figure 5. If necessary, adjust the door!

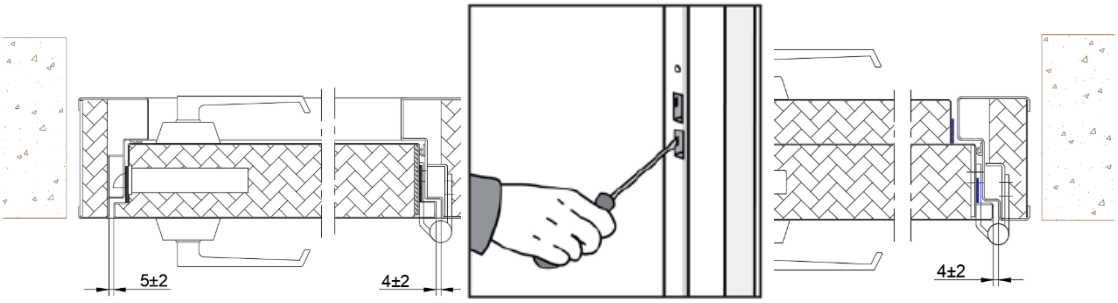


SMU110/201
SMU106/206
SMU107/207

SMU110/210

Figure 5 – Tolerances of the gaps between the door leaf and the frame

12) Fix the fastener 4 (See Figures 1; 2; 3 and 4).
13) In the case of a double door, install a passive door leaf into the frame and, if necessary, check the performance of the bolt(s)/hardware and adjust them, if necessary



14) Fix the other frame fasteners (**the number of fastener holes depends on the door type and dimensions**).
15) Fasten the threshold, making sure that the gaps between the door leaf and the threshold or on doors without threshold the gaps between door leaf and the floor comply with the requirements of Figure MT15008 (Appendix 4). For fastening screws, see Table 1!

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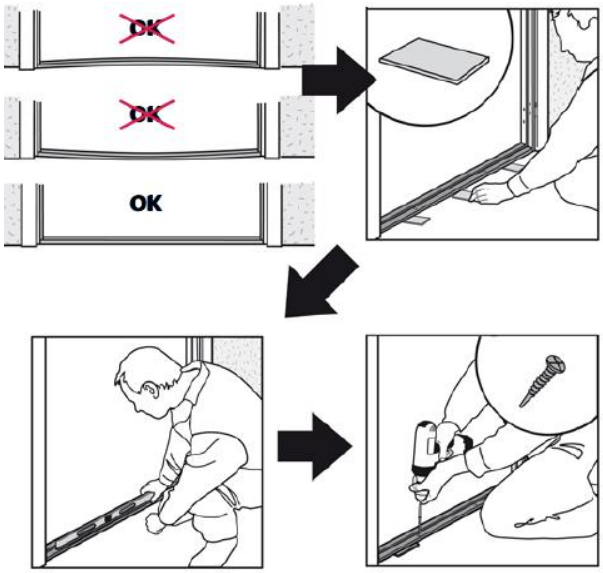

16) Fill the gap between the frame and the wall according to **Table 1** and the descriptions in Figures 6, 7, 8 and 9.

17) Install the countersunk head caps of the fastener holes (unless required otherwise) and if there are cover strips, fasten them as shown in Figure 6.

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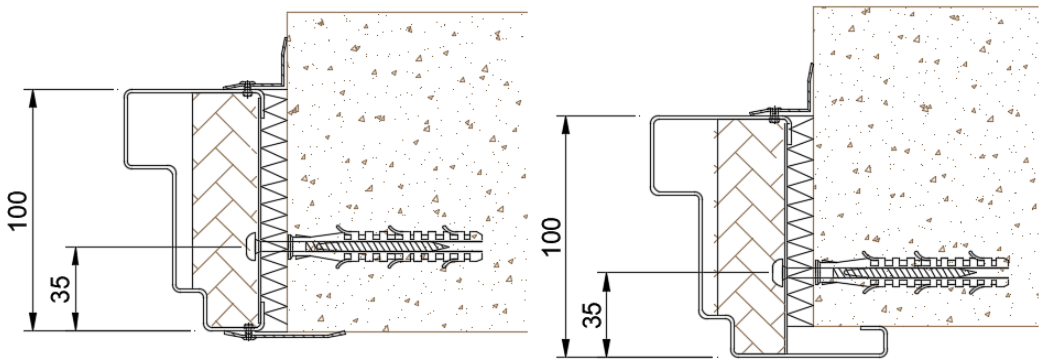

Figure 6 – Installation of the door into the structural opening SMU101/201; SMU102/202

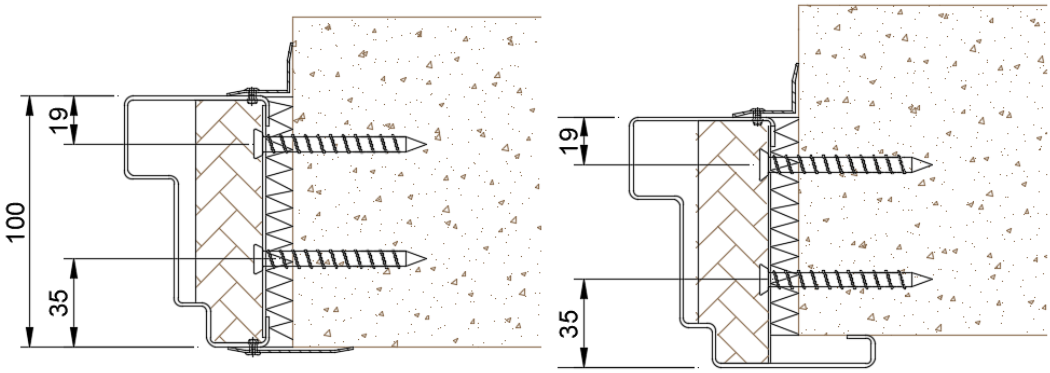

Figure 7 – Installation of the door into the structural opening SMU110/210; SMU106/206; SMU107/207

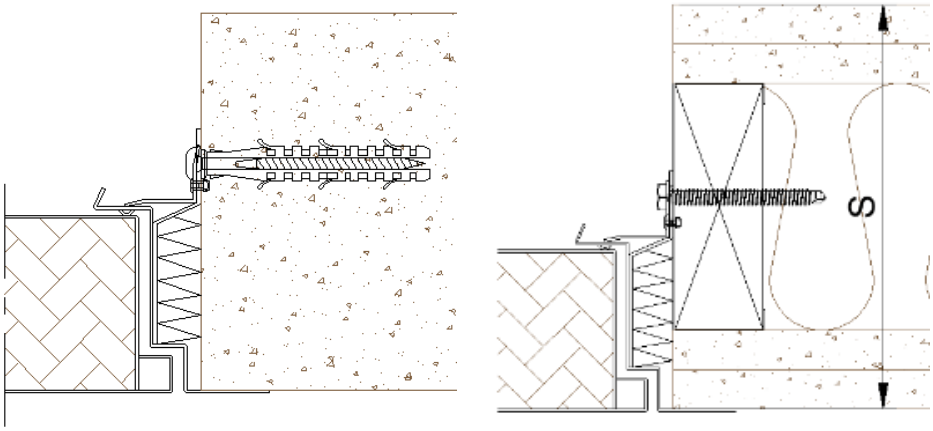

Figure 8 – Installation of the hatch into the structural opening SMU103

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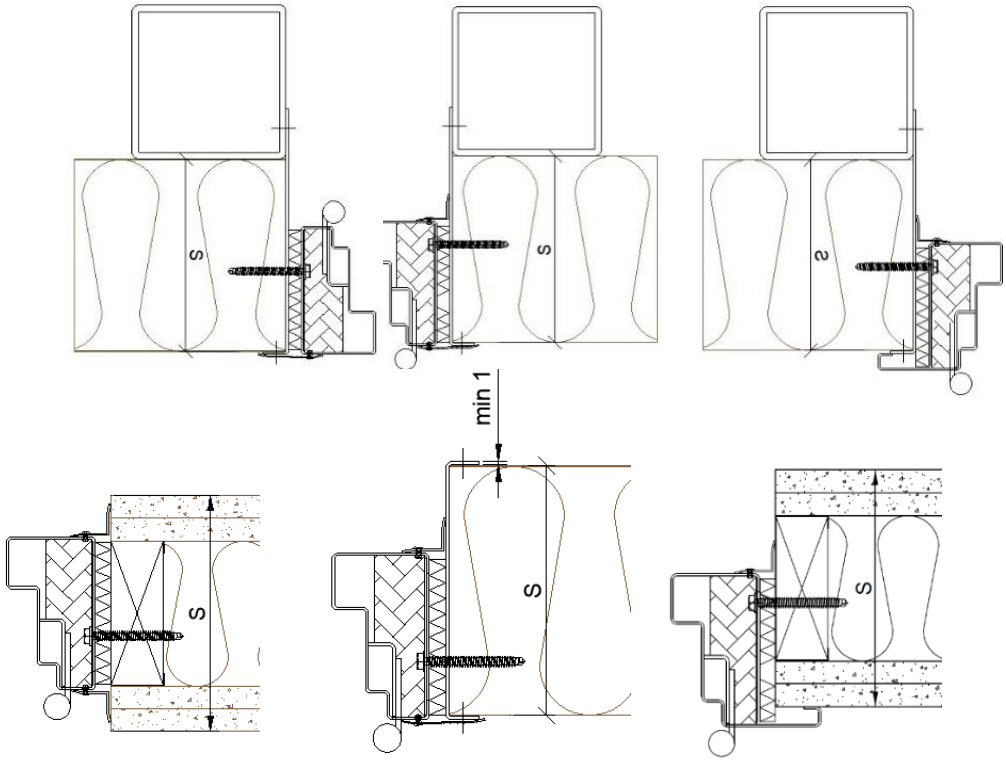

***Figure 9** – Installation of the door into a lightweight wall*

NB! Pay attention to the installation depth of the opening filler! If necessary, install a bar to prevent the opening filler from opening too wide.

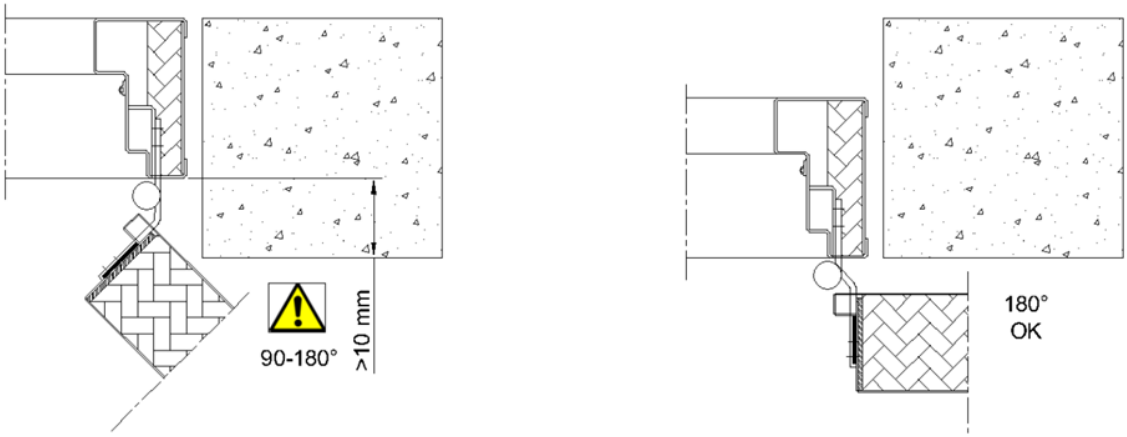

Figure 10– Installation depth

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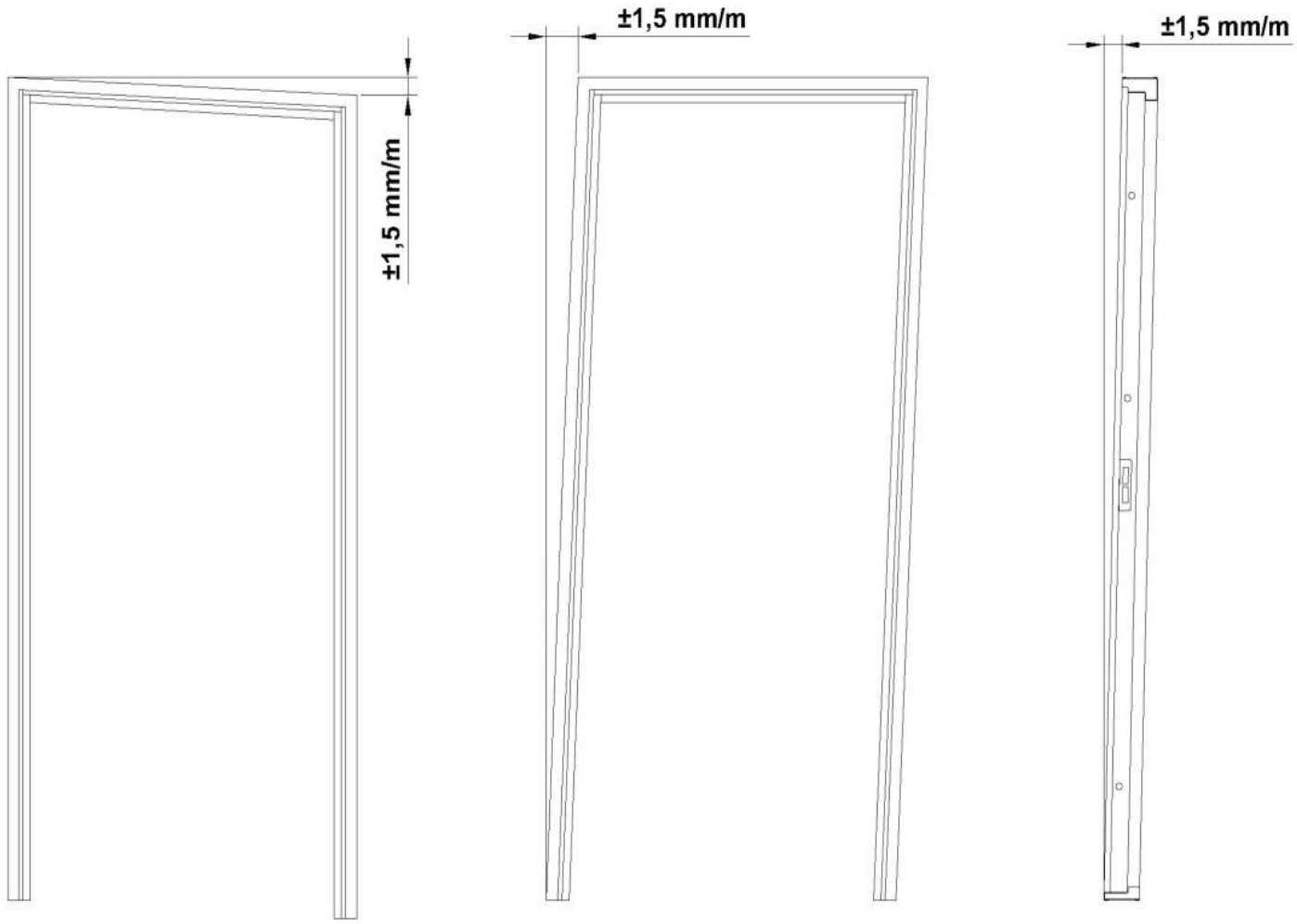

Figure 11 – Door frame installation tolerances

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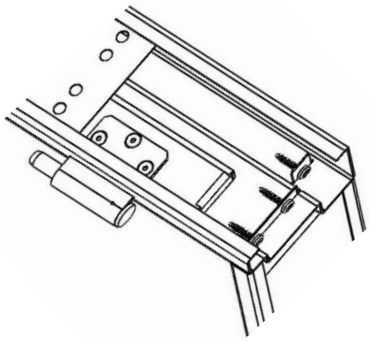
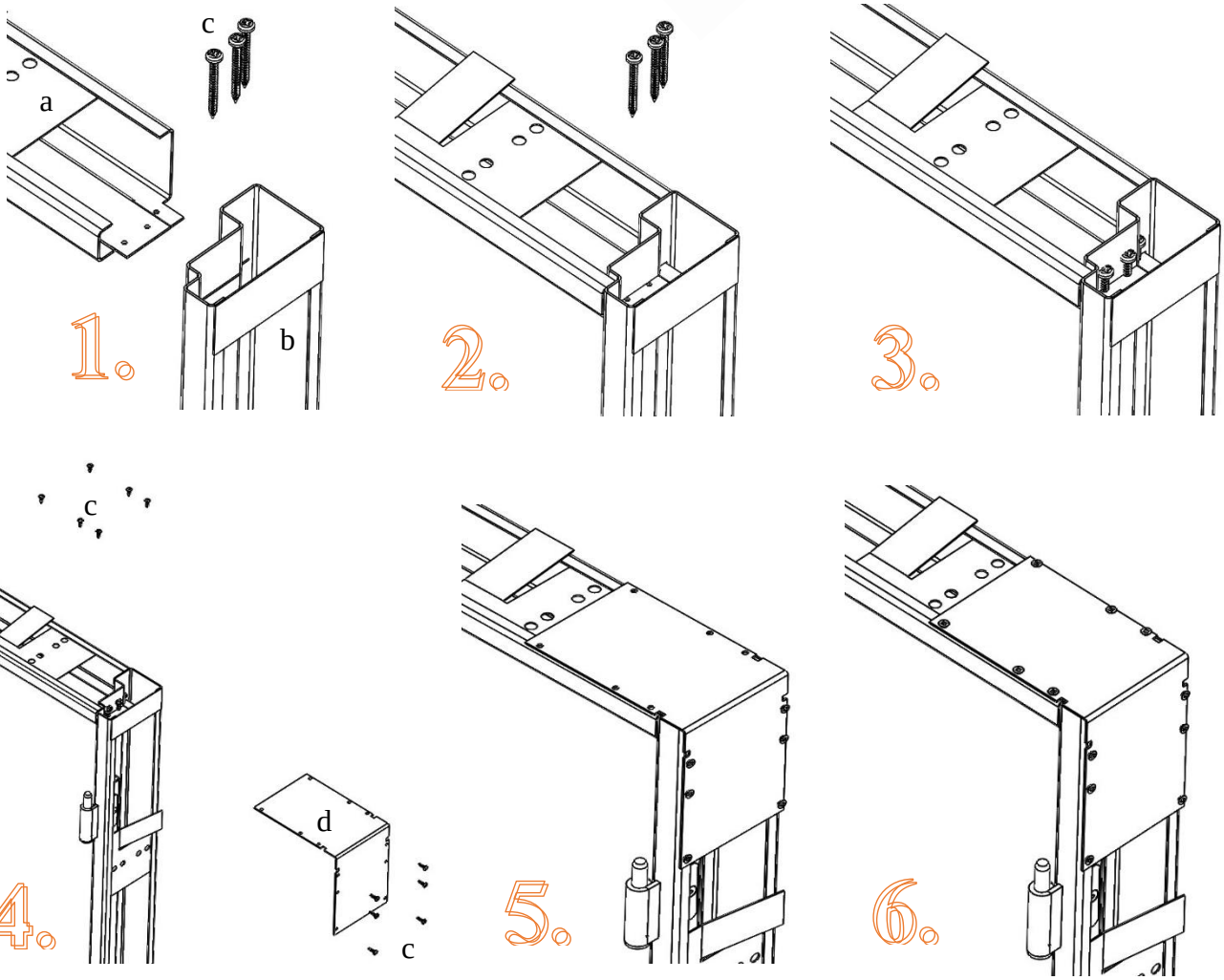
APPENDIX 1

Lego door frame parts

1) The parts of the “lego” door frame are connected using 4,2x25 mm drilling screws (torx head).

a) Top frame
b) Side frame
c) Drilling screw 4,2x25mm
d) Lego frame’s reinforcing bracket

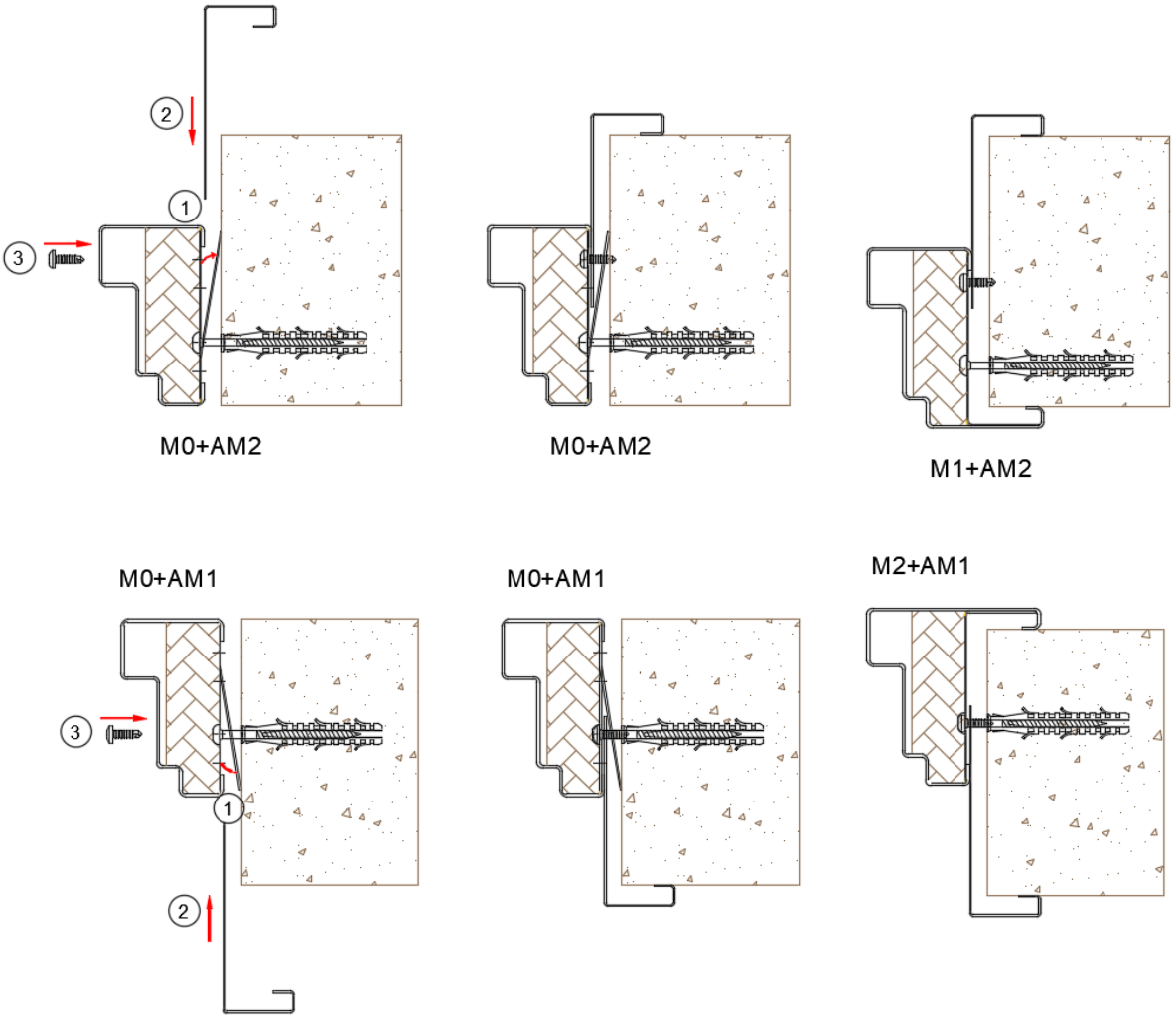




APPENDIX 2

Sub-frame installation instructions.

- Bend the frame's fastening elements away from the frame 5-10mm
- Install the sub-frame between the frame and bent frame's fastening element
- Fasten with a self-tapping screw



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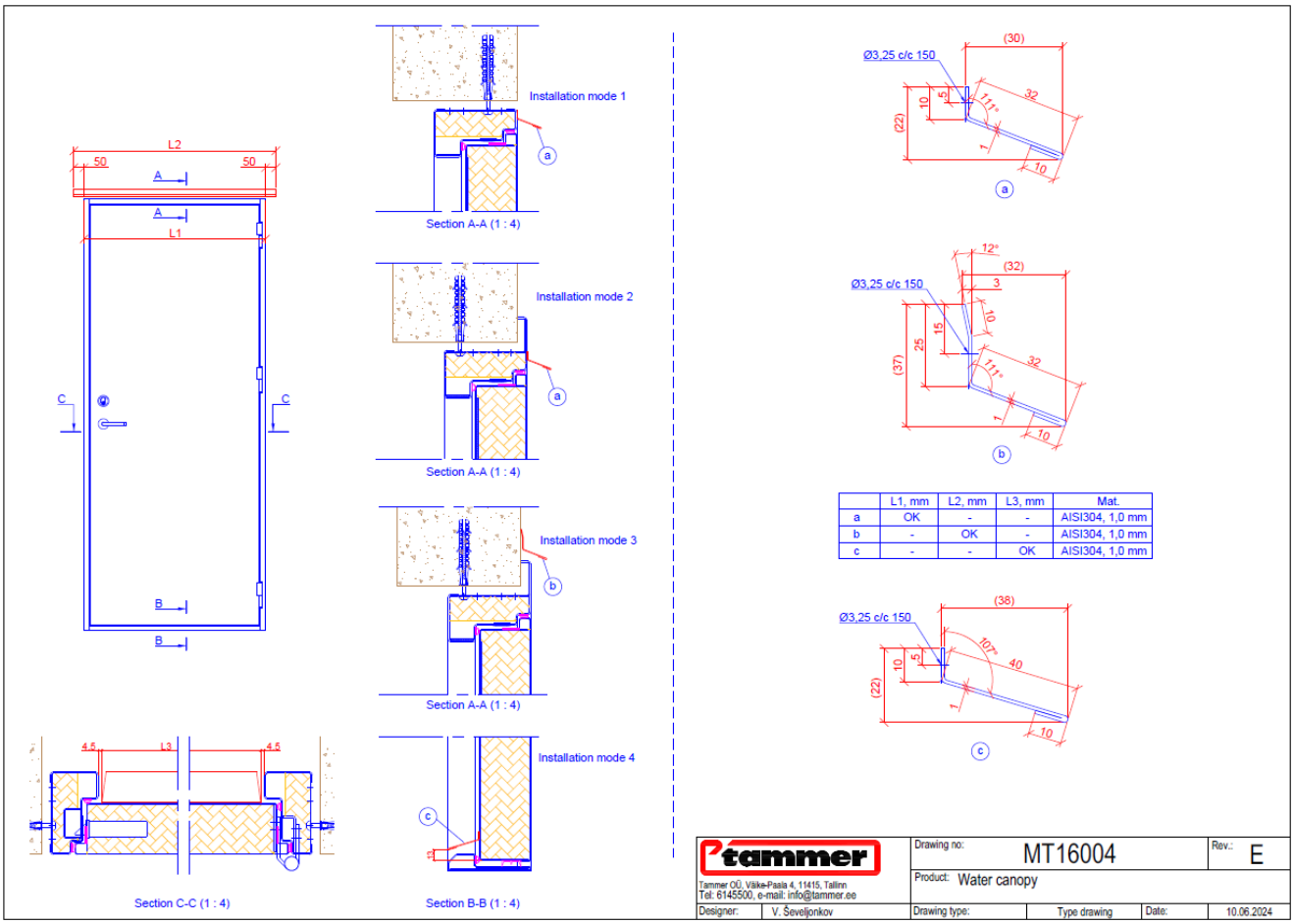
APPENDIX 3

Water drip bar installation instructions.

Choose an appropriate method for installing the water drip bar (1-*4*).

When mounting the water drip bar, fasteners must be chosen according to the wall structure. Ø4.2 mm self-drilling screws or rustproof Ø3,2x10 mm rivets should preferably be used.

After installation, the



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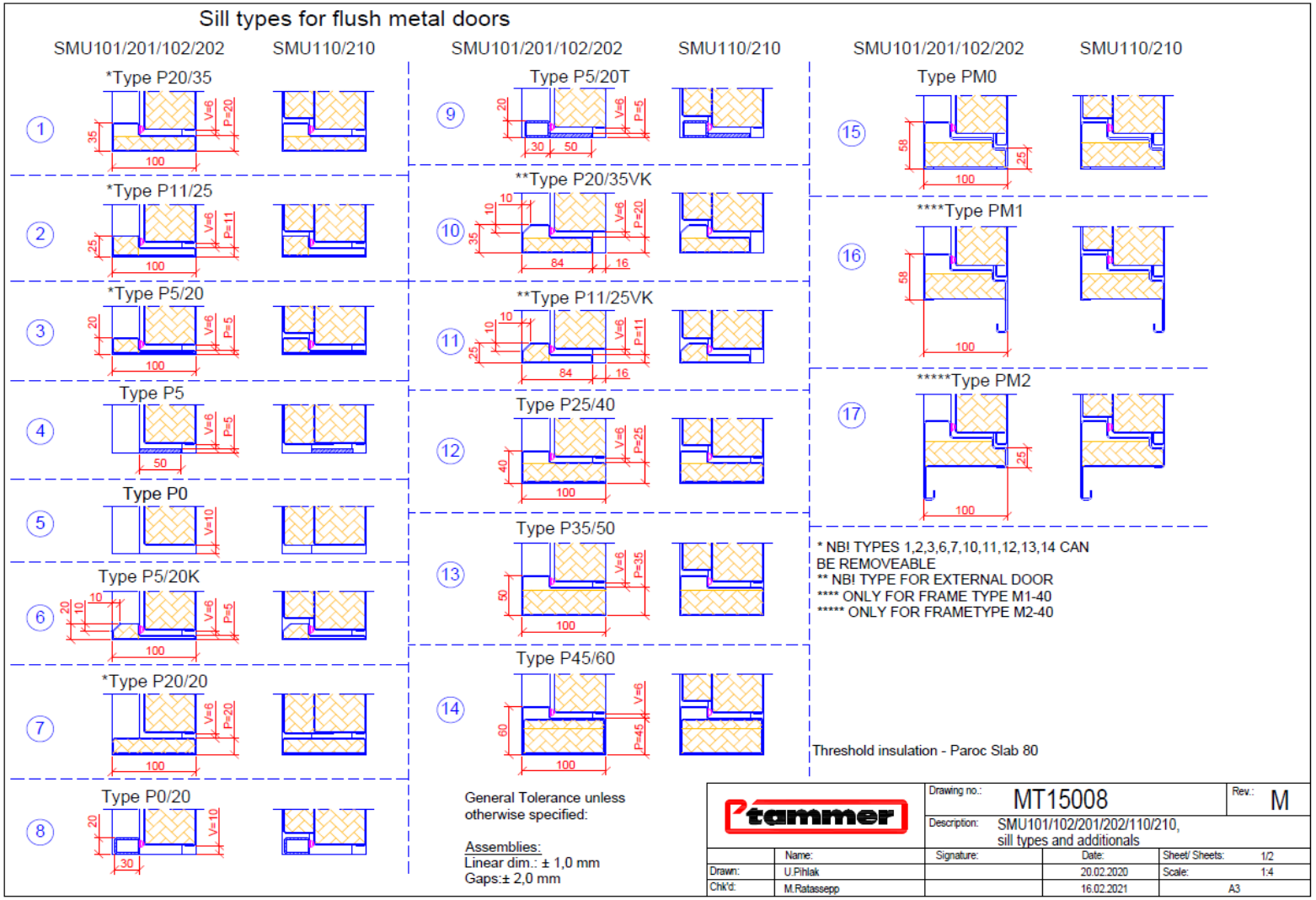
APPENDIX 4



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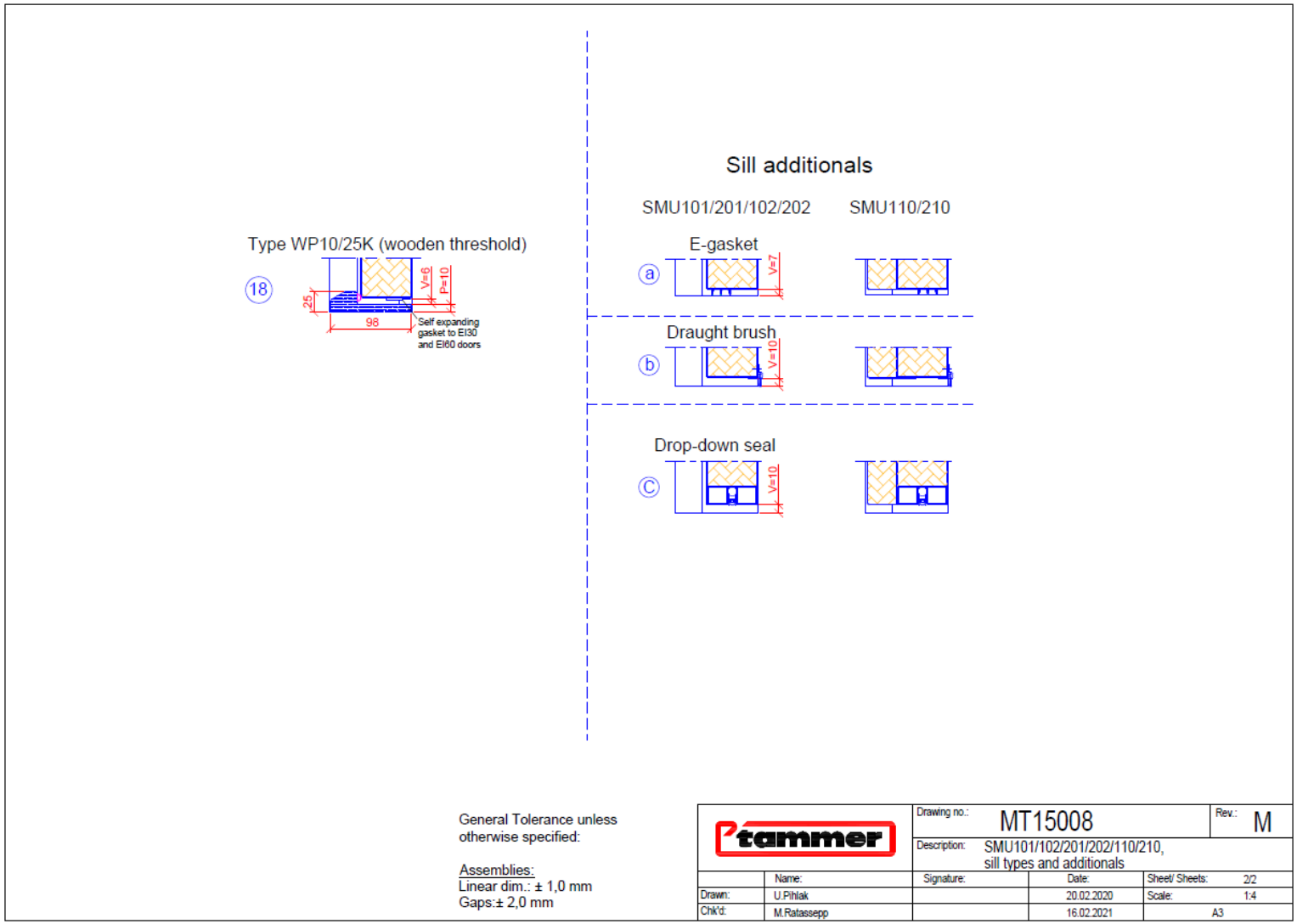

General Tolerance unless otherwise specified:

Assemblies:
Linear dim.: ± 1,0 mm
Gaps:± 2,0 mm

tammer		Drawing no.: MT15008		Rev.: M	
		Description: SMU101/102/201/202/110/210, sill types and additionals			
	Name:	Signature:	Date:	Sheet/ Sheets:	2/2
Drawn:	U.Pihlak		20.02.2020	Scale:	1:4
Chk'd:	M.Ratassepp		16.02.2021	A3	

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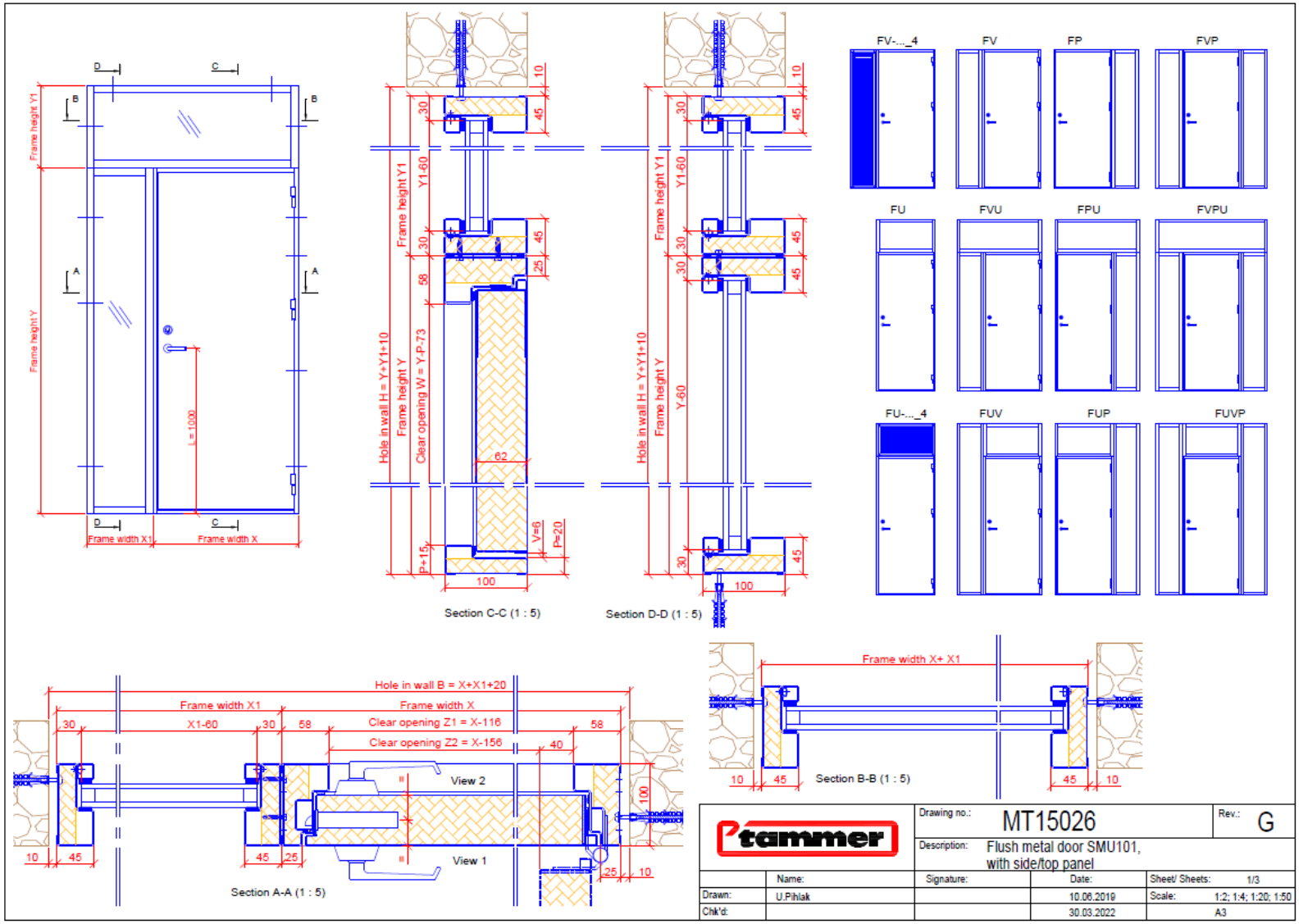
APPENDIX 5



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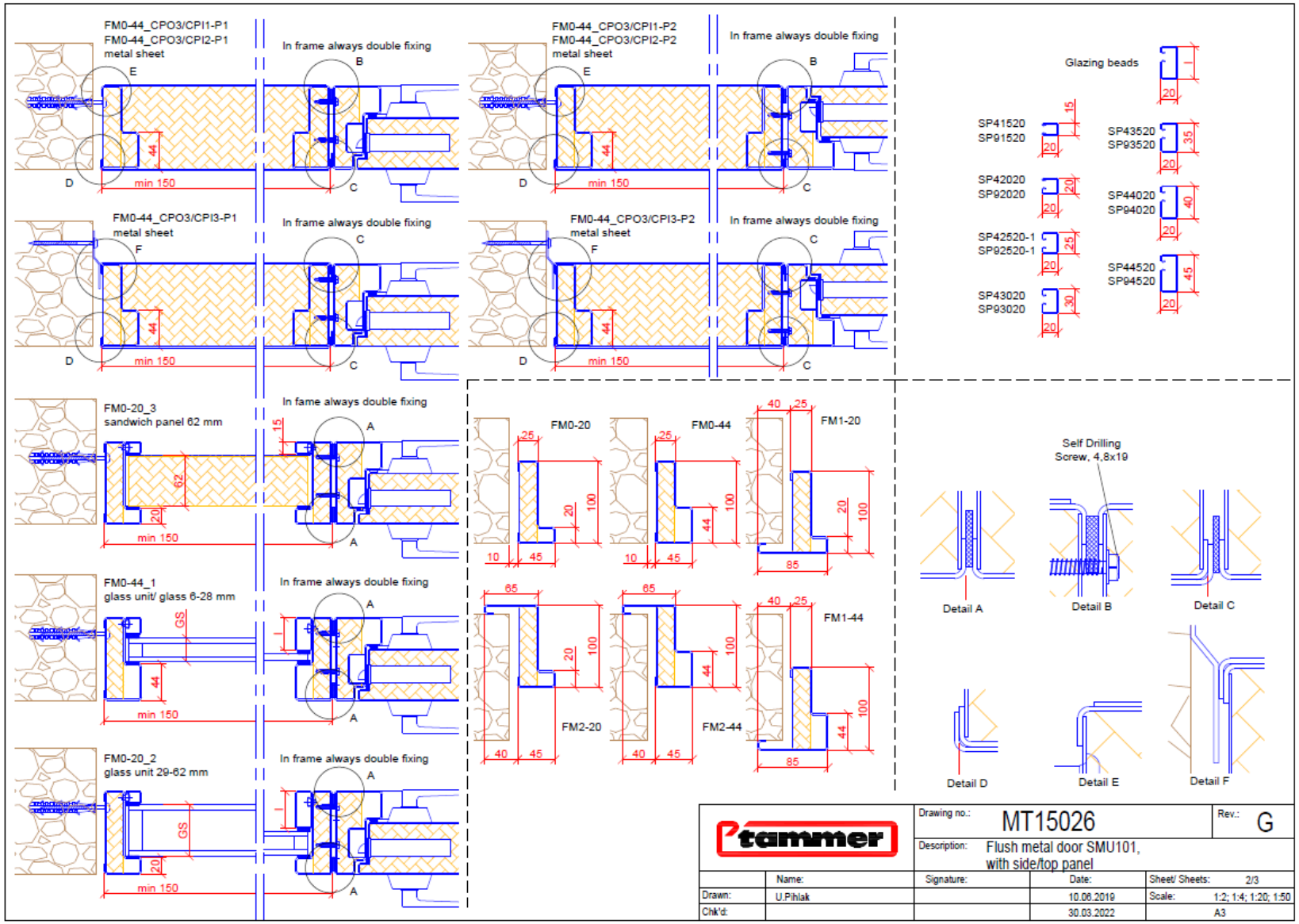

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Drawn:	U.Pihlak		10.06.2019	Scale: 1:2; 1:4; 1:20; 1:50
Chk'd:			30.03.2022	A3

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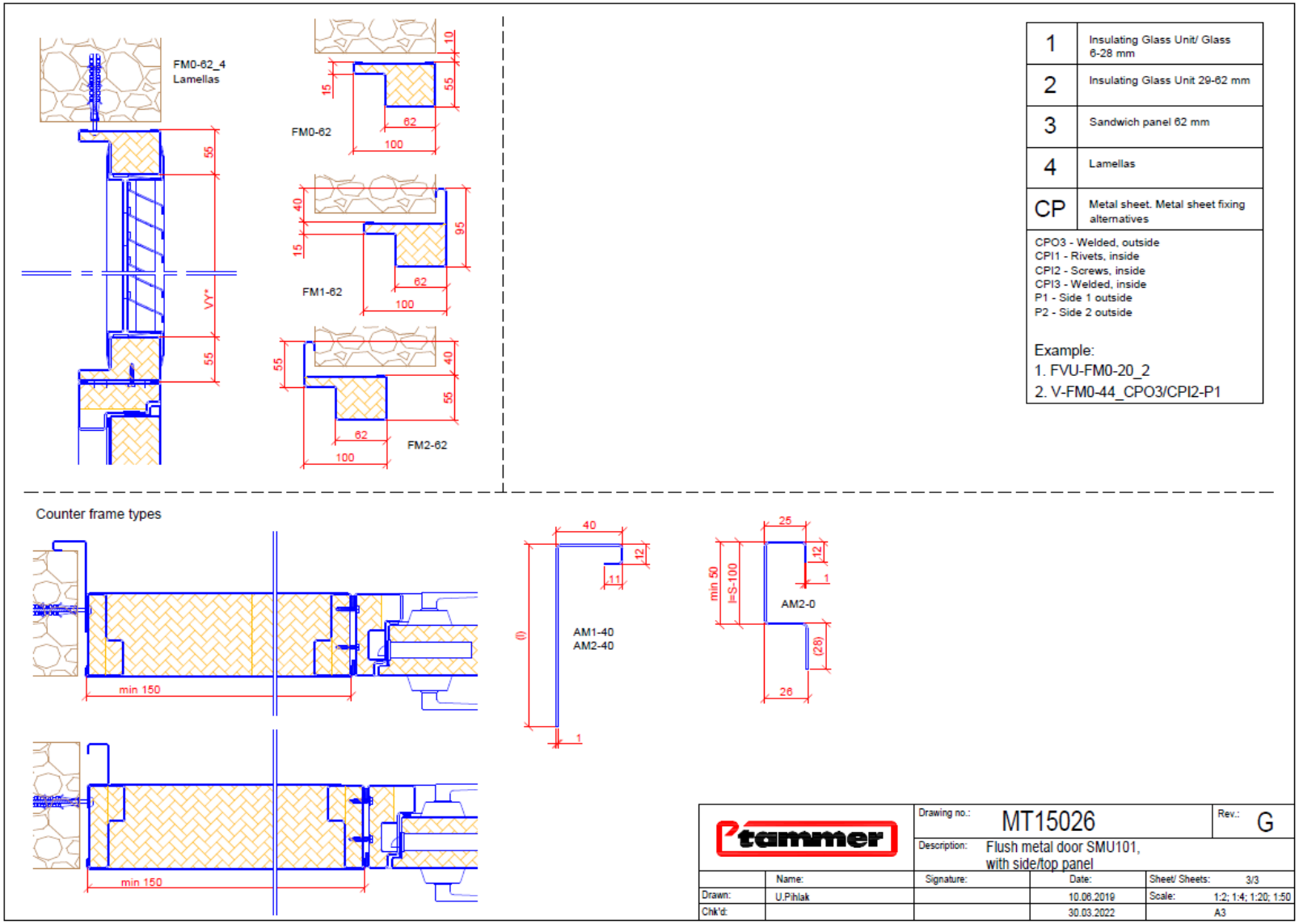

1	Insulating Glass Unit/ Glass 6-28 mm
2	Insulating Glass Unit 29-62 mm
3	Sandwich panel 62 mm
4	Lamellas
CP	Metal sheet. Metal sheet fixing alternatives

CPO3 - Welded, outside
CPI1 - Rivets, inside
CPI2 - Screws, inside
CPI3 - Welded, inside
P1 - Side 1 outside
P2 - Side 2 outside

Example:
1. FVU-FM0-20_2
2. V-FM0-44_CPO3/CPI2-P1

Drawing no.: MT15026				Rev.: G
Description: Flush metal door SMU101, with side/top panel				
	Name:	Signature:	Date:	Sheet/ Sheets: 3/3
Drawn:	U.Pihlak		10.06.2019	Scale: 1:2; 1:4; 1:20; 1:50
Chk'd:			30.03.2022	A3

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