

Klaasprofiili paigaldusjuhend ET

Installation guide EN

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ROOSTEVABA TULEKINDLA (EI30, EI60) MITTEKANDVA VAHESEINA, FIX-AKNA KLAASIMINE/ GLAZING OF STAINLESS STEEL FIRE-RATED (EI30, EI60) NON-LOAD-BEARING PARTITION AND FIXED WINDOW	10
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Paigaldusjuhend/ Installation guide

Tegevuskirjeldus/ Description of work

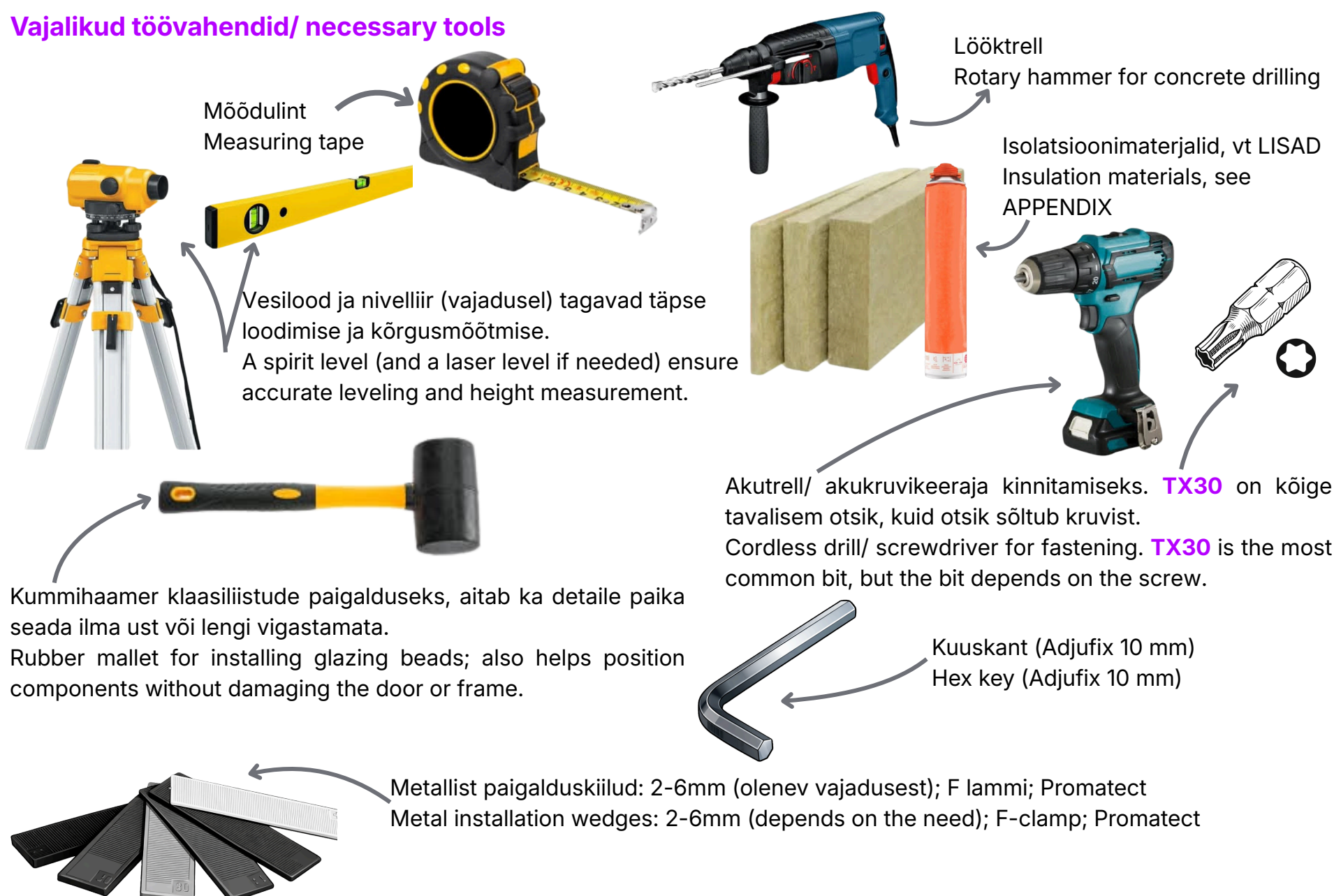
Eesti:

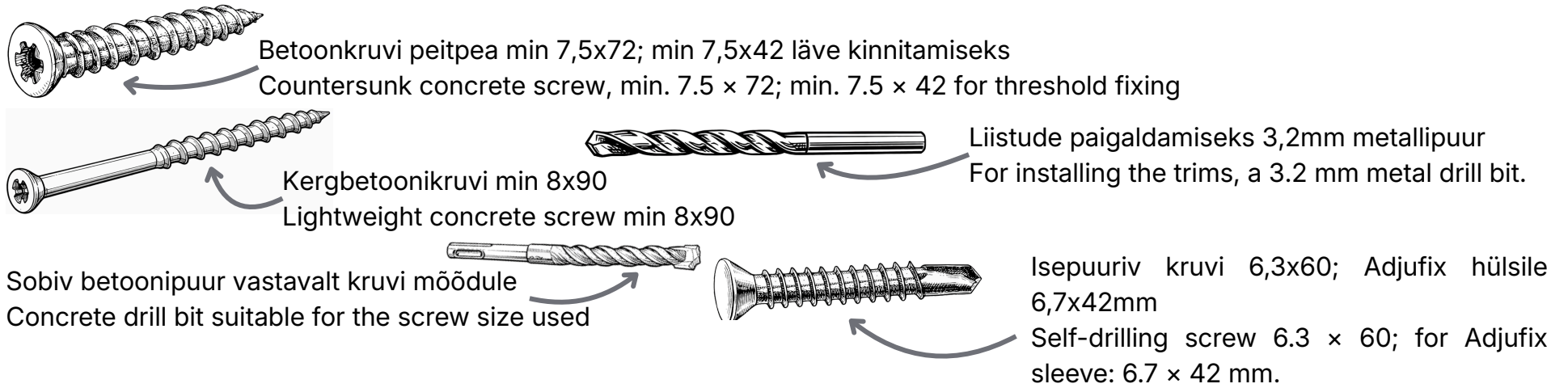
- Tulekindlat uksekomplekti või mittekandvat vaheseina võib paigaldada vastavalt paigaldustingimustele, mis määratletud tabelis PJ-5 LISA1.
- Mittetulekindlate tavatoodete puhul ei tulene seinatüübile tulepüsivusnõudest eraldi piiranguid, kui projekt, toote omadused või muud erinõuded ei sätesta teisiti. Ehitusava ja aluskonstruktsioon peavad igal juhul olema piisava tugevuse, jäikuse ja mõõdutäpsusega ning sobima konkreetse avatäite kinnitamiseks.
- Sissemurdmisklassiga RC2-RC4 tavatoodete paigaldusel jälgige lisaks PJ-5 LISA2
- Konstruktsioon tuleb kinnitada tihedalt ja tugevalt valmis ehitusavasse ning paigaldada vastavalt etteantud valmis põranda kõrgusele. Valmis põranda kõrgus, sh kõikide põrandakattematerjalide ja aluskihtide paksused, peab olema määratud enne avatäite paigaldust projekteerija, tellija või ehitaja poolt. Kui avatäite paigaldatakse enne lõpliku põrandakatte paigaldamist, tuleb paigaldajale esitada lõpliku valmis põranda kõrgus. Hilisemast põrandakatte kõrguse muutumisest või täpsustamata jätmisest tulenevad avatäite reguleerimise, tõstmise või ümberehitamise tööd ei kuulu tavapärase paigalduse ega garantii hulka.

English:

- Fire-rated door sets or non-load-bearing partitions may be installed according to the installation conditions specified in table PJ-5 APPENDIX 1.
- For non-fire-rated standard products, there are no separate restrictions regarding wall type arising from fire resistance requirements, unless otherwise specified by the project, product properties, or other special requirements. In all cases, the structural opening and supporting structure must have sufficient strength, rigidity, and dimensional accuracy and must be suitable for fixing the specific door or partition system.
- For installation of RC2-RC4 burglary-resistant standard products, also follow PJ-5 APPENDIX 2.
- The structure must be fixed tightly and securely into the finished structural opening and installed according to the specified finished floor level. The finished floor height, including all floor covering materials and subfloor layers, must be defined before installation by the designer, client, or builder. If the door or partition is installed before the final floor covering is completed, the installer must be provided with the final finished floor level. Any later adjustments, lifting, or reconstruction caused by changes to or lack of definition of the finished floor level are not included in standard installation or warranty coverage.

Vajalikud töövahendid/ necessary tools





ETTEVALMISTUS/ PREPARATION

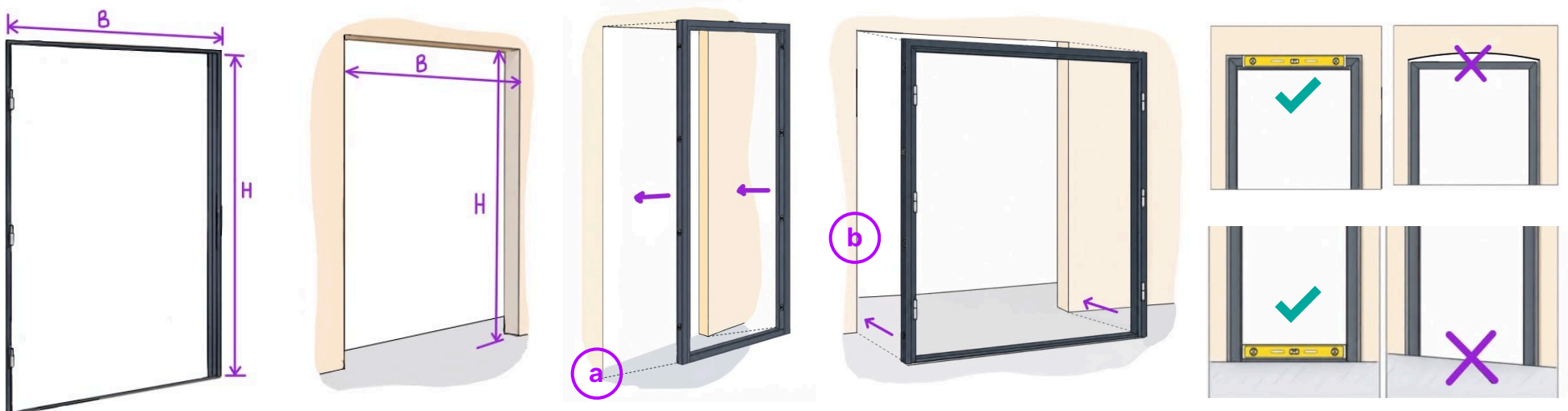


- Veendu ehitusava ja avatäie mõõtude sobivuses. NB! Maksimaalne lubatud paigaldusvahe sõltub toote tüübist, tule-, suitsu-, heli-, õhu-, vee- või turvaklassi nõuetest ning kasutatavast tihenduslahendusest. Enne paigaldust tuleb kontrollida konkreetsele tootele kehtivaid paigaldustingimusi vastavast lisast, projektist või tootja juhiseist.
Ensure that the dimensions of the structural opening and the door assembly are compatible. Note! The maximum permitted installation gap depends on the product type, fire, smoke, acoustic, air, water, or security class requirements, and the sealing solution used. Before installation, the applicable installation conditions for the specific product must be checked from the relevant appendix, project documentation, or manufacturer's instructions.

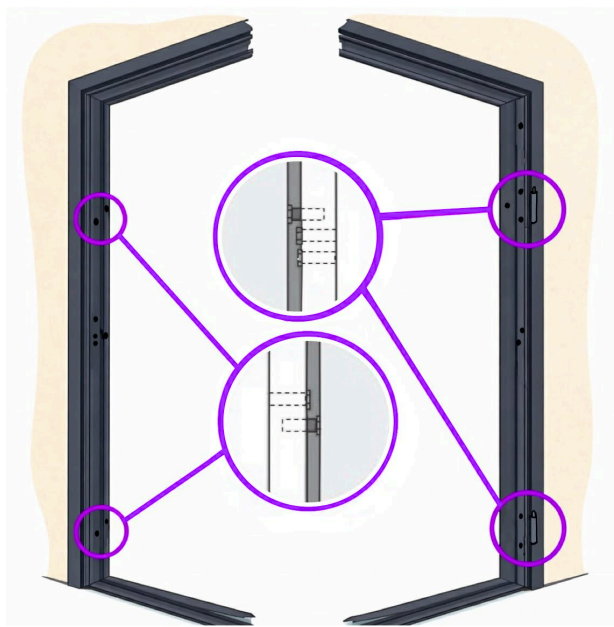
- Valmista ette töökoht, kaitse konstruktsiooni transportimisel ja paigaldamisel kahjustuste eest. Prepare the workplace and protect the structure from damage during transport and installation.

PAIGALDUS (ÜHE- JA KAHELEHELINE UKS) / INSTALLATION (SINGLE AND DOUBLE DOOR)

- a) Üheleheline uks/ single door **NB!** Terasprofiiluksed on rasked ja ust tuleks paigaldada vähemalt kahekesi.
b) kaheleheline uks/ double door **Note!** Steel profile doors are heavy and should be installed by at least two people.



- Veendu ehitusava ja avatäie mõõtude sobivuses.
Ensure that the dimensions of the structural opening and the door assembly are compatible.
- Tõsta leng püsti ehitusavasse vahetult valmis loodis põrandale ning kontrolli loodiga, et see on õigesti paigas nii vertikaalselt, kui horisontaalselt.
Lift the frame upright into the structural opening, directly onto the finished level floor and check with a spirit level that it is correctly aligned both vertically and horizontally.



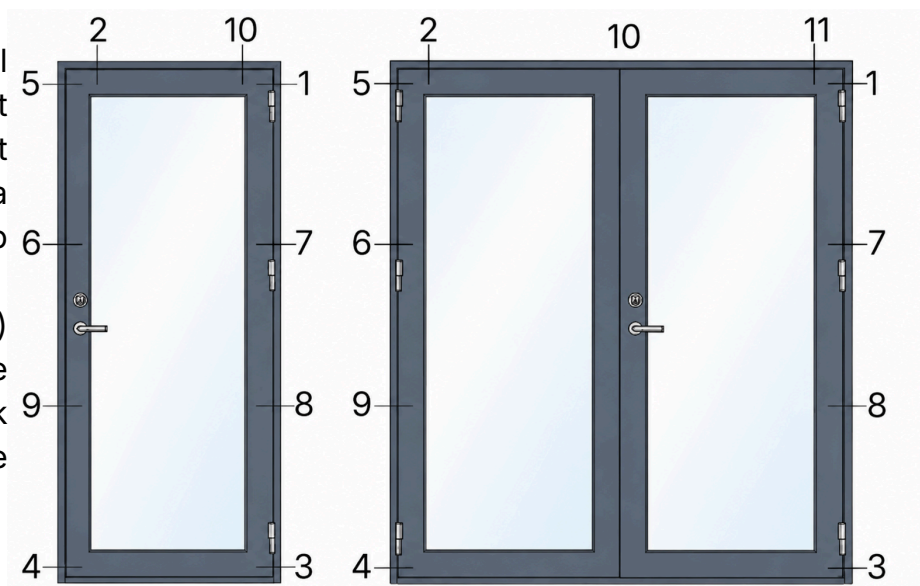
⚙ Paigaldushülsside kasutamisel tuleb betoonseina ette puurida Ø 6 mm ava.
When using installation sleeves, a Ø 6 mm pilot hole must be pre-drilled in the concrete wall.

⚙ Paigaldushülssiga avatäite kinnituste puhul reguleeri asendit kuuskandiga (adjufix 10mm) lengihülssse seina poole keerates. Reguleeri paarikaupa luku- ja hinge küljel, kahelehelistel ustel ka lengi ülaosas.
For fixings with frame sleeves, adjust the position by turning the frame sleeves toward the wall using a hex key (Adjufix 10 mm). Adjust the frame sleeves in pairs on the lock and hinge side, and on double-leaf doors also at the top of the frame.

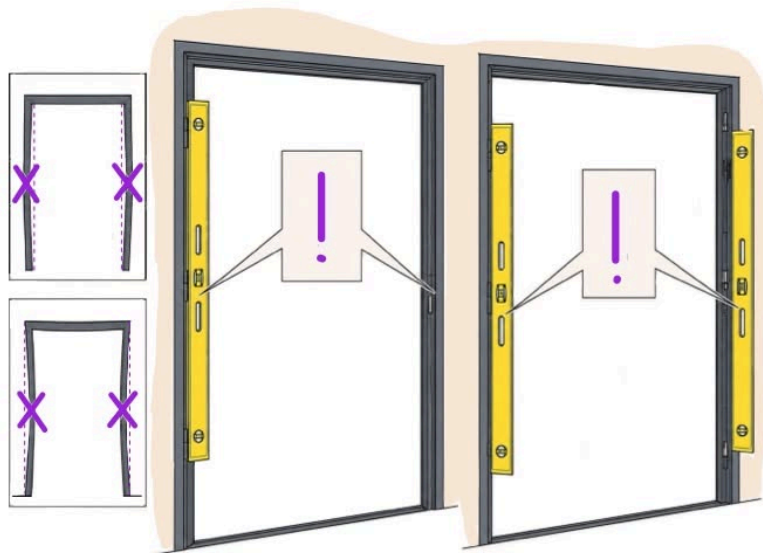
3

⚙ Kinnita leng esmastest kinnituspunktidest vastavalt joonisel näidatud järjekorrale 1, 2, 3. Pärast kinnituste 1 ja 2 paigaldamist kontrolli lengi horisontaalsust loodiga ja vajadusel reguleeri. Pärast kinnituse 3 paigaldamist kontrolli lengi vertikaalsust loodiga ja vajadusel reguleeri. NB! Kinnitusavade kaugus seina servast peab olema vähemalt 50 mm

Secure the frame at the initial fixing points (in order 1, 2, 3) according to the drawing. After fixing fasteners 1 and 2, check the frame level and adjust if necessary. After fixing fastener 3, check the frame plumb and adjust if necessary. Note: The distance of the fixing holes from the wall edge must be at least 50 mm.



4



⚙ Paigalda ukseleht (-lehed) lengi ning sobita ukselehe ja lengi vahed paralleelseteks jälgides ka vertikaalsust.

Install the door leaf/leaves into the frame and align the gaps between the door leaf and frame to be parallel while also checking vertical alignment.

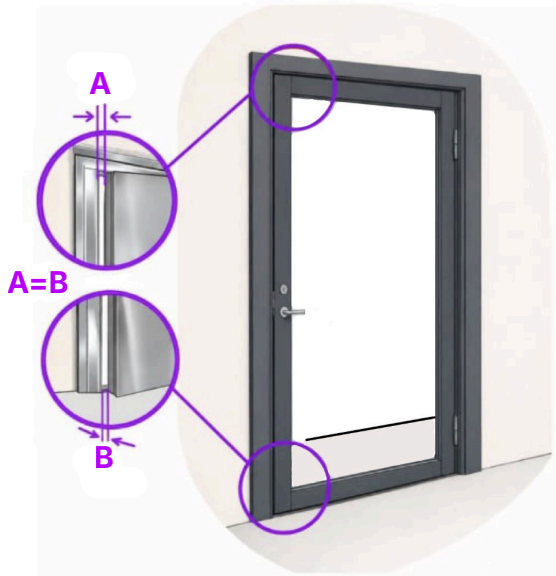
⚙ Kontrolli loodiga lengi paralleelsust.

Check with a spirit level that the frame is correctly aligned.

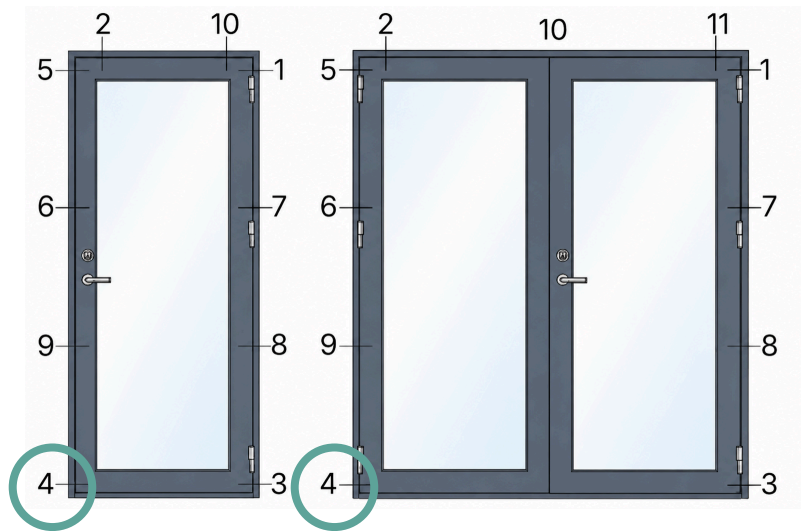
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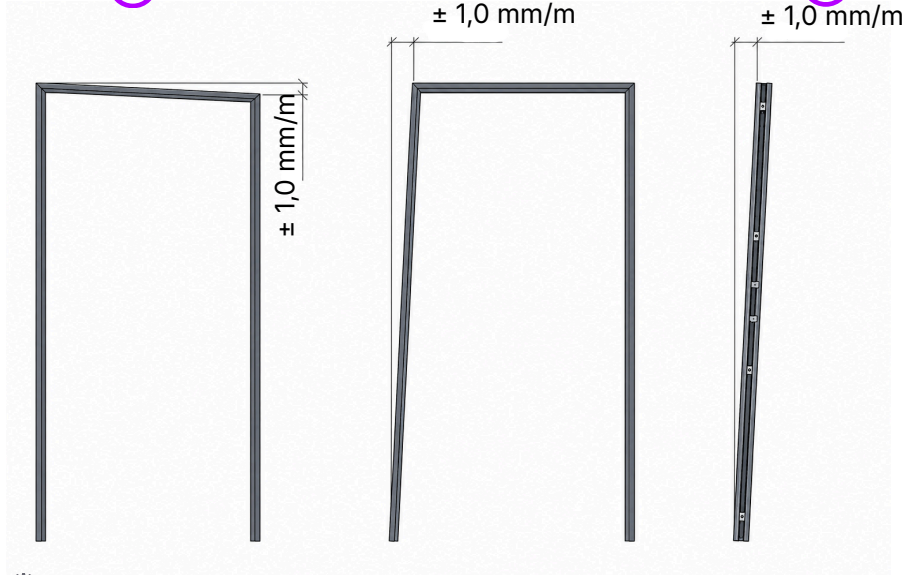


- Kontrolli ukselehe ja lengi vaheliste vahede ühtsust. Vajadusel reguleeri ust.
Check that the gaps between the door leaf and the frame are even. Adjust the door if necessary.



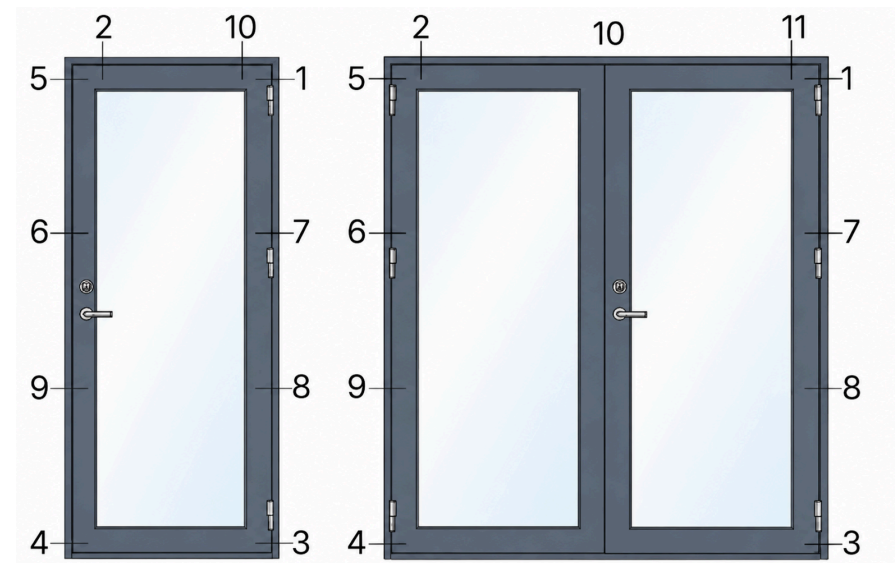
- Kinnita kinnitusvahend nr 4. Selles etapis reguleeri leng ukselehe järgi.
Secure fastener No. 4. At this stage, adjust the frame according to the door leaf.

7



- Kontrolli uste liikumist ja reguleeri vajadusel vastavalt paigaldustolerantsidele.
Check the operation of the doors and adjust if necessary according to the installation tolerances.

8

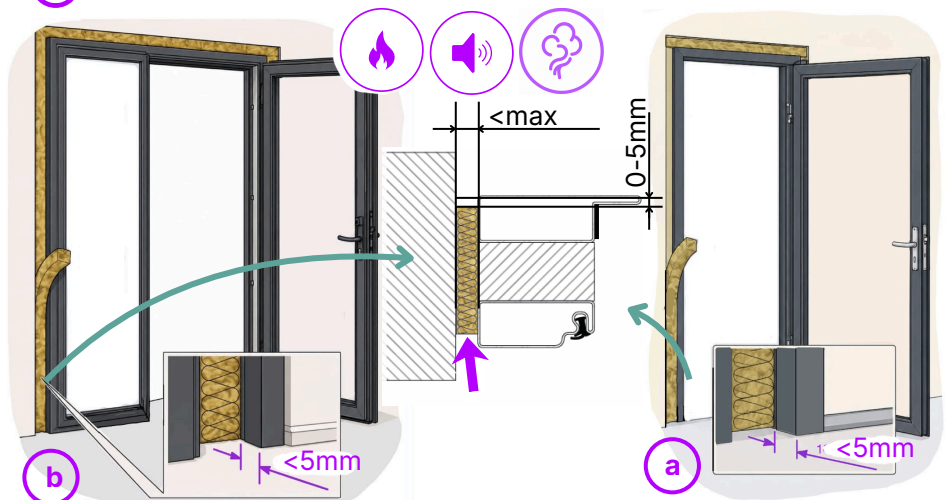


- Kinnita kõik ülejäänud lengi kinnitusvahendid.
Secure all remaining frame fasteners.

9

- Täida lengi ja seina vaheline pilu kivivilla või paigaldusvahuga vastavalt tulepüsivusnõuetele; maksimaalsed paigaldusvahed vt PJ-5 LISA1.
Fill the gap between the frame and the wall with mineral wool or installation foam according to fire resistance requirements; for maximum installation gaps, see PJ-5 Appendix 1.

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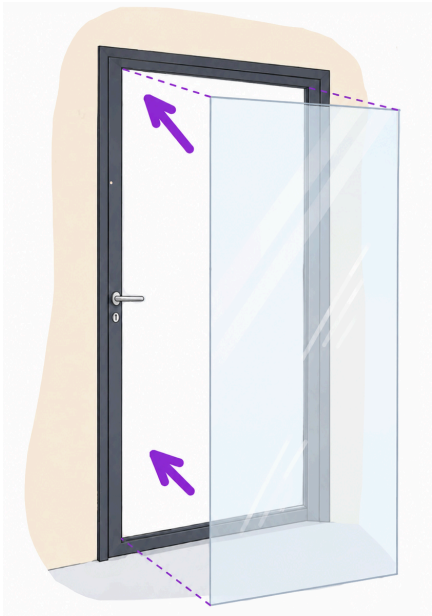
11



- Kontrolli suluste korrektset funktsioneerimist.
Check the proper functioning of the hardware.

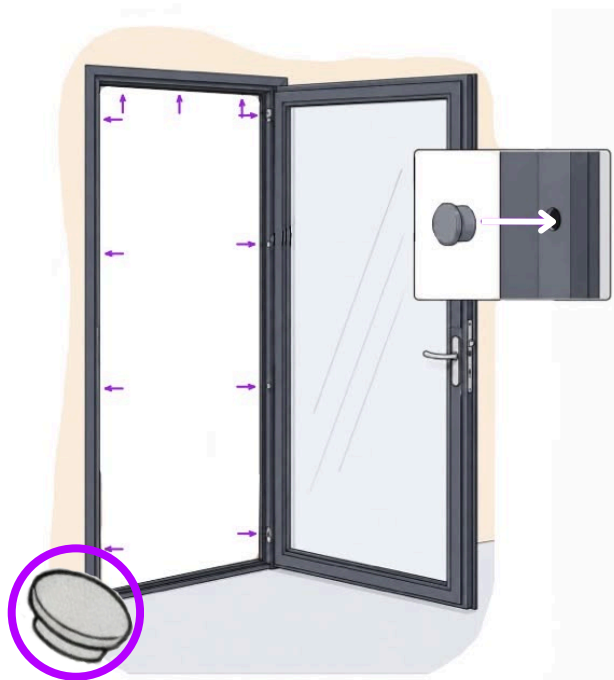
- Kui suluste paigaldus kuulub avatäite paigaldaja töömahtu, tuleb need paigaldada vastavalt suluste tootja juhistele ning veenduda, et need sobivad konkreetse avatäite nõutud omadustega, sh tule-, suitsu-, evakuatsiooni-, turva- või läbipääsunõuetega. Kui sulused, automaatika, läbipääsusüsteem või elektrilised komponendid paigaldatakse teiste osapoolte poolt, vastutab nende paigalduse, seadistuse ja toimivuse kontrolli eest vastava töö teostaja. If hardware installation is included in the scope of the door installer, it must be installed according to the hardware manufacturer's instructions and verified to be suitable for the required properties of the specific door assembly, including fire, smoke, escape, security, or access control requirements. If hardware, automation, access control systems, or electrical components are installed by other parties, the respective contractor is responsible for their installation, adjustment, and functional verification.

12



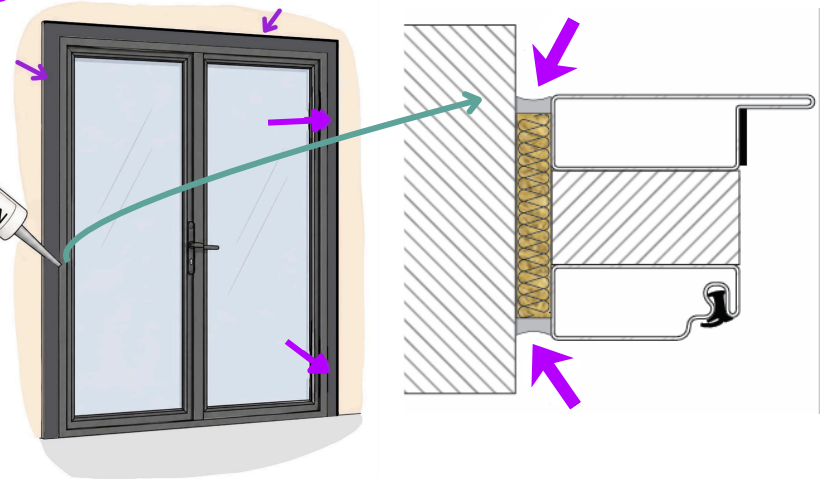
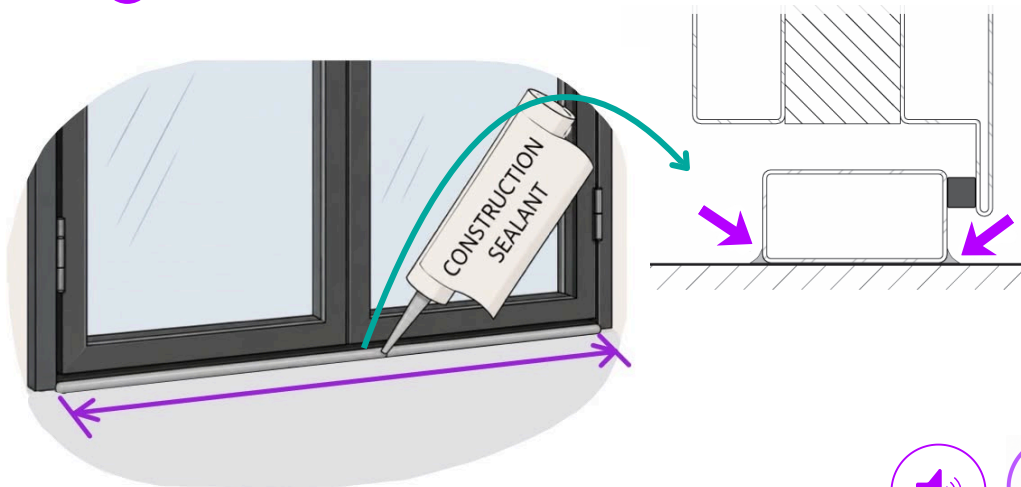
- Paigalda eraldi tarnitud klaasimistihendid ja klaasid (vt. klaaside paigaldus). Klaasi asemel võib olla umbosa, mille paigaldus on analoogne klaasi paigaldusega
Install separately supplied glazing seals and glass (see glass installation). A solid panel may be used instead of glass; its installation is analogous to glass installation.

13



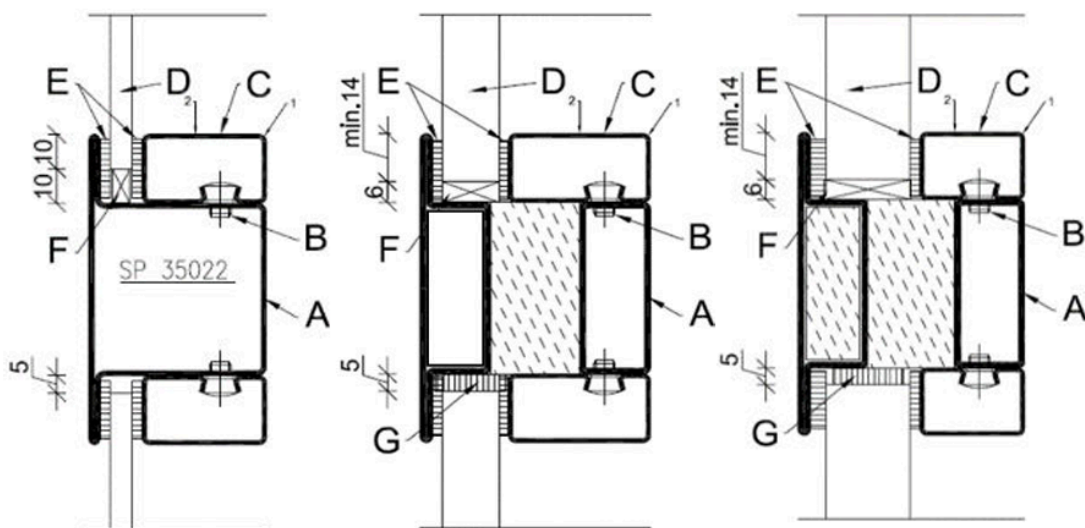
- Kinnita vajadusel piirdeliistud (max 500 mm sammuga) ning paigalda plastikpeitekorgid lengi kinnitusavadele.
Secure trim moldings if needed (max spacing 500 mm) and install plastic cover caps on the frame fixing holes.

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KLAASIDE JA UMBOSA PAIGALDUS/ INSTALLATION OF GLASS AND SOLID PANEL



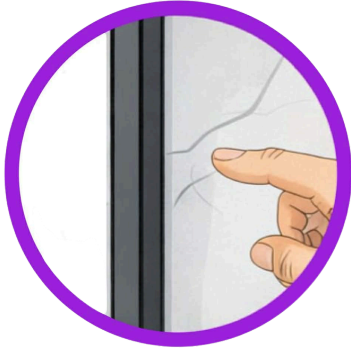
Joonis 1. Klaasi paigaldus E60 / EI30 / EI60 // Figure 1. Glass installation E60 / EI30 / EI60

A	Profiil/ Profile
B	Klaasiliistu kruvi/ Glazing bead screw
C	Klaasiliist/ Glazing bead
D	Klaas/ Glass
E	Ker. tihend (Kerafix 2-5mm) / Ceramic seal (Kerafix 2-5mm)
F	Distantklots/ Spacer block
G	Paisuvtihend**/ Intumescent seal**

- Kui tihendid pole eelpaigaldatud, paigalda tihend (E) klaasiliistule ja profiili kõrvale (tuletõkketooted: Kerafix 2000).
If the seals are not pre-installed, install the seal (E) on the glazing bead and next to the profile (for fire-rated products: Kerafix 2000).

1





- ⚙️ Kontrolli, et klaasid oleksid terved ja ohutud. Kahjustatud või pragunenud klaasi ei tohi paigaldada ega kasutusse anda; klaas tuleb asendada. Väiksemad visuaalsed defektid tuleb fikseerida ja hinnata vastavalt klaasi kvaliteedinõuetele.
Check that the glass is intact and safe. Damaged or cracked glass must not be installed or put into service; it must be replaced. Minor visual defects must be documented and assessed according to glass quality requirements.



- ⚙️ Raami klaasimisava puhastatakse eelnevalt tolmust ja mustusest.
Clean the glazing rebate in the frame from dust and dirt.



- ⚙️ Eemalda klaasiliistud. Jälgi, et klaasiliistud (C) paigaldataks tagasi samasse kohta, kus need olid konstruktsioonil enne klaaside paigaldamist.
Remove the glazing beads. Reinstall them (C) in the same position as before the glass installation.

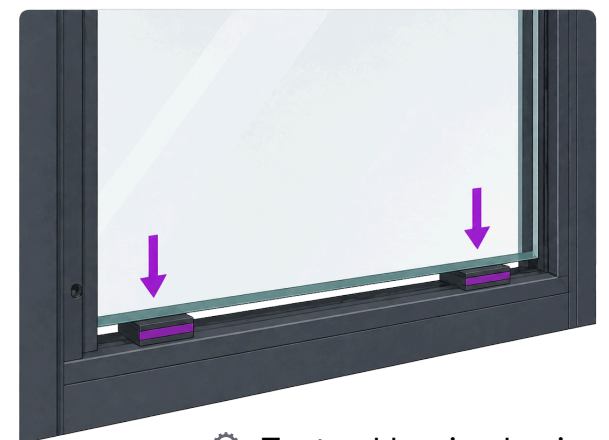
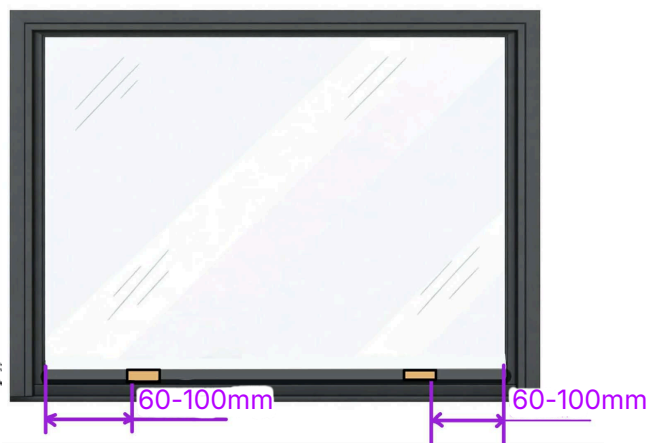
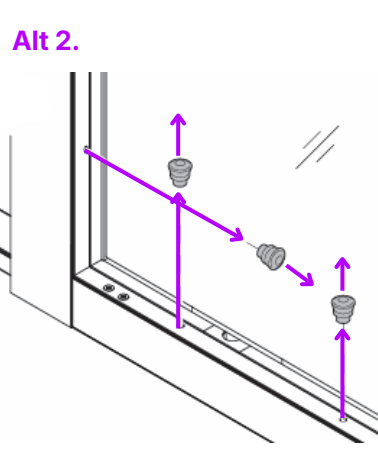
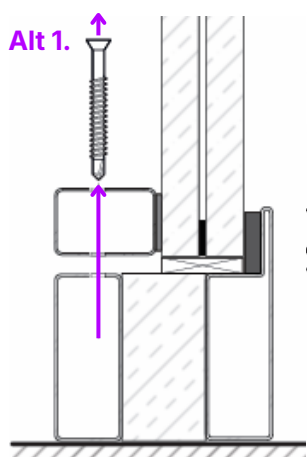
2

NB! Contraflam klaasi klaasimisavasse asetamisel jälgi, et klaasi tempel jääks alla nurka (klaasil ka tavaliselt vastav kleeps).

Note: When placing Contraflam glass into the glazing opening, make sure the glass stamp is in the lower corner (the glass usually also has a matching label/sticker).

3

4

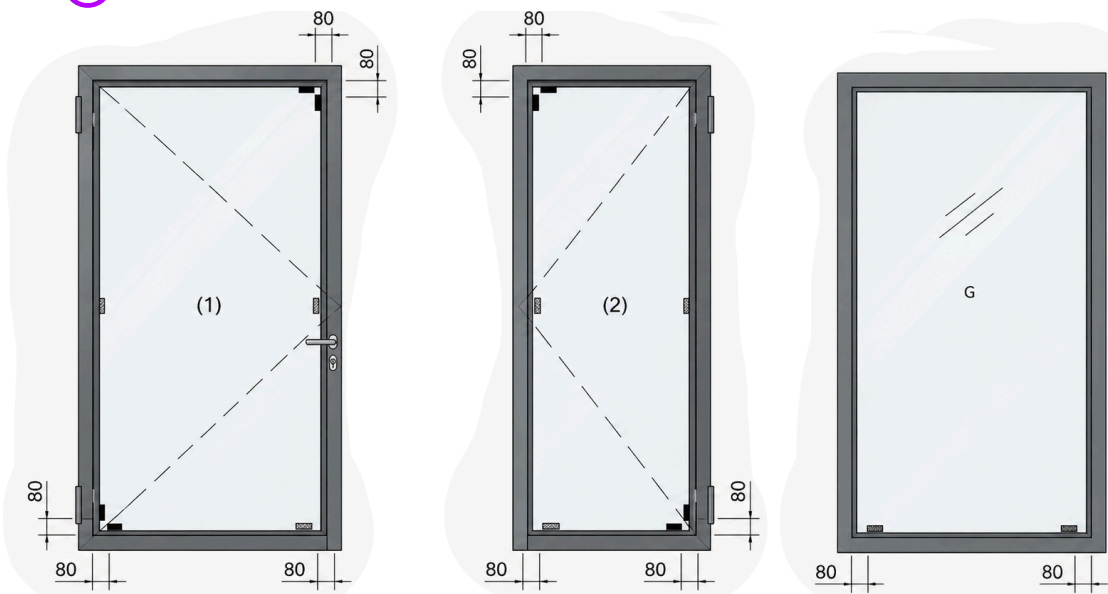


- ⚙️ Eemalda profiililt (A) klaasiliistu kinnituskruvid (B), et klaasi paigaldada avasse.
Remove the glazing bead fixing screws (B) from the profile (A) to install the glass in the opening.

- ⚙️ Klaas tuleb paigaldada kande- ja distantsklotsidele, mis paigutatakse ~60-100 mm kaugusele klaasi nurkadest. Kasuta ainult tootele sobivaid klotse ja kiile; juhuslike materjalide kasutamine ei ole lubatud. Vajadusel kontrolli lahendust tootelehel, klaasimisjooniselt või tootjalt.
The glass must be installed on support and spacer blocks positioned approx. 60-100 mm from the glass corners. Use only blocks and wedges suitable for the product; the use of random materials is not permitted. If necessary, verify the solution from the product datasheet, glazing drawing, or manufacturer.

- ⚙️ Toeta klaasi alumine serv kande-klotsidele.
Support the bottom edge of the glass on support blocks.

5



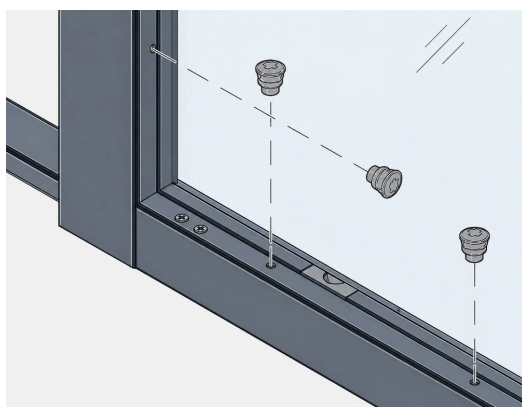
Spacer blocks
Support blocks

- ⚙️ Vajadusel fikseeri klaas diagonaalklotsidega (alusta hinge alumisest nurgast). Turvauste puhul järgi PJ5 LISA2.
If needed, fix the glass with diagonal blocks (start from the bottom hinge corner). For security doors, follow PJ5 Appendix 2.



- Jälgi, et klaasi serva ning profiili vahed oleksid võrdsed.
Ensure that the gaps between the glass edge and the profile are equal.

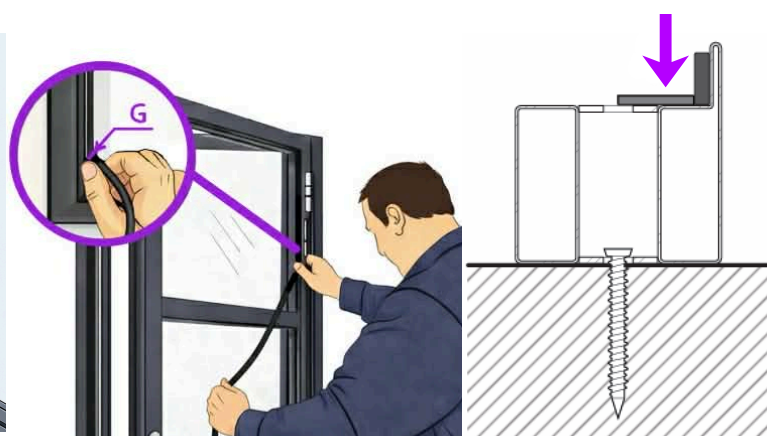
6



Alt.2

- Klaasi paigalduse järel kinnita klaasiliistukruvid.
After installing the glass, tighten the glazing bead screws.

7



- Tuletõkketoodetel (EW, EI2) paigalda tihend (**G) ümber klaasi; klotside alla tihendit ei paigaldada. Tihendi tarnib Tammer.
For fire-rated products (EW, EI2), install seal (**G) around the glass; do not place seal under the blocks. Seal supplied by Tammer.

8

- NB! Ümber klaasi perimeetri tihendit ei ole vaja paigaldada ühekordsel 6mm klaasil (Pyroswiss / FeuerFest). Contraflam klaasidel peab ümber klaasi perimeetri paigaldama Kerafix tihendi (joonis 1 tähistatud tähega G).

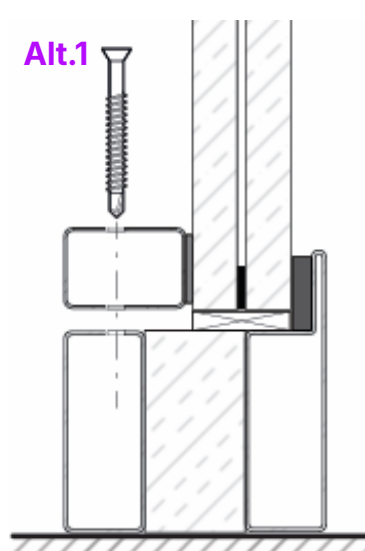
Note: A perimeter seal is not required for single 6 mm glass (Pyroswiss / FeuerFest).

For Contraflam glass, a Kerafix seal must be installed around the entire perimeter of the glass (marked as G in the figure 1).

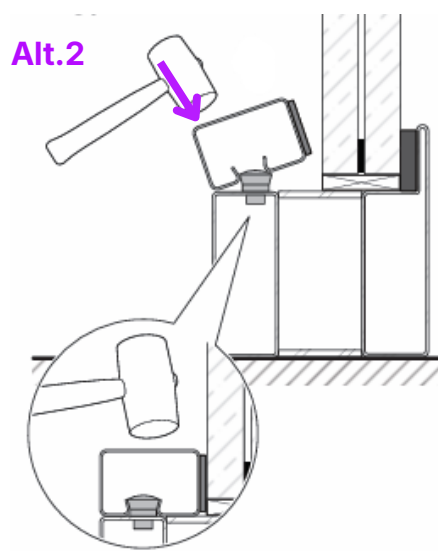


Stalprofiili standardühendus (Alt 2.) / Stalprofil standard connection (Alt 2.):

- Alusta horisontaalsetest liistudest (profiilist profiilini), seejärel paigalda vertikaalsed liistud.
- Kinnita liist, lüües kummihaamri või puitklotsiga liistu välimist nurka.
- Alusta ühest otsast ja liigu järjest teise otsani.
- Veendu, et liist kinnitub kruvidele ja vahe puudub.
- Vajadusel koputa õrnalt kruvi telje suunas, et kinnitus fikseeruks.
- Kontrolli kinnitust ja ühtlasi vahesid.



Alt.1



Alt.2

- Start with the horizontal glazing beads (profile to profile), then install the vertical beads.
- Secure the glazing bead by striking its outer edge with a rubber mallet or a wooden block. Start at one end and work step-by-step to the other end.
- Make sure the bead clips onto the screws and there is no gap.
- If necessary, tap gently toward the screw axis to lock the fixing in place.
- Check proper fixing and even gaps.

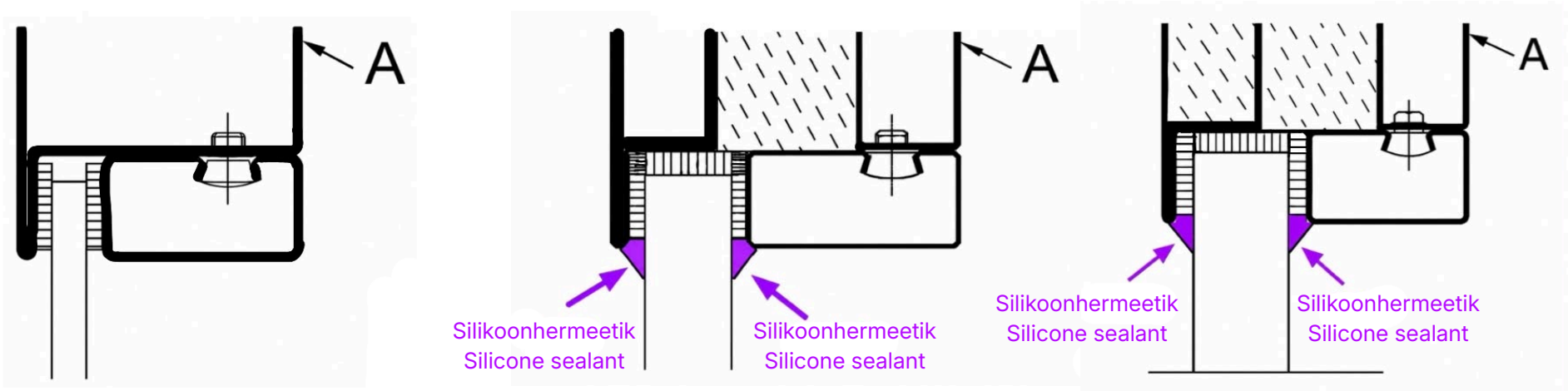
- Paigalda klaasiliistud tagasi eemaldamisele vastupidises järjekorras, järgides kinnitusviisi.

Refit the glazing beads in the reverse sequence of removal, observing the original method of fastening

- RC2–RC4 toodetel kasutatakse toruliiste, kinnitusega (isepuuriv või M5 kruvi). Umbosa paigaldus nagu klaasil.

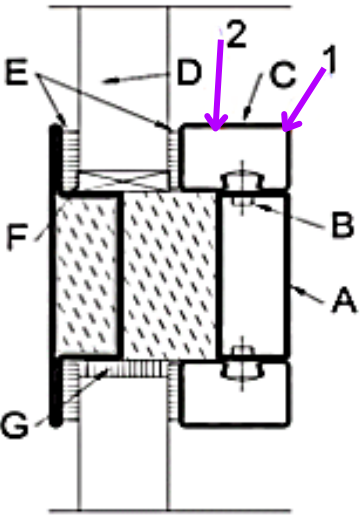
For RC2–RC4 products, use tubular beads fixed with self-drilling or M5 screws. Solid panel installation is the same as for glass.

9



⚙ Vältimustes kata tihendid silikoonhermeetikuga või kasuta spetsiaalseid tihendeid.
In outdoor conditions, seal the gaskets with silicone or use special seals.

UMBOSA PAIGALDUS/ SOLID PANEL INSTALLATION:



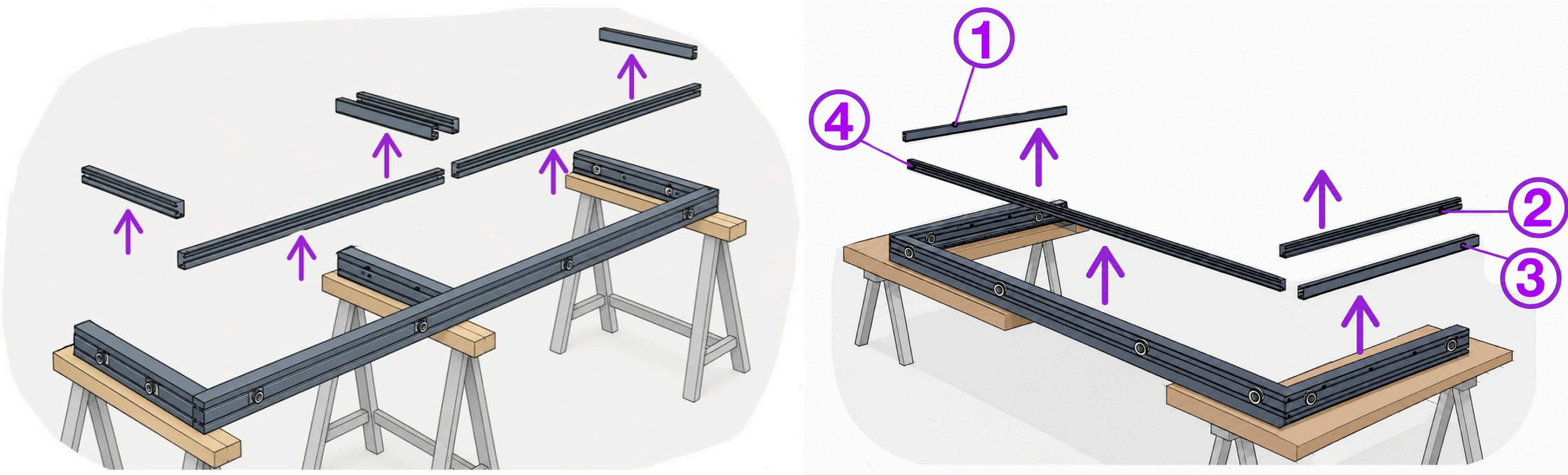
A	Profiil/ Profile
B	Klaasiliistu kruvi/ Glazing bead screw
C	Klaasiliist/ Glazing bead
D	Umbosa/ Solid panel
E	Ker. tihend (Kerafix 2-5mm) / Ceramic seal (Kerafix 2-5mm)
F	Distantklots/ Spacer block
G	Paisuvtihend**/ Intumescent seal**

⚙ Umbosa paigaldus nagu klaasil.
Solid panel installation is the same as for glass.

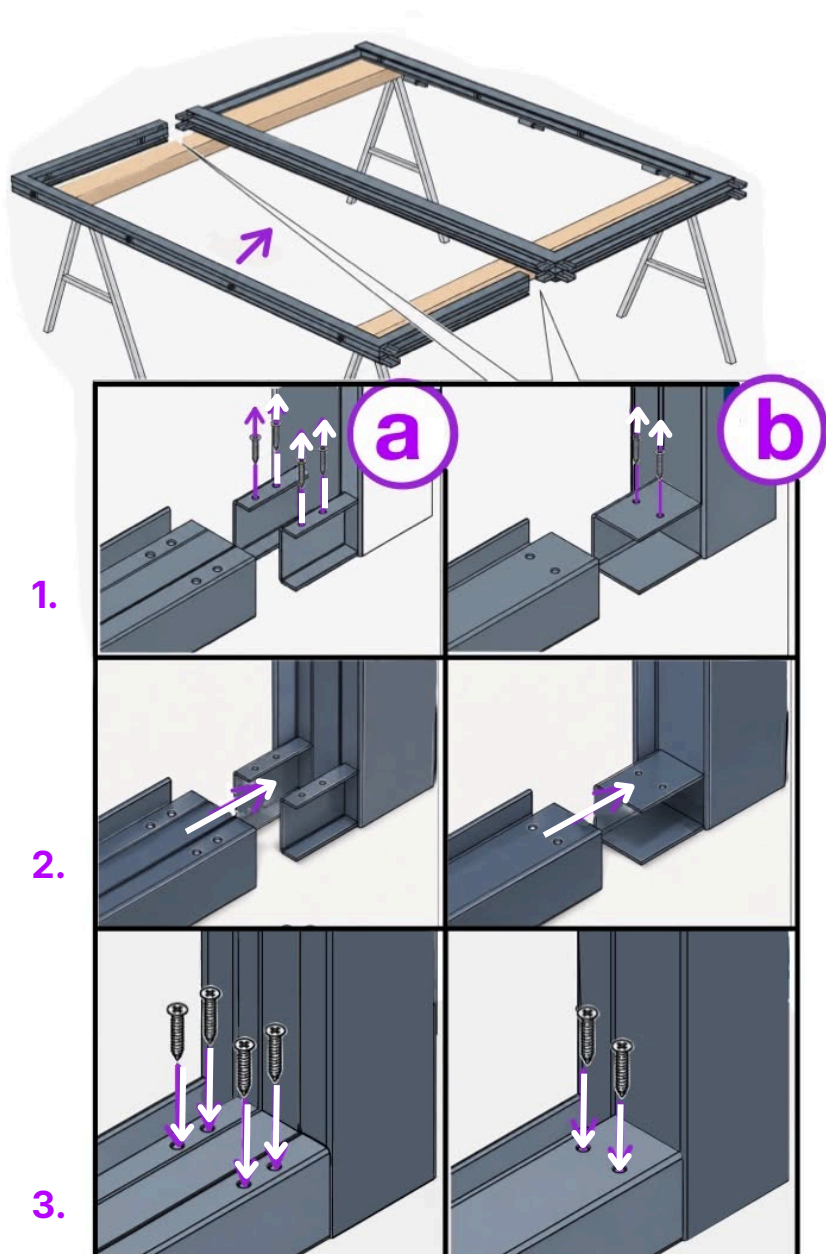
KÜLJE- JA ÜLAOSA PAIGALDUS (TAPP- JA KRUVIÜHENDUS)/ SIDE AND OVER PANEL INSTALLATION (TENON AND SCREW CONNECTION)

Külje- ja ülaosa paigaldamine ehitusavasse toimub samadel põhimõtetel nagu lengi ja ukse paigaldus. Selles peatükis kirjeldatakse ainult konstruktsiooni kokkupanekut ehk külje- ja ülaosa ühendamist lengiga.
The installation of the side and over panel into the structural opening follows the same principles as the frame installation. This chapter describes only the assembly of the structure, i.e. connecting the side and top sections to the frame.

TAPPÜHENDUS/ TENON CONNECTION:



⚙ Eemalda klaasiliistud külje- ja ülaosalt ning lengilt. Enne eemaldamist märgi või jäta meelde klaasiliistude asukoht ja paigaldussuund, et need oleks võimalik hiljem õigesti tagasi paigaldada.
Remove the glazing beads from the side and top sections and from the frame. Before removing them, mark or note the position and installation direction of the glazing beads so that they can be reinstalled correctly later.

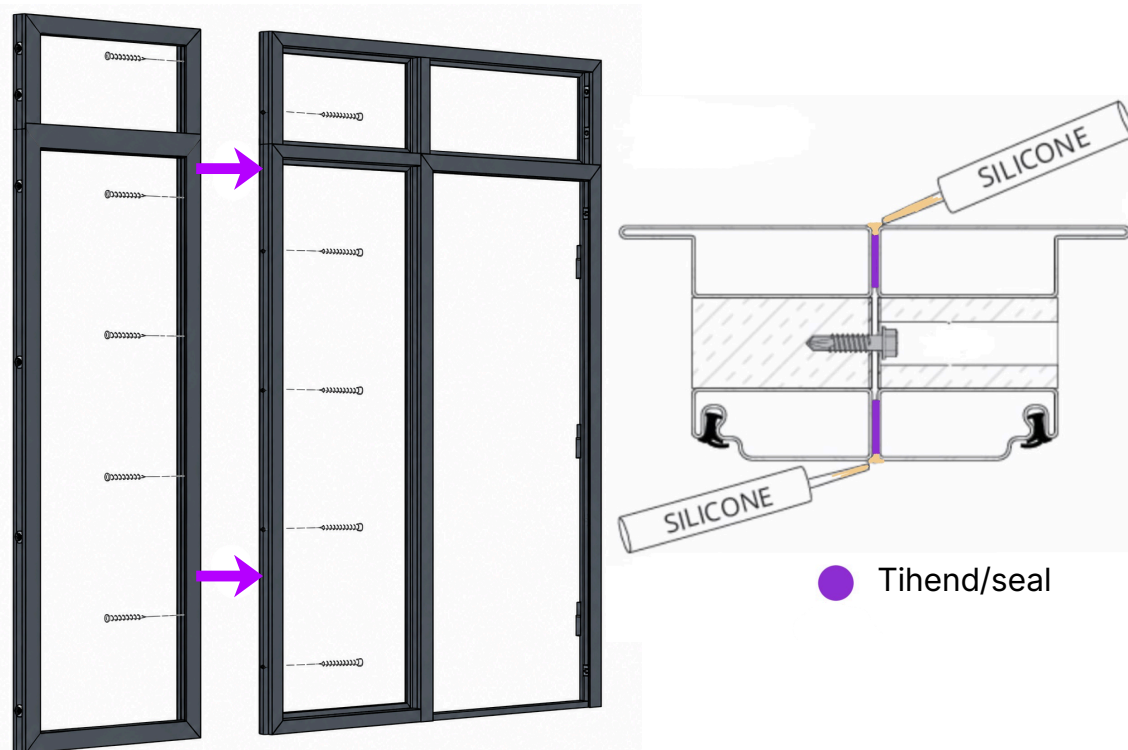


⚙ Esmalt kinnita küljeosa lengi külge. Tappühenduse korral eemalda esmalt ühenduskruvid, aseta küljeosa ja leng omavahel õigesse asendisse ning lükka ühendusdetailid kokku. Seejärel kinnita osad uuesti kruvidega. Korda sama ka ülaosaga. Paigaldamisel tuleb jälgida, et ühendatavad osad oleksid omavahel paralleelsed, sirgelt joondatud ja pärast kinnitamist stabiilsed.

First, attach the side panel to the frame. In the case of a tenon connection, first remove the connection screws, position the side section and the frame correctly, and slide the connection parts together. Then secure the parts again with screws. Repeat the same procedure with the top panel. During installation, make sure that the connected parts are parallel, properly aligned and stable after fastening.

2

KRUVIÜHENDUS/ SCREW CONNECTION:

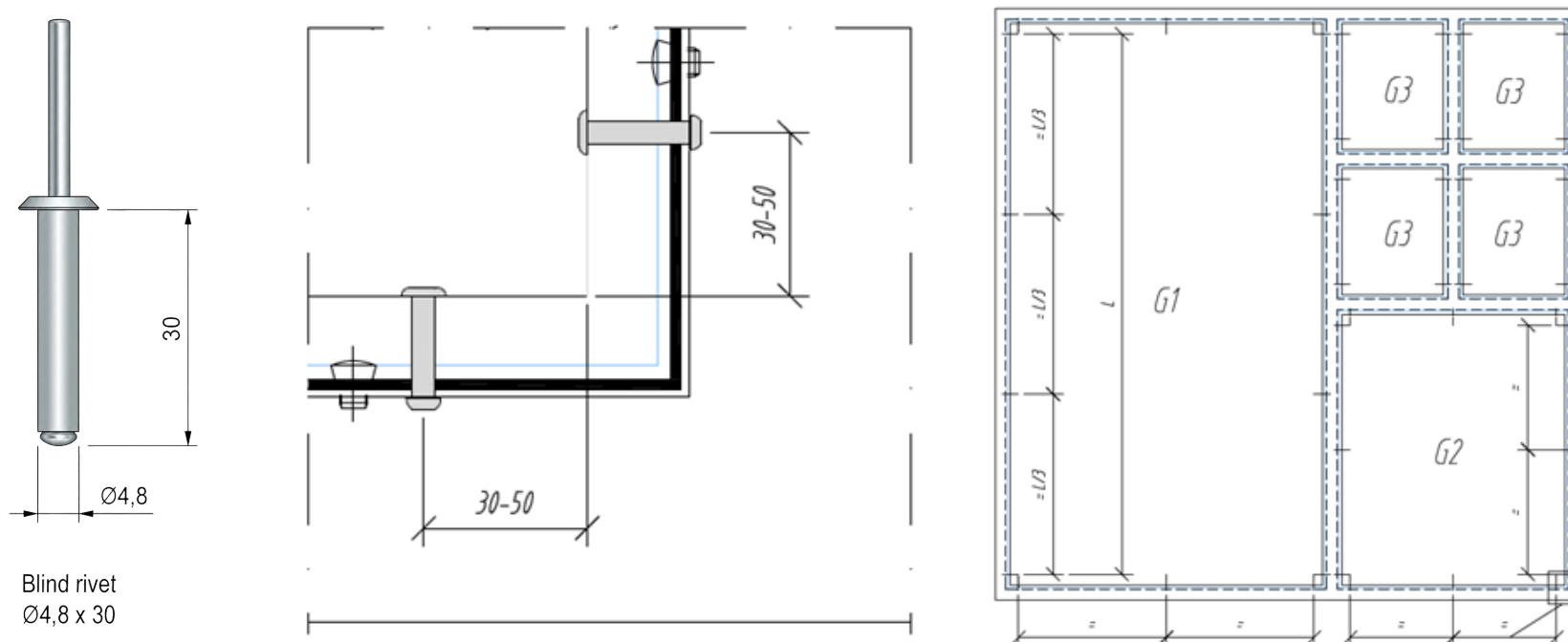


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ROOSTEVABA TULEKINDLA (EI30, EI60) MITTEKANDVA VAHESEINA, FIX-AKNA KLAASIMINE/ GLAZING OF STAINLESS STEEL FIRE-RATED (EI30, EI60) NON-LOAD-BEARING PARTITION AND FIXED WINDOW

Klaasid paigalda pärast raami. EI30/EI60 roostevaba puhul kinnita klaasiliistud lisaks roostevabade peitpeaneetidega (vastavalt DBI-le).

Install glass after the frame. For EI30/EI60 stainless systems, additionally fix glazing beads with stainless countersunk rivets (per DBI).



Esimene neet 30–50 mm liistu servast.
Liist 500–1000 mm – min 1 neet, 1000–1500 mm – min 2 neeti.
Pikemate liistude korral neetide samm max 850 mm.

First rivet 30–50 mm from the edge of the bead.
Bead 500–1000 mm – min 1 rivet; 1000–1500 mm – min 2 rivets.
For longer beads, max rivet spacing 850 mm.

LÖPPKONTROLL JA HOOLDUS/ FINAL INSPECTION AND MAINTENANCE

Pärast paigaldust tuleb läbi viia lõppkontroll paigaldaja poolt teostatud tööde ja paigaldatud komponentide ulatuses. Kontrolli käigus veendutakse avatäite kinnituses, ukselehe liikumises, ukselehe ja lengi vahekaugustes, sulgumises ning paigaldatud tihendite, suluste ja lisatarvikute nõuetekohases paiknemises ja toimivuses.

Kui sulused, lukustus, automaatika, läbipääsusüsteem, elektrilised vasturauad või muud lisatarvikud paigaldatakse või seadistatakse teiste osapoolte poolt, vastutab nende tööde kontrolli ja toimivuse eest vastava töö teostaja. Avatäite paigaldaja lõppkontroll ei hõlma hiljem teiste osapoolte poolt paigaldatud, seadistatud või muudetud komponente, kui selles ei ole eraldi kokku lepitud.

Edasine kasutamine, hooldus ja reguleerimine toimub vastavalt tootja kasutus- ja hooldusjuhendile ning kasutatud furnituuri tootjapoolsetele juhistele.

Hoolduse käigus tuleks perioodiliselt:

- kontrollida ukselehe ja lengi vahekauguseid,
- määrada hinged ja lukud,
- vajadusel reguleerida sulgurit või vahetada tihendeid.

After installation, a final inspection must be carried out within the scope of the installer's work and installed components. The inspection shall verify the fixing of the door assembly, door leaf operation, gaps between the door leaf and frame, closing function, and the correct positioning and operation of seals, hardware, and accessories.

If hardware, locking systems, automation, access control systems, electric strikes, or other accessories are installed or adjusted by other parties, the respective contractor is responsible for the inspection and functionality of those works. The final inspection carried out by the door installer does not include components installed, adjusted, or modified later by other parties, unless separately agreed.

Further use, maintenance, and adjustment must follow the manufacturer's operating and maintenance instructions and the instructions of the hardware manufacturer.

During maintenance, periodically:

- check the gaps between the door leaf and frame,
- lubricate hinges and locks,
- adjust the closer or replace seals if necessary.



Klaasprofiili paigaldusjuhendi lisad ET

Glass Profile Installation Guide Appendices EN

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PJ5 - LISA 1A – KIWA TOODETE PAIGALDUSNÕUDED

PJ5 - APPENDIX 1A – INSTALLATION REQUIREMENTS FOR KIWA PRODUCTS

EE

NB! Tammer OÜ ei väljasta kliendile kinnitatud tehnilist kirjeldust ega katseprotokolle (v.a Lisa Z). Vajadusel on dokumentidega võimalik visuaalselt tutvuda.

- Kui tuletõkketoote paigaldusvahe täidetakse kivivillaga, tuleb see katta 1,0 mm paksuse terasliistuga või tulekindla mastiksiga; paled võib viimistleda kipsplaadi või muu tulekindla materjaliga.
- *¹ Penosil Firerated Gunfoam vahuga paigaldamisel tuleb paigaldusvahe katta pealt 1,0 mm paksuse terasliistuga, või tulekindla mastiksiga, või paled võib viimistleda kipsplaadi või mõne muu tulekindla materjaliga.
- *² Sa/S200 ukse, kui paigaldusvahe tihendatakse Penosil Firerated Gunfoam vahuga, peab paigaldusvahe katma 1,0 mm paksuse terasliistuga, või tulekindla mastiksiga, või paled võib viimistleda kipsplaadi või mõne muu tulekindla materjaliga.
- *³ Sa/S200 ukse, kui paigaldusvahe tihendatakse kivivillaga, peab vähemalt üks pool olema kaetud silikooniga. Paigaldusvahed võib mõlemalt poolt lisaks katta 1,0mm terasliistu, tulekindla mastiksi või kipsplaadiga.

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Note! Tammer OÜ does not provide customers with approved technical descriptions or test reports (except Appendix Z). If required, the documents can be reviewed visually.

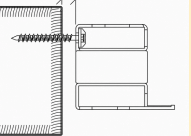
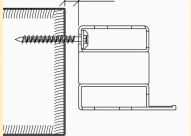
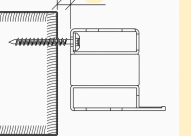
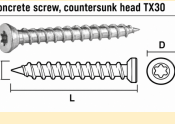
- If the installation gap of a fire-rated product is filled with mineral wool, it must be covered with a 1.0 mm steel trim or fire-resistant mastic; the reveals may be finished with plasterboard or another fire-resistant material.
- *¹ When installing with Penosil Fire Rated Gunfoam, the installation gap must be covered with a 1.0 mm steel trim, fire-resistant mastic, or finished with plasterboard or another fire-resistant material.
- *² For Sa/S200 doors, if the installation gap is sealed with Penosil Fire Rated Gunfoam, it must be covered with a 1.0 mm steel trim, fire-resistant mastic, or finished with plasterboard or another fire-resistant material.
- *³ For Sa/S200 doors, if the installation gap is sealed with mineral wool, at least one side must be sealed with silicone. The gap may additionally be covered on both sides with a 1.0 mm steel trim, fire-resistant mastic, or plasterboard.

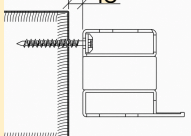
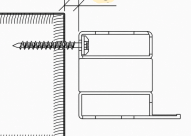
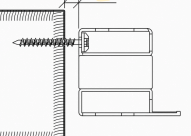
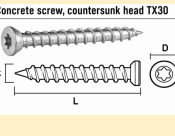
Paigaldustingimused terasprofiiltoodetele (EN 13501-2)

Mittekandev vahesein			Tarindi tüübid ja parameetrid		Paigaldusvahe PV (seina-lengi vahel)			Tihendusmaterjal		Kinnitusvahend		Tappliitega seina pikendamine sektsoonide kaupa
Tulepüsivusklass ja tüüp	Paigaldustingimused fikseeritud sertifitseerija poolt kinnitatud tehnilises kirjelduses.	Sertifikaadi number	Jäik ≥120mm ≥650kg/m ³	Mittejäik ≥100mm	≤15mm	≤30mm	≤40mm	Kivivill (Paroc Extra)	Penosil Firerated Gunfoam	min.6,3mm	min.7,5mm	
E60, tüüp TPS707	TS-ET-0376	ET-0376-23	OK	-	-	OK	-	OK	-	-	OK	OK
EI30, tüüp TPS708	TS-ET-0366	ET-0366-23	OK	-	OK*1 (vahuga tihendamine)	OK	-	OK	OK*1 (paigaldusvahe 10-20mm)	-	OK	OK
EI30, tüüp TPS708	TS-ET-0366	ET-0366-23	-	OK	OK	-	-	OK	-	OK (mittejäik sein)	-	OK
EI60, tüüp TPS709	TS-ET-0390	ET-0390-24	OK	OK	-	OK	-	OK	-	OK (mittejäik sein)	OK	OK
EI120, tüüp TPS710 SP79000/750/15	TS-ET-0425	ET-0425-25	≥160mm ≥650kg/m ³	-	-	-	OK	OK	-	-	OK	OK
EI120, tüüp TPS710 SP9711000	TS-ET-0425	ET-0425-25	≥160mm ≥650kg/m ³	-	-	-	OK	OK	-	-	OK	-

Tuletõkke profiiluks koos külj- ja ülapaneeelidega			Tarindi tüübid ja parameetrid		Paigaldusvahe PV (seina-lengi vahel)			Tihendusmaterjal		Kinnitusvahend		Tappliitega pikendamine sektsoonide kaupa (mittekandva vaheseinaga ühendamine)
Tulepüsivusklass ja tüüp	Paigaldustingimused fikseeritud sertifitseerija poolt kinnitatud tehnilises kirjelduses.	Sertifikaadi number	Jäik ≥120mm ≥650kg/m ³	Mittejäik ≥100mm	≤15mm	≤20mm	≤30mm	Kivivill (Paroc Extra)	Penosil Firerated Gunfoam	min.6,3mm	min.7,5mm	
E60/EW60, tüüp TPU705	TS-CPR-227 TS-ET-0290	1336-CPR-0227 ET-0290-21	OK	OK	OK*2 Sa/S200 (vahuga)	OK*3 Sa/S200 (villaga)	OK (kui deklareeritakse tulepüsivus)	OK	OK*1	OK (mittejäik sein)	OK	OK
EI ₂ 30, tüüp TPU706	TS-CPR-0172 TS-ET-0358-23	1336-CPR-0172 ET-0358-23	OK	OK	OK*2 Sa/S200 (vahuga)	OK*3 Sa/S200 (villaga)	OK (kui deklareeritakse tulepüsivus)	OK	OK*1	OK (mittejäik sein)	OK	OK
EI ₂ 60, tüüp TPU706 65mm profiil	TS-ET-0440-25	ET-0440-25	OK	OK	-	OK*1 (vahuga tihendamine)	OK (villaga tihendamine)	OK	OK*1 (paigaldusvahe 10-20mm)	OK (mittejäik sein)	OK	OK
EI ₂ 60, tüüp TPU706 70mm ja 90mm profiil	TS-CPR-0184 TS-ET-0324	1336-CPR-0184 ET-0324-22	OK	OK	-	OK*1 (vahuga tihendamine)	OK (villaga tihendamine)	OK	OK*1 (paigaldusvahe 10-20mm)	OK (mittejäik sein)	OK	OK
EI ₂ 60, tüüp TPU706 Sa / S200	TS-CPR-0184 TS-ET-0324	1336-CPR-0184 ET-0324-22	OK	OK	OK*2 Sa/S200 (vahuga)	OK*3 Sa/S200 (villaga)	-	OK	OK*1 (paigaldusvahe ≤15mm)	OK (mittejäik sein)	OK	OK
EI ₂ 90, tüüp TPU790	TS-CPR-264 TS-ET-0427-25	1336-CPR-0264 ET-0427-25	OK	OK	-	OK (akendel)	OK (uksekomplektil)	OK	-	OK (mittejäik sein)	OK	OK

Installation conditions for steel profile products (EN 13501-2)

Non-load bearing partition wall			Structure types & parameters		Installation gap - IG (between the wall & frame)			Sealing materials		Fastener		Can be connected in glazed partition system (to non-load bearing partition wall)
Fire resistance class and product type	Installation conditions stated in the technical specifications approved by an authorized certifier	Certificate number	Rigid wall $\geq 120\text{mm}$ $\geq 650\text{kg/m}^3$	Flexible wall $\geq 100\text{mm}$	$\leq 15\text{mm}$ IG 	$\leq 30\text{mm}$ IG 	$\leq 40\text{mm}$ IG 	Rock wool (Paroc Extra) 	Penosil Firerated Gunfoam 	min. 6,3mm 	min. 7,5mm Concrete screw, countersunk head TX30 	
E60, type TPS707	TS-ET-0376	ET-0376-23	OK	-	-	OK	-	OK	-	-	OK	OK
EI30, type TPS708	TS-ET-0366	ET-0366-23	OK	-	OK*1 (sealed with foam)	OK	-	OK	OK*1 (IG=10-20mm)	-	OK	OK
EI30, type TPS708	TS-ET-0366	ET-0366-23	-	OK	OK	-	-	OK	-	OK (flexible wall)	-	OK
EI60, type TPS709	TS-ET-0390	ET-0390-24	OK	OK	-	OK	-	OK	-	OK (flexible wall)	OK	OK
EI120, type TPS710 SP79000/750/15	TS-ET-0425	ET-0425-25	$\geq 160\text{mm}$ $\geq 650\text{kg/m}^3$	-	-	-	OK	OK	-	-	OK	OK
EI120, type TPS710 SP9711000	TS-ET-0425	ET-0425-25	$\geq 160\text{mm}$ $\geq 650\text{kg/m}^3$	-	-	-	OK	OK	-	-	OK	-

Fire resistant profile door set with side and transom panels			Structure types & parameters		Installation gap - IG (between the wall & frame)			Sealing materials		Fastener		Can be connected in glazed partition system (to non-load bearing partition wall)
Fire resistance class and product type	Installation conditions stated in the technical specifications approved by an authorized certifier	Certificate number	Rigid wall $\geq 120\text{mm}$ $\geq 650\text{kg/m}^3$	Flexible wall $\geq 100\text{mm}$	$\leq 15\text{mm}$ IG 	$\leq 20\text{mm}$ IG 	$\leq 30\text{mm}$ IG 	Rock wool (Paroc Extra) 	Penosil Firerated Gunfoam 	min. 6,3mm 	min. 7,5mm Concrete screw, countersunk head TX30 	
E60/EW60, type TPU705	TS-CPR-227 TS-ET-0290	1336-CPR-0227 ET-0290-21	OK	OK	OK*2 Sa/S200 (sealed with foam)	OK*3 Sa/S200 (sealed with rock wool)	OK (if only the fire resistance is declared)	OK	OK*1	OK (flexible wall)	OK	OK
EI₂30, type TPU706	TS-CPR-0172 TS-ET-0358-23	1336-CPR-0172 ET-0358-23	OK	OK	OK*2 Sa/S200 (sealed with foam)	OK*3 Sa/S200 (sealed with rock wool)	OK (if only the fire resistance is declared)	OK	OK*1	OK (flexible wall)	OK	OK
EI₂60, type TPU706 65mm profile	TS-ET-0440-25	ET-0440-25	OK	OK	-	OK*1 (sealed with foam)	OK (sealed with rock wool)	OK	OK*1 (IG=10-20mm)	OK (flexible wall)	OK	OK
EI₂60, type TPU706 70mm, 90mm profile	TS-CPR-0184 TS-ET-0324	1336-CPR-0184 ET-0324-22	OK	OK	-	OK*1 (sealed with foam)	OK (sealed with rock wool)	OK	OK*1 (IG=10-20mm)	OK (flexible wall)	OK	OK
EI₂60, type TPU706 Sa / S200	TS-CPR-0184 TS-ET-0324	1336-CPR-0184 ET-0324-22	OK	OK	OK*2 Sa/S200 (sealed with foam)	OK*3 Sa/S200 (sealed with rock wool)	-	OK	OK*1 (IG ≤ 15mm)	OK (flexible wall)	OK	OK
EI₂90, type TPU790	TS-CPR-264 TS-ET-0427-25	1336-CPR-0264 ET-0427-25	OK	OK	-	OK (windows)	OK (door set)	OK	-	OK (flexible wall)	OK	OK

RISE (SP) PAIGALDUSNÕUDED (TERASPROFIILUSTE PAIGALDUSJUHEK)

		Seinakonstruktsiooni tüüp ja parameetrid		Paigaldusvahe (maksimaalne vahe sein ja konstruktsiooni vahel)			Tihendusmaterjal / isolatsioon			Kinnituskruvi Ø	
Tulepüsivusklass	Tüübikinnituse tõend	jäik sein ≥120 mm ≥650 kg/m³	mittejäik sein ≥100 mm	Külje-/ ülaseriva kinnitused <20 mm (suitsutihedus)	Külgkinnitused 10–30 mm (tulekaitse)	Ülakinnitused 15–30 mm (tulekaitse)	Kivivill või alternatiivina keraamiline tihenduslint	Penosil Firerated Gunfoam	Heakskiidetud mastiks või elastne vuugitäide	min. 6,0 mm (teras- ja puitkarkassi puhul)	min. 7,5 mm (betooni puhul)
E30/E60 (SP35000/ SP95000)	4294/88	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	Sa/S200 konstruktsioonil vähemalt ühel küljel	OK	OK
EI60 (SP35000/ SP95000)	1132/93	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EW60/EI215 (SP35000/ SP95000/ SP76500/ SP976500)	1234-11	OK	OK	Sa/S200	OK	OK	≥30kg/m³	OK	Sa/S200 konstruktsioonil vähemalt ühel küljel	min 6,3	OK
A30/EI30 (SP35000/ SP95000/ SP76500/ SP976500)	4295/88	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EI30 (SP76500/ SP976500)	1946/89	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	Sa/S200 konstruktsioonil vähemalt ühel küljel	OK	OK
EI60 (SP79000/ SP979000)	1945/89	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	Sa/S200 konstruktsioonil vähemalt ühel küljel	OK	OK
A60/EI60 (SP76500/SP976500/ SP79000/ SP979000)	1947/89	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EI90/EI120 E90/E120	1141/95	OK	-	-	OK	OK	≥30kg/m³	-	-	-	OK

RISE (SP) INSTALLATION REQUIREMENTS (STEEL PROFILE DOOR INSTALLATION INSTRUCTIONS)

		Wall construction type and parameters		Installation gap (Max space between wall and assembly)			Sealing material / Insulation			Fixing screw Ø	
Fire resistance class	Type approval certificate	rigid wall ≥120 mm ≥650 kg/m³	non-rigid wall ≥100 mm	Side/top fixings <20 mm (Smoke tightness)	Side fixings 10–30 mm (Fire protection)	Top fixing 15–30 mm (Fire protection)	Stone wool or alternatively ceramic sealing strip	Penosil Firerated Gunfoam	Approved sealant or soft joint sealant	min. 6.0 mm (into steel stud and timber stud)	min. 7.5 mm (into concrete)
E30/E60 (SP35000/ SP95000)	4294/88	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	for Sa/S200 assembly at least on one side	OK	OK
EI60 (SP35000/ SP95000)	1132/93	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EW60/EI215 (SP35000/ SP95000/ SP76500/ SP976500)	1234-11	OK	OK	Sa/S200	OK	OK	≥30kg/m³	OK	for Sa/S200 assembly at least on one side	min 6,3	OK
A30/EI30 (SP35000/ SP95000/ SP76500/ SP976500)	4295/88	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EI30 (SP76500/ SP976500)	1946/89	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	for Sa/S200 assembly at least on one side	OK	OK
EI60 (SP79000/ SP979000)	1945/89	OK	OK	Sa/S200	OK	OK	≥30kg/m³	-	for Sa/S200 assembly at least on one side	OK	OK
A60/EI60 (SP76500/SP976500/ SP79000/ SP979000)	1947/89	OK	OK	-	OK	OK	≥30kg/m³	-	-	OK	OK
EI90/EI120 E90/E120	1141/95	OK	-	-	OK	OK	≥30kg/m³	-	-	-	OK

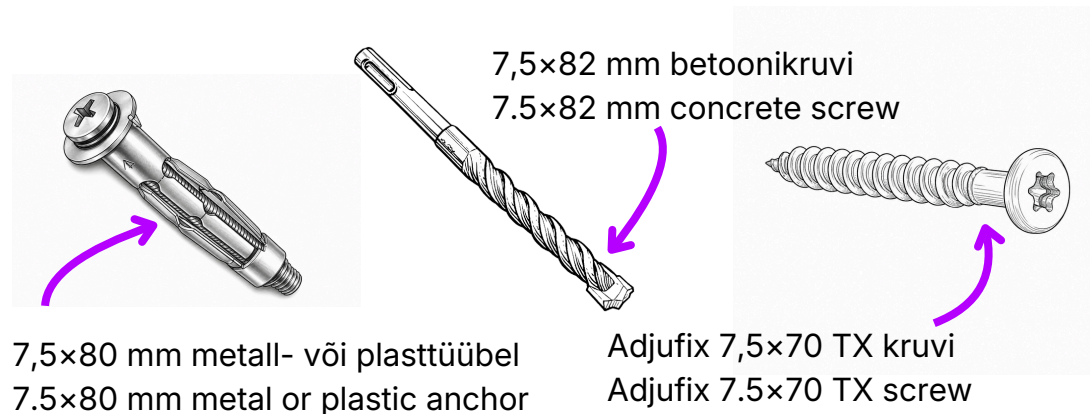
PJ5 - LISA 2 – RC2 / RC3 / RC4 TOODETE PAIGALDUSNÕUDED

PJ5 - APPENDIX 2 – INSTALLATION REQUIREMENTS FOR RC2 / RC3 / RC4 PRODUCTS

RC2, RC3 ja RC4 sissemurdmisklassiga klaasprofiiluste paigaldamisel tuleb järgida rangemaid kinnitus- ja tugevdusnõudeid, et tagada toote vastavus testitud turvalisusklassidele.

Ettenähtud kinnituskohhti ei tohi vahele jätta (RC2 c/c max 800mm), (RC3 c/c max 600mm), (RC4 c/c max 500mm)

Kinnitusvahendina (e) tuleb kasutada sobivaid kinnitustüübleid ja -kruvisid:



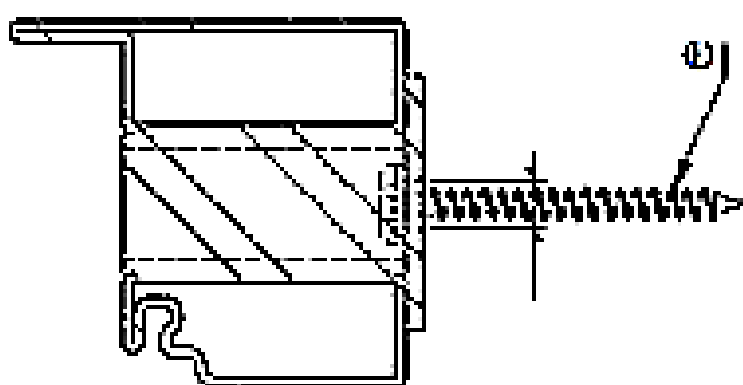
When installing glass profile doors with burglary resistance classes RC2, RC3, and RC4, stricter fixing and reinforcement requirements must be followed to ensure compliance with the tested security classes.

Specified fixing points must not be omitted (RC2 c/c max 800 mm), (RC3 c/c max 600 mm), (RC4 c/c max 500 mm).

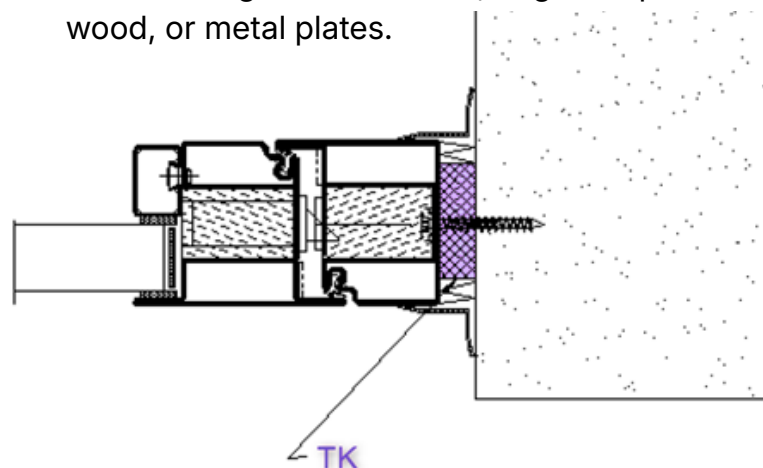
As fastening elements (e), use suitable anchors and screws:



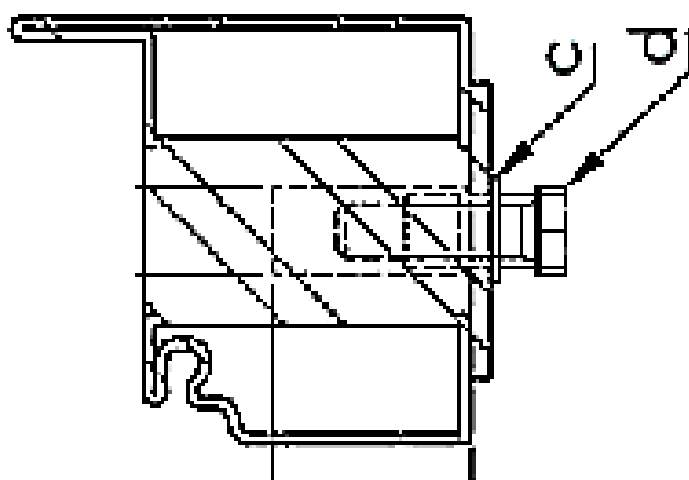
- Standard kinnituslahenduse korral tuleb pärast kruvide sisestamist täita välimise raami ja ehitusava vaheline ruum kinnituspunktide ümber 25–50 mm kõrguse survekindla materjaliga (TK), nt PA-plastklots, tihe puit, metallplaadid.



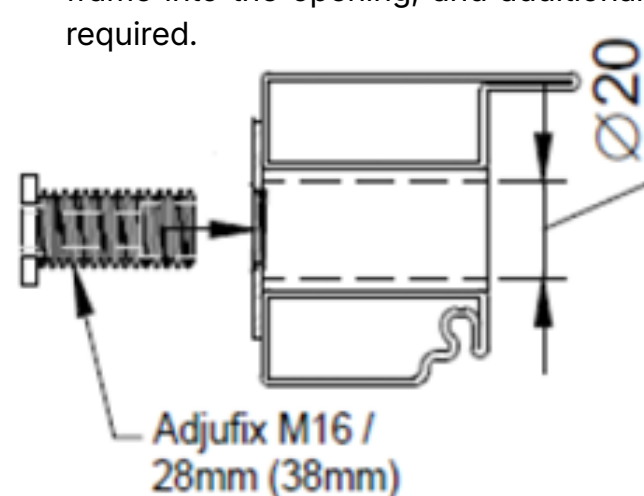
- For a standard fixing solution, after inserting the screws, the gap between the outer frame and the structural opening around the fixing points must be filled with a 25–50 mm high load-bearing material (TK), e.g. PA plastic blocks, dense wood, or metal plates.



- Kinnituskohdade all peavad olema toestused (TK) hingede ja lukustuspoldi piirkonnas. Toestusklotsid (TK) tuleb vajadusel fikseerida ehitusvahu, villa, silikooni või mastiksiga.
- NB!** Kui klaasite ukсед objektil, peavad tugiklotsid olema lukustuspunktide kohas ka klaasi ja profiilraami vahel.
- Kui lengil on lisatud M8 reguleerimispoldid (c, d) või Adjufix kinnituslahendus, võib nendega ukseraami ehitusavasse kiiluda ning täiendavaid tugevdusi ei pruugi olla vaja.



- Support blocks (TK) must be installed at fixing points in the hinge and locking bolt areas. If necessary, the support blocks (TK) must be fixed with foam, mineral wool, silicone, or mastic
- Note!** If glazing doors on site, support blocks must also be placed between the glass and the profile frame at the locking points.
- If the frame is equipped with M8 adjustment bolts (c, d) or an Adjufix fixing solution, these can be used to wedge the door frame into the opening, and additional supports may not be required.



NB! Seina vastavuse eest vastutab töö tellija.

Note! The client is responsible for ensuring the wall meets the requirements.

PJ5 - LISA 3 – KLAASIGA SUITSUTÖKKEUSTE (SA/S200) PAIGALDUSNÕUDED

PJ5 - APPENDIX 3 – INSTALLATION REQUIREMENTS FOR SMOKE CONTROL DOORS WITH GLASS (SA/S200)

Suitsutõkkenõudega metalluste (Sa / S200) paigaldamisel **tuleb tagada** konstruktsiooni **hermeetilisus ja korrektsus vastavalt standardile EN 1634-3**.

When installing metal doors with smoke control requirements (Sa / S200), **the airtightness and proper installation** of the structure **must be ensured in accordance with EN 1634-3**.

Peamised nõuded:

Paigalduspilu tuleb täita tihedalt pehme kivivilla või sertifitseeritud tuletõkkevahuga (nt Penosil FireRated Gunfoam B1).

NB! Suitsutõkkeuste puhul on lubatud paigalduspilu laius väiksem kui tuletõkkeustel:

* kivivillaga täitmisel maksimaalselt 20 mm (tuletõkkeuksel kuni 30mm)

* tuletõkkevahuga täitmisel maksimaalselt 15 mm (tuletõkkeuksel 20-30mm)

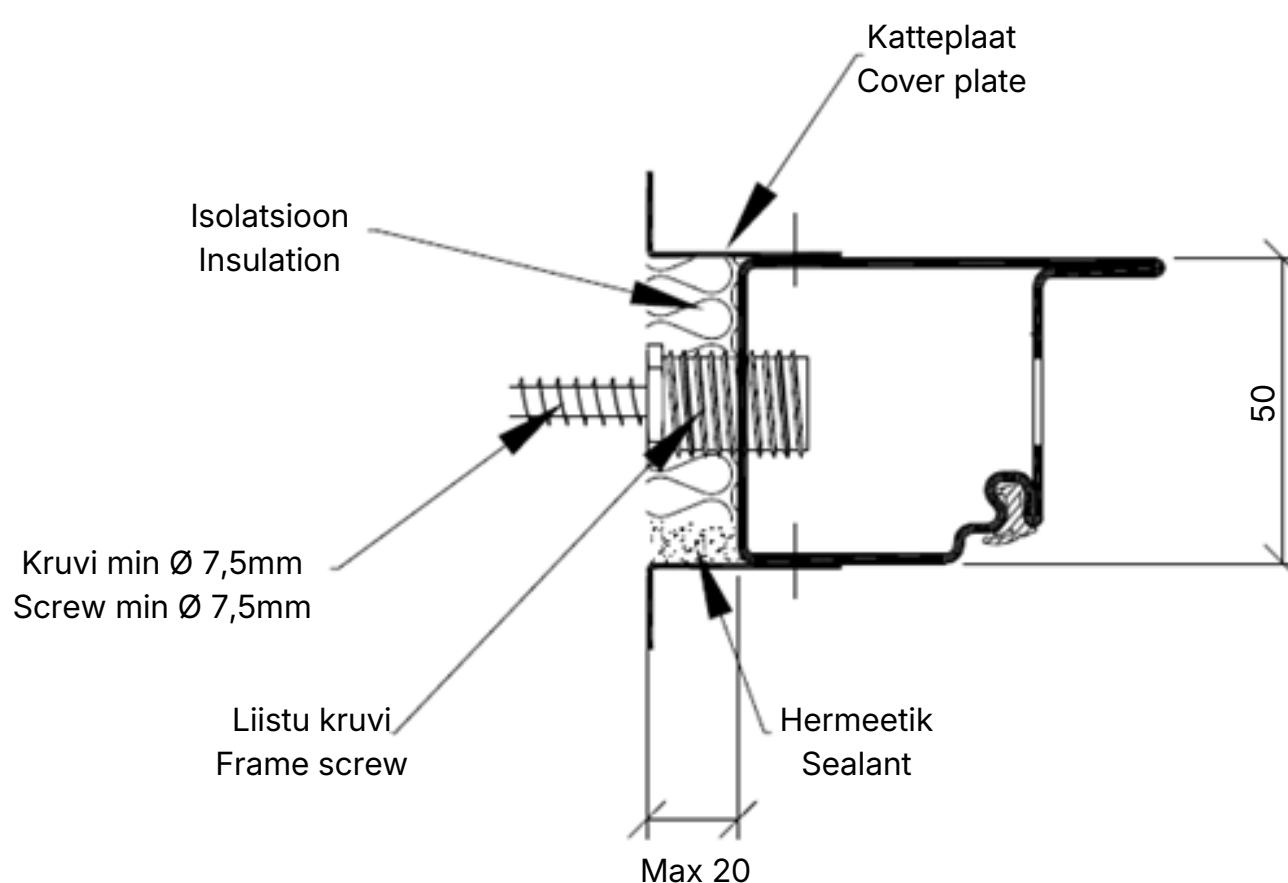
Main requirements:

The installation gap must be tightly filled with soft mineral wool or certified fire-rated foam (e.g. Penosil FireRated Gunfoam B1).

Note! For smoke control doors, smaller installation gaps are allowed than for fire doors:

* max 20 mm when filled with mineral wool (fire doors up to 30 mm)

* max 15 mm when filled with fire-rated foam (fire doors 20-30 mm)



* Kui kasutatakse kivivilla, peab paigaldusvuuk olema vähemalt ühel küljel kaetud tuletõkkesilikooni või tuletõkkemastiksiga.

* Penosil FireRated Gunfoam B1 kasutamisel ei ole silikooni või mastiksiga katmine vajalik. Kui leng ei kata vuuki, tuleb see katta katteplekiga või enne ehituslikku palede viimistlemist katta hermeetilise täitega.

* Paigaldustolerantsid peavad vastama uksetootja juhiste.

* Siseruumides kasutatavatel suitsutõkkeustel ei ole klaasi silikoonimine vajalik, kui kasutatakse õige paksusega tihendeid mis hoiavad klaasi kindlalt paigal pärast liistude kinnitamist.

* If mineral wool is used, the installation joint must be sealed on at least one side with fire-resistant silicone or fire-resistant mastic.

* When using Penosil FireRated Gunfoam B1, sealing with silicone or mastic is not required.

* If the frame does not cover the joint, it must be covered with a cover plate or sealed with an airtight filler before finishing the reveals.

* Installation tolerances must comply with the door manufacturer's instructions.

* For indoor smoke control doors, glazing does not require silicone if correctly sized seals are used to hold the glass securely after fixing the beads.

PJ5 - LISA 4 – HELITÖKKETOODETE JA ÕHUTIHEDUST NÕUDVATE TOODETE PAIGALDUSNÕUDED

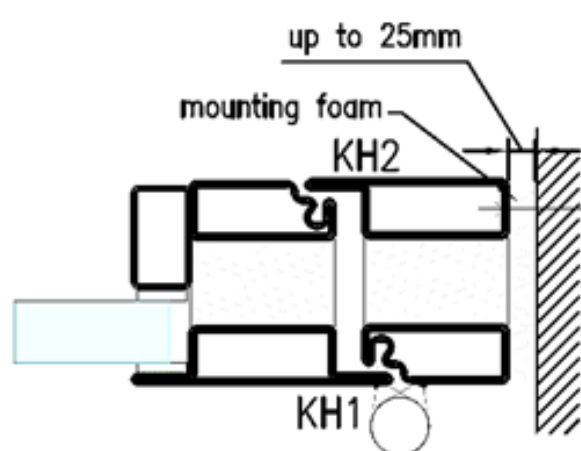
PJ5 - APPENDIX 4 – INSTALLATION REQUIREMENTS FOR ACOUSTIC PRODUCTS AND PRODUCTS REQUIRING AIR TIGHTNESS

Helitökke (nt $R_w \geq 40$ dB)- ja õhutihedusega uste (nt klass 3, 4) korrektne paigaldus on kriitilise tähtsusega, et säilitada toote deklareeritud sooritusvõime.

Proper installation of acoustic doors (e.g. $R_w \geq 40$ dB) and airtight doors (e.g. class 3, 4) is critical to maintain the declared performance of the product.

Soovitused helitökketoodetele:

- Lengi ja seina vahe võib olla täidetud pehme mineraal- või kivivillaga (NB! mitte liiga tihedalt).
- Villaga täidetud vuugi pinnale (mõlemale poole) tuleb kanda akustiline mastiks või elastne hermeetik. Lisaks võib vuugid katta ehitusplaadiga, ning lengi ja plaadi ühendus akrüülida.



- Klaas soovitud paigaldada elastsetele distantklotsidele ja tihendite vahele ei tohi jääda tühimikke.
- Helitökke siseuste klaasidel ei ole klaasi silikoonimine vajalik, kui kasutatakse õige paksusega tihendeid mis hoiavad klaasi kindlalt paigal pärast liistude kinnitamist.

Soovitused õhutihedust nõudvatele toodetele:

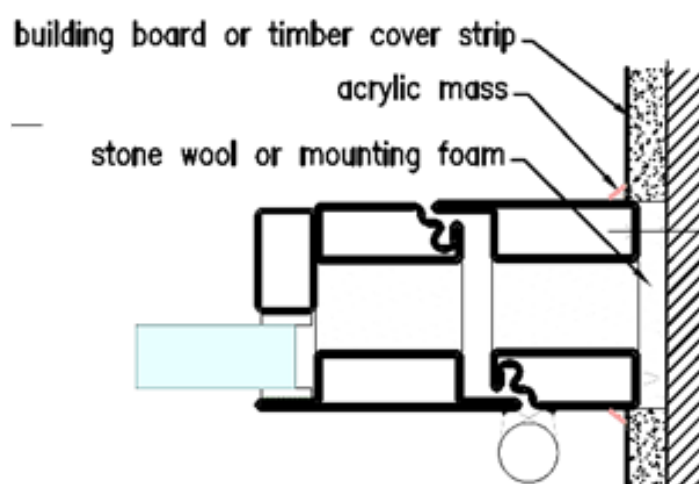
- Lengide ja seina vahed tuleb täita õhutiheda materjali või membraaniga ning katta vajadusel aurutökketeibiga.
- Paigaldusvahe soovitud mõlemalt poolt katta silikooni, akrüüli või mastiksiga.
- Ukseleht peab sulguma kogu ulatuses tihendile ilma tühikute ja pingeteta.
- Perimeetri tihendid ukselehel, lengil, klaasimisel peavad olema katkematud.
- Lävepaku lahenduseks soovitud kasutada õhutihedat staatilist toruläve.
- Õhutihedate siseuste klaasid ei pea olema silikoonitud.
- Õhutihedate välisuste klaaside silikoonimine on vajalik.

Suluste hermeetilisus (täiendav soovitus):

- Kui uksele on paigaldatud läbivate avadega sulused (nt lingid, silindrid, evakuatsioonisolused vms), tuleb vajadusel suurendada hermeetilisust ka nende ümbruses.
- Soovitud on kasutada tihedust parandavaid lisavahendeid – hermeetikut, tihendit, õhutiheda rosette jms.
- Kõik täiendavad tihendused peavad olema kooskõlas uksetootja juhiste ja testitud lahendustega, et tagada toote vastavus võimalikele sertifitseeritud lisaomadustele.

Recommendations for acoustic products:

- The gap between the frame and the wall may be filled with soft mineral or stone wool (NB! not too tightly packed).
- Apply acoustic mastic or elastic sealant to the surface of the wool-filled joint (on both sides). The joint may also be covered with a building board, and the connection between the frame and the board sealed with acrylic.



- The glass should be installed on elastic spacer blocks, and no gaps must remain between the seals.
- For acoustic interior doors, glazing does not require silicone if correctly sized seals are used to hold the glass securely after fixing the beads.

Recommendations for airtight products:

- Gaps between frames and walls must be filled with airtight material or membrane and, if necessary, sealed with vapor barrier tape.
- The installation gap should preferably be sealed on both sides with silicone, acrylic, or mastic.
- The door leaf must close fully against the seal without gaps or stress.
- Perimeter seals on the door leaf, frame, and glazing must be continuous.
- For threshold solutions, an airtight static tubular threshold is recommended.
- Glass in airtight interior doors does not require silicone sealing.
- Glass in airtight exterior doors must be sealed with silicone.

Hardware airtightness (additional recommendation):

- If the door is fitted with hardware with through-openings (e.g. handles, cylinders, panic/escape hardware, etc.), airtightness around these areas should be improved if necessary.
- It is recommended to use additional sealing solutions such as sealant, gaskets, airtight escutcheons, etc.
- All additional sealing must comply with the door manufacturer's instructions and tested solutions to ensure conformity with any certified additional properties.

PJ5 - LISA 5 – KUULIKINDLATE TOODETE PAIGALDUSNÕUDED

PJ5 - APPENDIX 5 – INSTALLATION REQUIREMENTS FOR BULLET-RESISTANT PRODUCTS

Paigaldamisel tuleb järgida rangemaid kinnitus- ja tugevdusnõudeid, et tagada toote vastavus testitud turvalisusklassidele.

Kuulikindel terasprofiiltoode (FB1–FB7) tuleb paigaldada konstruktsiooni, mis vastab testitud lahendusele ja standarditele EN 1522 / EN 1063.

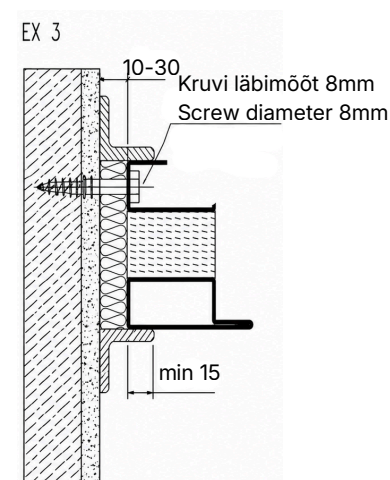
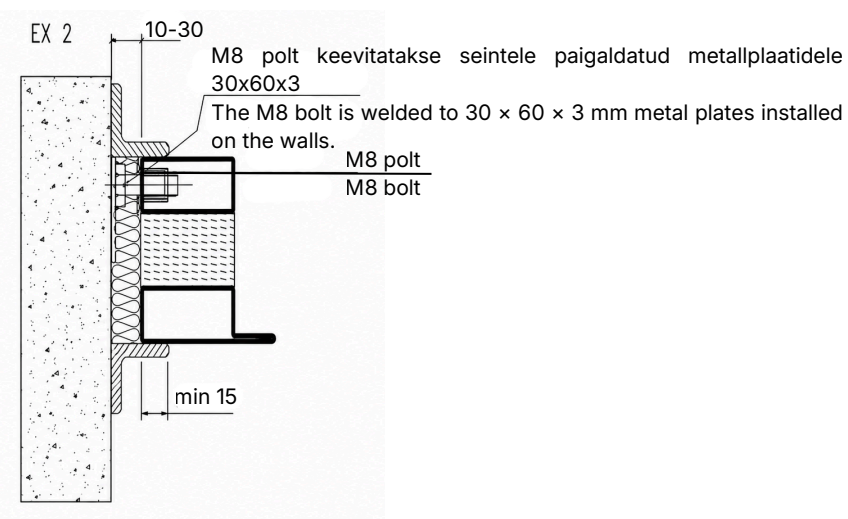
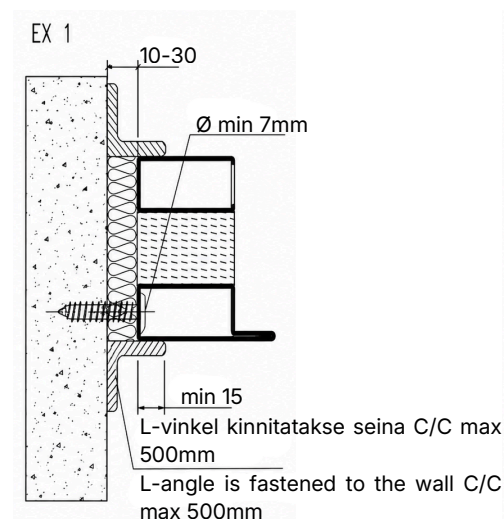
Sein peab olema raudbetoonist ja/või vähemalt sama kuulikindlusklassiga kui uks või klaasein.

Leng ja seina vaheline pilu tuleb katta või täita kuulikindla materjaliga, näiteks:

- L-teras
- täis- või plaatteras
- testitud täitematerjal (armox, hardox)

Miimumnõuded pilu kaitsele:

- FB1–FB2: **vähemalt 3 mm L-teras** mõlemalt poolt
- FB3–FB4: **vähemalt 5 mm L-teras** mõlemalt poolt



During installation, stricter fixing and reinforcement requirements must be followed to ensure compliance with the tested security classes.

Bullet-resistant steel profile products (FB1–FB7) must be installed into a structure that complies with the tested solution and standards EN 1522 / EN 1063.

The wall must be reinforced concrete and/or have at least the same bullet resistance class as the door or glass wall.

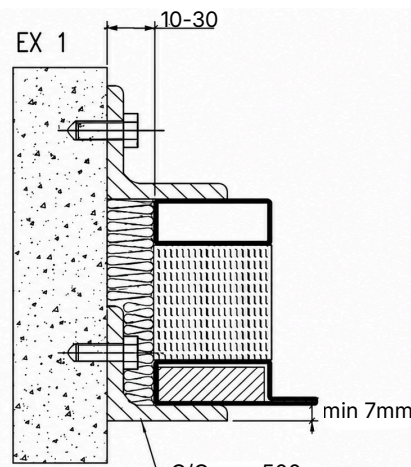
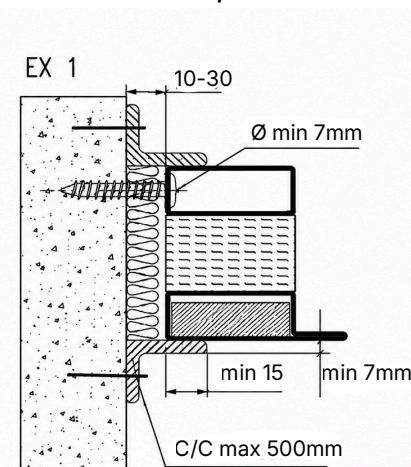
The gap between the frame and the wall must be covered or filled with bullet-resistant material, such as:

- L-steel profile
- solid or plate steel
- tested filler material (Armox, Hardox)

Minimum requirements for gap protection:

- FB1–FB2: **minimum 3 mm L-steel** on both sides
- FB3–FB4: **minimum 5 mm L-steel** on both sides

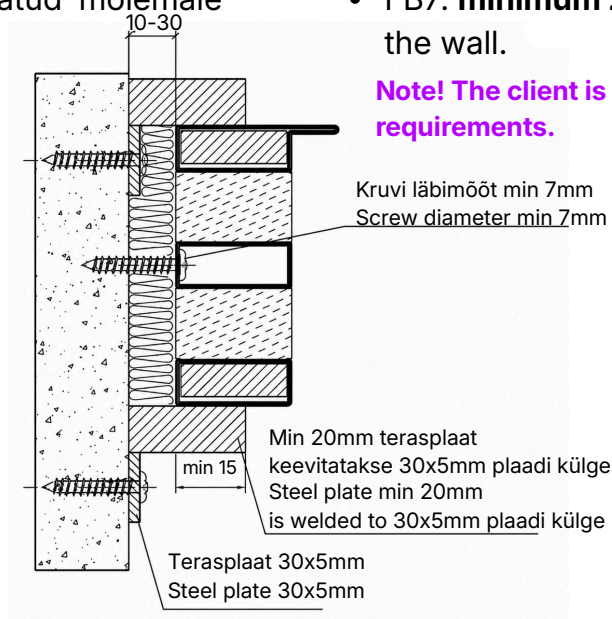
- FB5–FB6: **minimum 7 mm L-steel** on both sides.



- FB7: **vähemalt 20 mm terasplaat**, keevitatud mõlemale poole seina

- FB7: **minimum 20 mm steel plate** welded to both sides of the wall.

Note! The client is responsible for ensuring the wall meets the requirements.



NB! Sein vastavuse eest vastutab töö tellija.

PJ5 - LISA 6 - "DRY GLAZING" LAHENDUS (FIX 4111 / FIX 4302 TIHENDID)

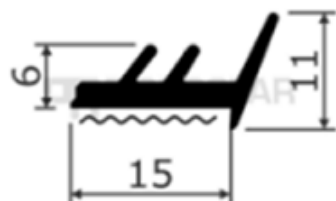
PJ5 - APPENDIX 6 – "DRY GLAZING" SOLUTION (FIX 4111 / FIX 4302 SEALS)

Üldinfo:

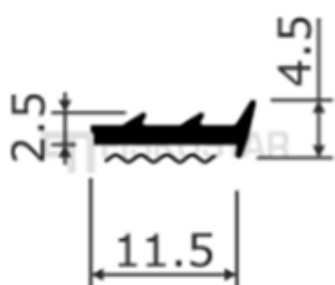
NB! Tihendid Fix 4111, Fix 4302, EPDM ei sobi kasutamiseks tuletõkketoodetele.

Kasutatavad välimised tihendid:

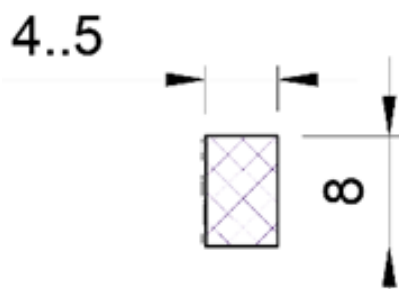
- Fix 4111 MU EPDM:



- Fix 4302 MU EPDM (valik sõltub klaasi paksusest, klaasiliistu ja sisemise tihendi sobivusest).



Kasutatav sisemine tihend: EPDM 4-5 x8 mm:



Mastiks: Sika Lastomer 710, pehme ja nätske butüülmastiks, mis peab olema värske paigaldamise hetkel.

NB! Õhu ja veepidavustestid on tehtud just selles juhendis toodud paigalduslahendusega, mistõttu tuleb kasutada sama lahendust ka objektil, et tagada toodete veetihedus.

Ettevalmistus:

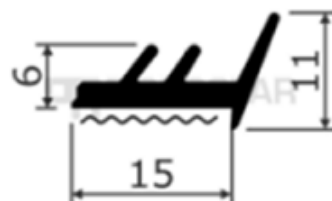
- Kontrollida klaasi mõõtusi ja tihendi sobivust.
- Veenduda, et klaasipesa ja raam oleksid puhtad tolmust, värvijääkidest ja õlidest.
- Lõigata tihendid täpselt sobivaks (soovituslikult otse lõiked, mitte 45°), vältimaks lekkeid nurkades.
- Alumine ja ülemine tihend pikk, küljetihendid alumise ja ülemise tihendi vahele

General Information:

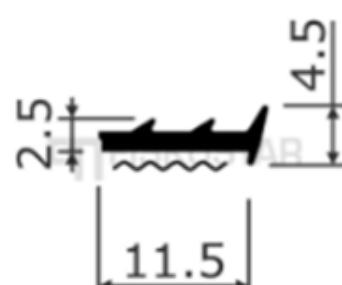
Note! Seals Fix 4111, Fix 4302, and EPDM are not suitable for fire-rated products.

External seals used:

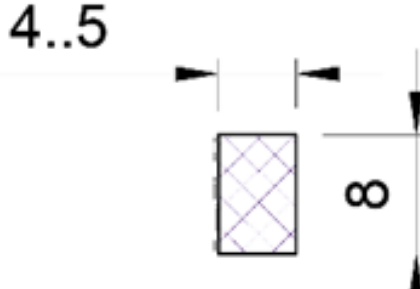
- Fix 4111 MU EPDM



- Fix 4302 MU EPDM (selection depends on glass thickness, glazing bead, and compatibility with the internal seal).



Internal seal used: EPDM 4-5 x 8 mm:



Mastic: Sika Lastomer 710, a soft and flexible butyl mastic that must be fresh at the time of installation.

Note! Air and water tightness tests have been carried out using the installation method described in this guide; therefore, the same method must be used on site to ensure product watertightness.

Preparation:

- Check the glass dimensions and make sure the gasket is suitable.
- Make sure that the glazing channel and frame are clean and free from dust, paint residue and oil.
- Cut the gaskets to the exact required length. Straight cuts are recommended instead of 45° cuts to prevent leaks in the corners.
- The bottom and top gaskets must be continuous full-length pieces. The side gaskets must be installed between the bottom and top gaskets.

Mastiksi paigaldamine:

Tehases klaasi paigaldades:

- Mastiks panna nurkadesse vahetult enne klaasi pesasse paigaldamist.
- Mastiksi tupsud suruda ka tihendi otste alla nii, et metallraami, klaasi ja tihendi vahele tekiks veetihe kontakt.

Objektil paigaldades (klaasi paigaldab klient):

- Mastiks tuleb panna nurkadesse vahetult enne klaasi paigaldamist.
- Vältida kuivama laskmist enne klaasi asetamist, et tagada värske mastiksi nakkuvus.

NB! Mastiks ei tohi olla asendatud muu silikooniga – kasutama peab Sika Lastomer 710, mis on saadaval ka Roots.



Application of Mastic Sealant:

When glazing is carried out at the factory:

- Apply the mastic sealant in the corners immediately before placing the glass into the glazing channel.
- The mastic must also be pressed under the ends of the gaskets so that a watertight contact is formed between the metal frame, the glass and the gasket.

When glazing is carried out on site by the customer:

- The mastic sealant must be applied in the corners immediately before installing the glass.
- Do not allow the mastic to dry before the glass is placed, as fresh mastic is required to ensure proper adhesion.

NOTE! The mastic sealant must not be replaced with another type of silicone. Sika Lastomer 710 must be used. This product is also available in Sweden.

Klaasi paigaldus:

- Asetada klaas tihendipesasse, suruda ühtlaselt raamile.
- Kontrollida, et klaas suruks tihendile ühtlaselt.
- Paigaldada klaasiliistud – need peavad andma tihendile piisava surve.
- Surve sõltub klaasi paksusest, kasutatavatest tihenditest → valida õige tihend ja klaasiliist.
- Vajadusel võib fikseerida tihendi otsad kiirliimiga, et vältida lahtitulemist (probleem nõrga liimi tõttu on teada).

Kvaliteedinõuded:

- Kõik tihendite otsad (klaasinurgad) peavad olema mastiksiga tihendatud.
- Klaasitihend ei tohi olla lõigatud valesti (45° alla lõiked ei ole lubatud).
- Klaasitihend peab olema ühtlaselt survestatud ja ei tohi "ära kukkuda".
- **Klaas ei tohi loksuda peale paigaldamist.**

Vastutus:

- Kui klaasid paigaldatakse Tammeris, tehakse kõik toimingud tehases.
- Kui klaasid paigaldab klient objektil, tuleb mastiksi paigaldus arvestada paigaldustöö maksumusse ja teostada vastavalt sellele juhendile.

Glass Installation:

- Place the glass into the gasket channel and press it evenly against the frame.
- Check that the glass applies even pressure to the gasket.
- Install the glazing beads. They must provide sufficient pressure on the gasket.
- The required pressure depends on the glass thickness and the gaskets used. Therefore, the correct gasket and glazing bead must be selected.
- If necessary, the ends of the gasket may be fixed with instant adhesive to prevent them from coming loose. This issue is known to occur due to weak adhesive.

Quality Requirements:

- All gasket ends at the glass corners must be sealed with mastic sealant.
- The glass gasket must not be cut incorrectly. 45° cuts are not allowed.
- The glass gasket must be evenly compressed and must not come loose or fall out.
- **The glass must not move or rattle after installation.**

Responsibility:

- If the glass is installed at Tammer, all operations are carried out at the factory.
- If the glass is installed by the customer on site, the application of mastic sealant must be included in the installation cost and carried out according to this instruction.

Visuaalsed näited:

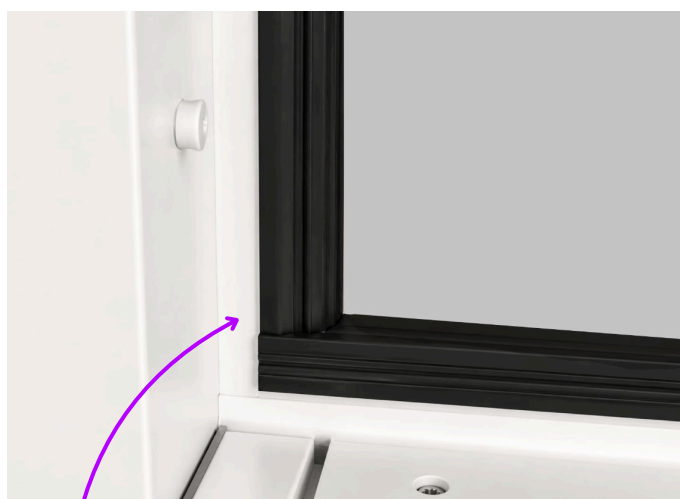


Alumise tihendi lõikepikkus ja lõikamise viis
(90 kraadine lõige)
Cutting length and cutting method of the
bottom gasket (90° cut)

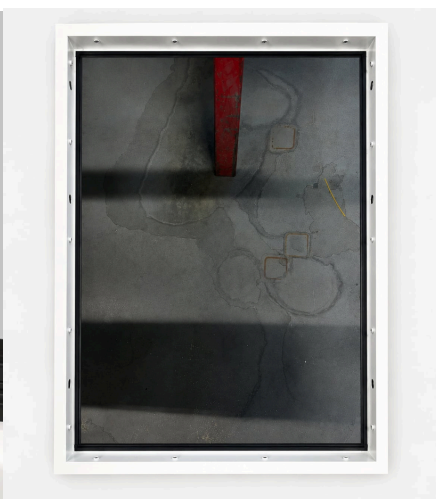
Visual Examples:



Ülemise tihendi lõikepikkus ja lõikamise viis
(90 kraadine lõige)
Cutting length and cutting method of the top
gasket (90° cut)



Külgmiste tihendite lõikamine ja paigaldus
(90 kraadine lõige)
Cutting and installation of the side gaskets
(90° cut)



Tihendid paigaldatud, pilt
enne mastiksi kasutamist
Gaskets installed, photo
before applying mastic
sealant



Nurk mastiksiga töödeldud
Corner treated with mastic
sealant

