

**Classification of Fire
 Resistance Performance
 in accordance with
 EN 13501-2:2016**

K-5045-DMT-DO

Customer	Kegro Deuren B.V. Industrieweg 25 6562 AP Groesbeek Netherlands
Compiled by	DMT GmbH & Co. KG DMT Test Laboratory for Fire Protection, Test Body for Fire Protection Hermann-Kemper-Straße 12a 49762 Lathen Germany
Number of notified body	2509
Product	Single or double leaved pivoted wooden composite door as fire protection door with and without glazing in various supporting constructions
Product designation	KegaComfort, KegaComfort dB, KegaPro BW30, KegaPro MV, KegaPro Inp. and KegaPro dB in thickness \geq 54mm
Nr. of the report for extended application	K-5045-DMT-DO
Issue number	1
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ANNEXES 1.0 TO 6.4 OF CLASSIFICATION REPORT K-5045-DMT-DO (27 PAGES)

1 Introduction

This classification report of fire resistance performance, smoke control and self-closing characteristics defines the classification assigned to a fire protection and smoke control door with designation „KegaComfort, KegaComfort dB, KegaPro BW30, KegaPro MV, KegaPro Inp. and KegaPro dB in thickness $\geq 54\text{mm}$ “, hereafter mentioned as "KegaComfort and KegaPro", in accordance with the procedures given in EN 13501-2:2016.

2 Details of classified product

2.1 General

The building component „KegaComfort and KegaPro“ belongs to the product type fire protection doors according to EN 16034.

The building component „KegaComfort and KegaPro“ is provided for the appropriation as single- and double-leaved fire protection door. It fulfills specific performance characteristics for fire resistance behaviour according to section 5 of EN 13501-2 when flamed one-sided from the opening or the closing side (section 5.2.2 and 5.2.4).

The product fulfills the requirements of the self-closing characteristics C (section 5.2.6) with the ability to close completely out of the opened position.

An exposed side is not defined, the exposed side can either be the opening side as also the closing side.

2.2 Detailed product description

The product „KegaComfort and KegaPro“ is a single and double leaved optionally glazed wooden composite door optional with glazed side panel and top panel. The building component is described completely in the test reports and the report of extended application, which are referred to in section 3.1 for verification of classification, as also the annexes 1.0 to 6.4 of this classification report.

3 Test reports / reports of extended classification and test results for verification of classification**3.1 Test reports****3.1.1 Test reports according to EN 1634-1**

No.	Name of Laboratory No. of Notified Body	Name of sponsor	Test report no. dated	Test method
F1	DMT GmbH & Co KG NB 2509	Kegro Deuren B.V.	DMT-DO-50-811 07.07.2020	EN 1634-1: 2014+A1:2018 EN 1363-1: 2020
F2	DMT GmbH & Co KG NB 2509	Kegro Deuren B.V.	DMT-DO-50-812 03.07.2020	EN 1634-1: 2014+A1:2018 EN 1363-1: 2020
F3	DMT GmbH & Co KG NB 2509	Kegro Deuren B.V.	DMT-DO-50-775 25.06.2020	EN 1634-1: 2014+A1:2018 EN 1363-1: 2012

The product standard EN 16034:2014 refers to the standards EN 1634-1 release version 2014 and EN 1363 release version 2012.

The test standard EN 1634-1 will be taken into account with its release versions of 2014 and 2018. The product standard refers to the release version of 2014, so that the differences to this version must be evaluated.

The test reports F1 to F3 were tested according to standard EN 1634-1 edition 2014+A1:2018. The changes towards the actual standard are shown in the following list (extract from the preface of the EN 1634-1:2014+A1:2018):

- a. Changes of the European foreword;
- b. Change of the field of application;
- c. Changes in section 2;
- d. Changes in section 3;
- e. Change in section 5;
- f. Change in section 6;
- g. Change in section 8;
- h. Changes in section 9;

- i. Changes in table 2;
- j. Changes of the figures 11, 12, 16, 24 and 33;
- k. Changes in annex B;
- l. Changes in the references.

This is at one side a change of terminologies and concretizations and mainly, regarding for doors in particular, changes in the required distance of thermocouples between frame/blind frame and supporting construction from 20 mm to 15 mm.

None of the differences between the mentioned versions of the EN 1634-1 test standard was relevant for the performance of the tests documented in the test reports F1 to F3 so it can be estimated that the results, which are reached in this tests, also would have been achieved with a test according to standard edition 2014. So the test reports F1 to F3 may be used for this classification report.

The test standard EN 1363-1 will be taken into account with its release versions of 2012 and 2020. The product standard refers to the release version of 2012, so that the differences to this version must be evaluated.

The specimen described in test reports F1 and F2 were tested according to standard EN 1363-1 edition 2020. In addition to a number of editorial changes and clarifications regarding the evaluation of hot gases escaping during fire testing for the insulation criteria, the main changes in this version affect sustainability criterion "Loadbearing capacity" which is not relevant for this classification report.

None of the differences between the mentioned versions of the EN 1363-1 test standard were relevant for the performance of the test documented in the test reports F1 and F2 so it can be estimated that the results, which are reached in this tests, also would have been achieved with a test according to standard edition 2012. Therefore, the test reports F1 and F2 will be used for this classification report.

According to EN 15269-3, section 4.4.3 negative test reports can be considered as followed:

„Where it has been possible to identify specific parameter failures, the extended application for all other construction parameter variations can be based on the performance achieved after isolating the premature failure(s).“

In the test described in the report F3 the premature failure of the integrity "E" was caused by the failure of the Letterplate "AMI EP 975" in combination with the "Sauerland 11VL chipboard"

inlay after 26 test minutes. If the failure of the Letterplate is not taken into account, the door would have received the criteria integrity with radiation insulation "EW" up to test minute 32. Therefore, the test report is considered for the determination of the classification regarding all construction parameters except the Letterplate in combination with the multilayer inlay "Sauerland 11VL chipboard" for criteria "EW" for 32 minutes.

3.1.2 Test results of test reports according to EN 1634-1

Test report number Brief description of the test specimen	Parameter	results[min]
(F1) DMT-DO-50-811 Single-leaved glazed wooden composite door in wooden block frame with a thickness of 54 mm, with an open clearance (W x H) of 1062 mm x 2487 mm, with top light and frame outside dimensions (W x H) of 1194 mm x 2585 mm. Exposed side opening side / hinges side	Integrity (cotton pad)	34
	Integrity (gap gauge)	34
	Integrity (sustained flaming)	34
	Insulation I ₁	13
	Insulation I ₂	13
	Radiation	34
(F2) DMT-DO-50-812 Double-leaved glazed wooden composite door in wooden block frame with a thickness of 54 mm, with an open clearance (W x H) of 2012 mm x 2400 mm, with top light and frame outside dimensions (W x H) of 2112 mm x 2526 mm. Exposed side opening side / hinges side	Integrity (cotton pad)	32
	Integrity (gap gauge)	32
	Integrity (sustained flaming)	34
	Insulation I ₁	5
	Insulation I ₂	5
	Radiation	32
(F3) DMT-DO-50-775 Single-leaved glazed wooden composite door in wooden block frame with a thickness of 54 mm, with an open clearance (W x H) of 1050 mm x 2400 mm, with side screen and top light and frame outside dimensions (W x H) of 1166 mm x 2518 mm. Exposed side opening side / hinges side	Integrity (cotton pad)	32
	Integrity (gap gauge)	26
	Integrity (sustained flaming)	32
	Insulation I ₁	15
	Insulation I ₂	15
	Radiation	26

3.2 Reports of extended application

Nr.	Test report no. dated	Name of Test Body Notified Body	Name of sponsor	Standard of extended application
E1	E-5031-DMT-DO 26.10.2020	DMT GmbH & Co. KG 2509	Kegro Deuren B.V.	EN 15269-3:2012

4 Classification and field of application

4.1 Reference of classification

This classification was carried out in accordance with EN 13501-2:2016, section 7.5.5 and 7.5.6.

4.2 Classification

The fire protection door of type „KegaComfort and KegaPro“ of Kegro Deuren B.V., may be classified according to the following combinations of performance parameters and classes as appropriate.

R	E	I	W		t	t	-	M	S	C	IncSlow	sn	ef	r
---	---	---	---	--	---	---	---	---	---	---	---------	----	----	---

Fire resistance classification:

EW 30 – C

4.3 Field of application

This classification is valid for the following practical application (final application):

EN 16034

The scope of the classified component with direct and extended field of application is given in the test reports, the reports of extended application and the annexes 1.0 to 6.4 of this classification report.

5 Limitations

This classification document does not represent type approval or certification of the product.

Lathen, 18.01.2021



Kruse
(deputy head of test lab)



DMT-Prüfstelle für Brandschutz
DMT



Mertens
(case worker)

Annotations

Documents without stamp and sign have no validity. The cover page and the sign page of this document are signed with the stamp.

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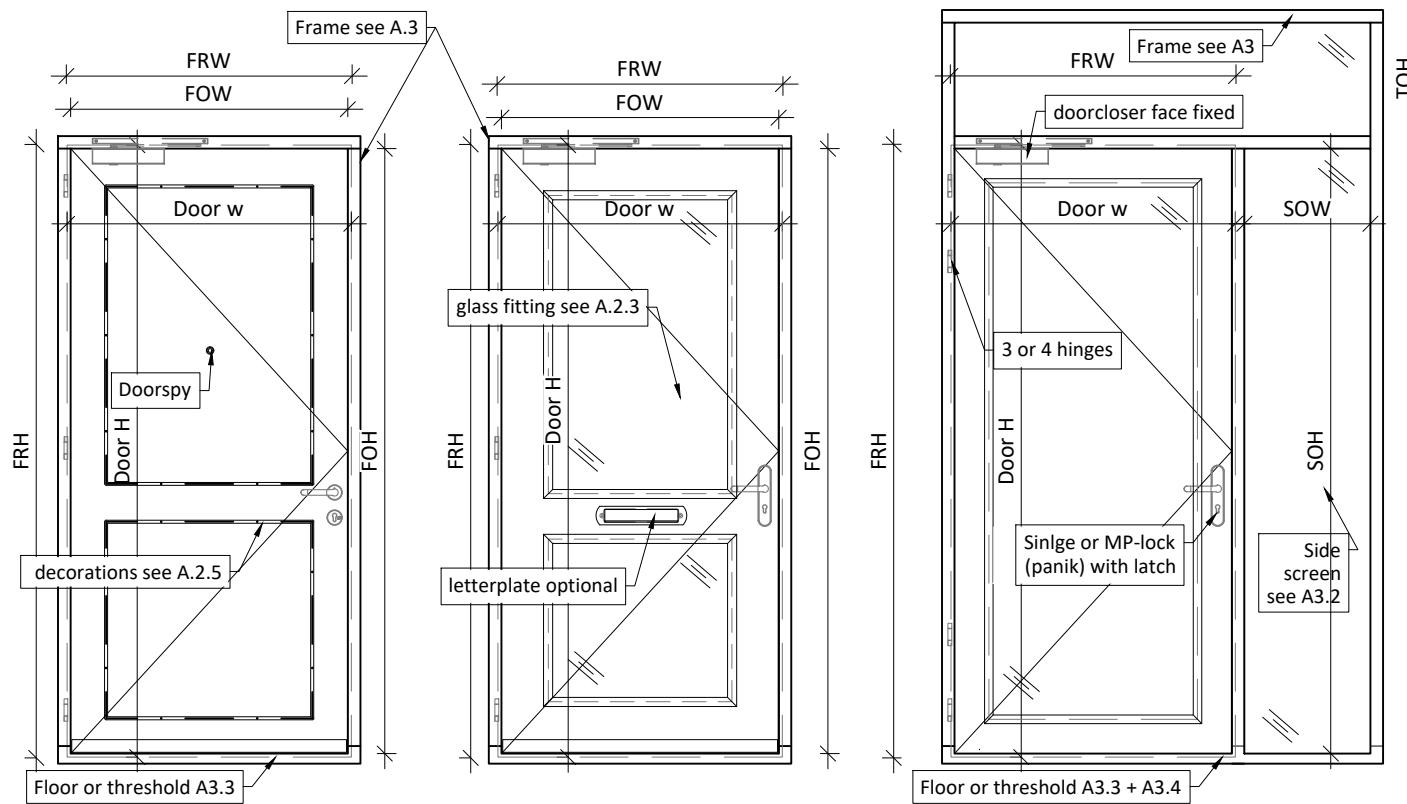
This classification report was delivered with 2 copies.

A publication requires the written approval of DMT GmbH & Co. KG, Test Body for Fire Protection.

Translations of this classification report have to include the annotation „Translation of the german original version not proven by DMT GmbH & Co. KG, Test Body for Fire Protection“. In cases of doubt the german original version of the report is valid.

1.0 Overview of doorset configuration and sizes

SINGLE LEAF DOORSET IN TIMBER FRAME



Door with mouldings in 3 or 4 sides simple timber frame.
(see annex 3)

Door with (multiple) glass openings in 3 or 4 sides simple timber frame (see annex 3)

Door with glass in 3 or 4 sides timber frame with side- and/or overhead screen(s) (seen annex 3)

Allowable size for single door sets

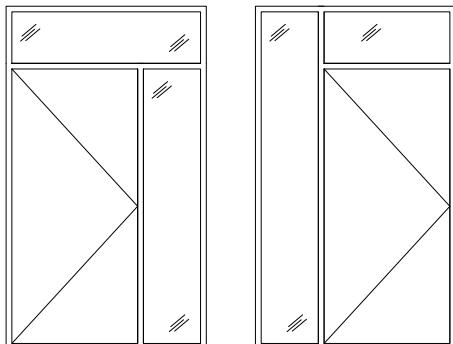
	Width (mm)	Height (mm)	Area (m ²)
Doorleaf*	≤ 1134	≤ 2605	≤ 2,871
Frame opening size	≤ 1109	≤ 2597	≤ 2,757
Frame rebate size	≤ 1139	≤ 2612	≤ 2,897
Toplight opening size	≤ 1600	≤ 326	≤ 0,648
Sidescreen opening size	≤ 441	≤ 2480	≤ 1,056

*: Doorleaf size depending on doorleaf type. See annex 2 for doorleaf types and models.

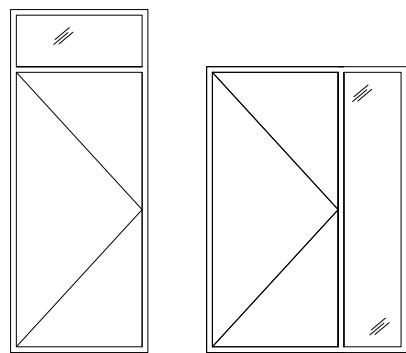
Doorleaf type th. ≥ 54mm	Width (mm)	Height (mm)	Area (m ²)	Glass openings
KegaPro MV / KegaPro BW30**	≤ 1134	≤ 2605	≤ 2,871	optional
KegaPro Inp **	≤ 1134	≤ 2605	≤ 2,871	optional
KegaComfort **	≤ 1134	≤ 2605	≤ 2,871	optional
KegaPro dB **	≤ 1123	≤ 2488	≤ 2,700	no
KegaComfort dB **	≤ 1123	≤ 2488	≤ 2,700	no

** Product name can be extended with "Excellent"; "Mahonie"; "HPL"; "Eiken"; "GD"; "HDF". Indication the topfacing version.

Note, all illustrations are indicative examples.
See annex 2 for doorleaf types, glass and louvre openings, and decorative moulding options.



additional configurations,
sizes accordingly



FRH: Frame rebate height
FOH: Frame opening height
TOH: Top light opening height
SOH: Sidescreen opening height
FRW: Frame rebate width
FOW: Frame opening width
TOW: Top light opening width
SOW: Sidescreen opening width



Overview single doorsets

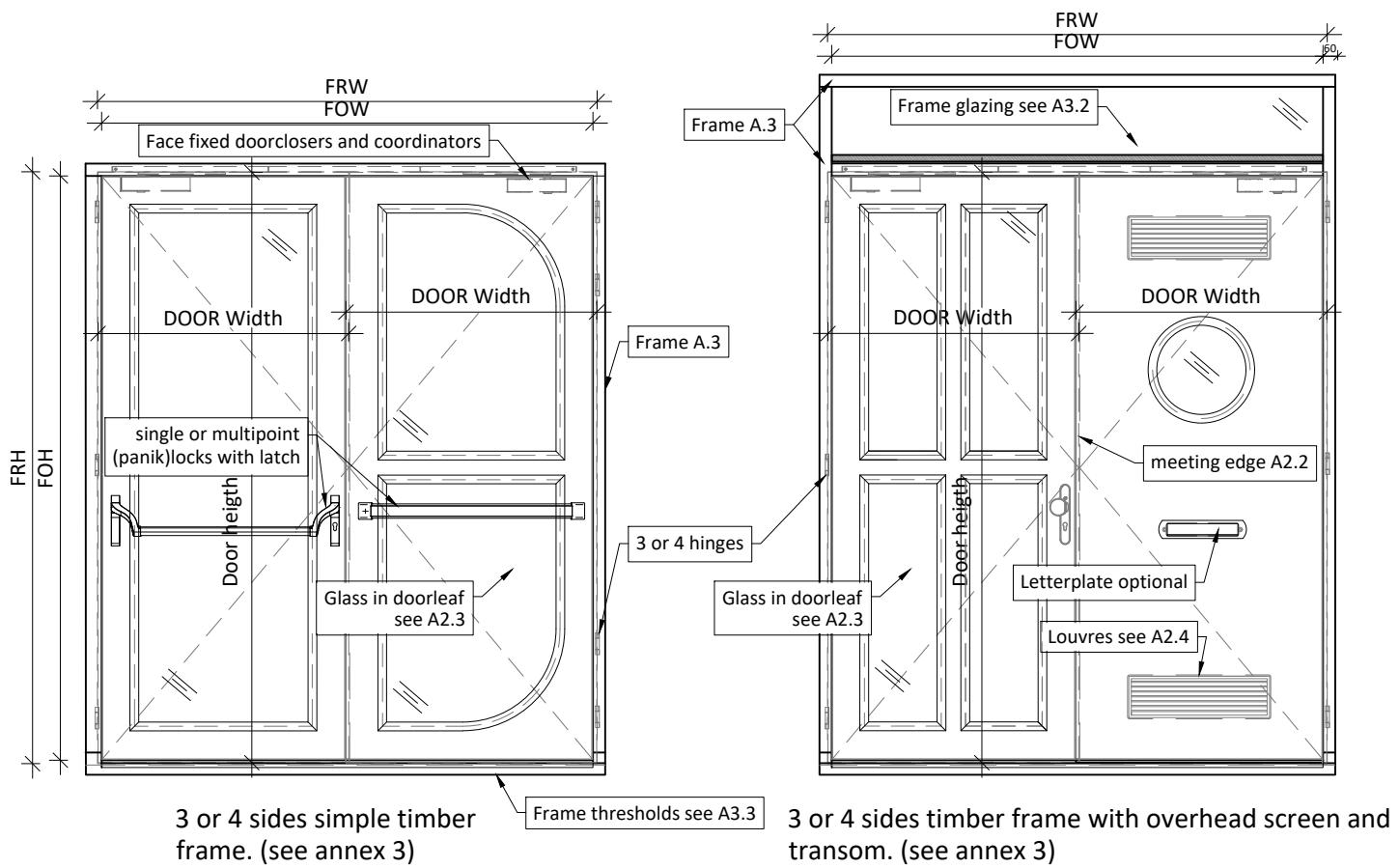
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annex 1.0

report no.
K-5045-DMT-DO

1.1 Overview of doorset configuration and sizes

DOUBLE LEAF DOORSET IN TMBER FRAME



Allowable size for double doorsets

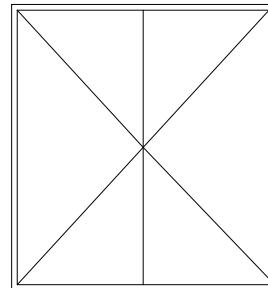
	Width (mm)	Height (mm)	Area (m ²)
Doorleaf (active)	≤ 1124	≤ 2461	≤ 2,734
Doorleaf if both equal	≤ 1048	≤ 2461	≤ 2,734
Frame opening size	≤ 2057	≤ 2453	≤ 4,935
Frame rebate size	≤ 2087	≤ 2468	≤ 5,071
Toplight opening size	≤ 2057	≤ 322	≤ 0,648

*: Doorleaf size depending on doorleaf type. See annex 2 for doorleaf types and models.

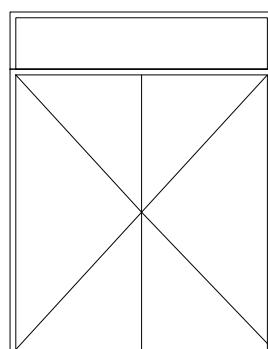
Doorleaf type th. ≥ 54mm	Width (mm)	Height (mm)	Area (m ²)	Glass openings
KegaPro MV / KegaPro BW30**	≤ 1124	≤ 2461	≤ 2,734	optional
KegaPro Inp **	≤ 1124	≤ 2461	≤ 2,734	optional
KegaComfort **	≤ 1124	≤ 2461	≤ 2,734	optional

**: Doorleaf name can be extended with "Excellent"; "Mahonie"; "HPL"; "Eiken"; "GD"; "HDF", indicating the topfacing version.

Allowed configurations



Double leave single swing
Both sides EW30



Double leave single swing with
overhead screen. Both sides EW30

FRH: Frame rebate height
FOH: Frame opening height
TOH: Top light opening height
SOH: Sidescreen opening height
FRW: Frame rebate width
FOW: Frame opening width
TOW: Top light opening width
SOW: Sidescreen opening width

Note: All illustrations are indicative examples. See annex 2 for doorleaf types, glass and louvre openings and decorative moulding options.



Double doorset overview

annex 1.1

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K-5045-DMT-DO

1.2 Basic principle option horizontal sections of single doorssets with or without sidescreen



Details see Annex:

2. Doorleaf construction

- 2.1. edge profiles and rebates
- 2.2. meeting edge double doors
- 2.3. glass fitting
- 2.4. louvre fitting
- 2.5. mouldings
- 2.6. kick plates

3. Frame construction

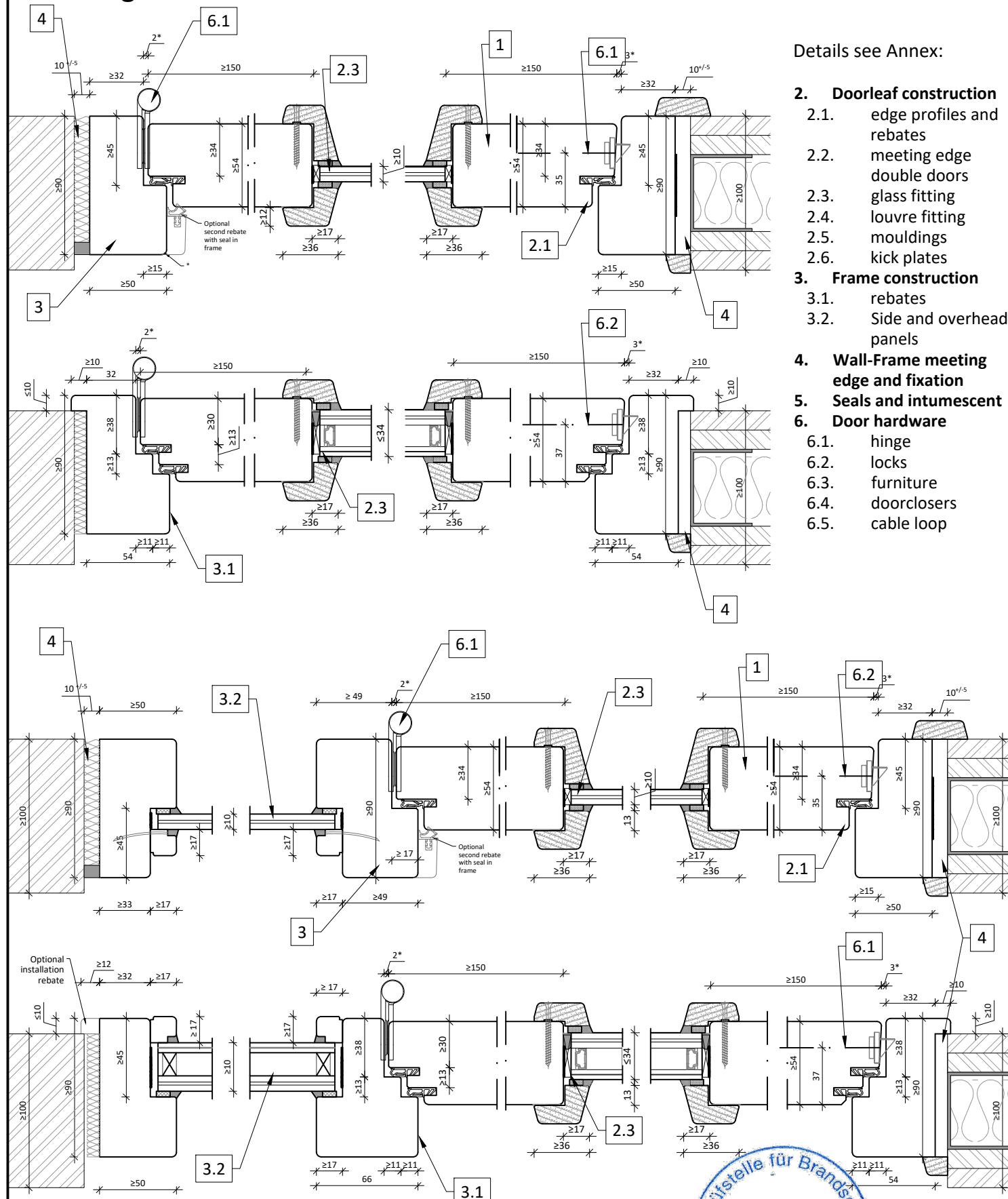
- 3.1. rebates
- 3.2. side and overhead panels

4. Wall-Frame meeting edge and fixation

5. Seals and intumescent

6. Door hardware

- 6.1. hinge
- 6.2. locks
- 6.3. furniture
- 6.4. door closers
- 6.5. cable loop



*Gap size

	nominal mm	maximum mm
Hinge side edge	2	≤ 5
Lock side edge	3	$\leq 6,0$

Horizontal section single doorssets

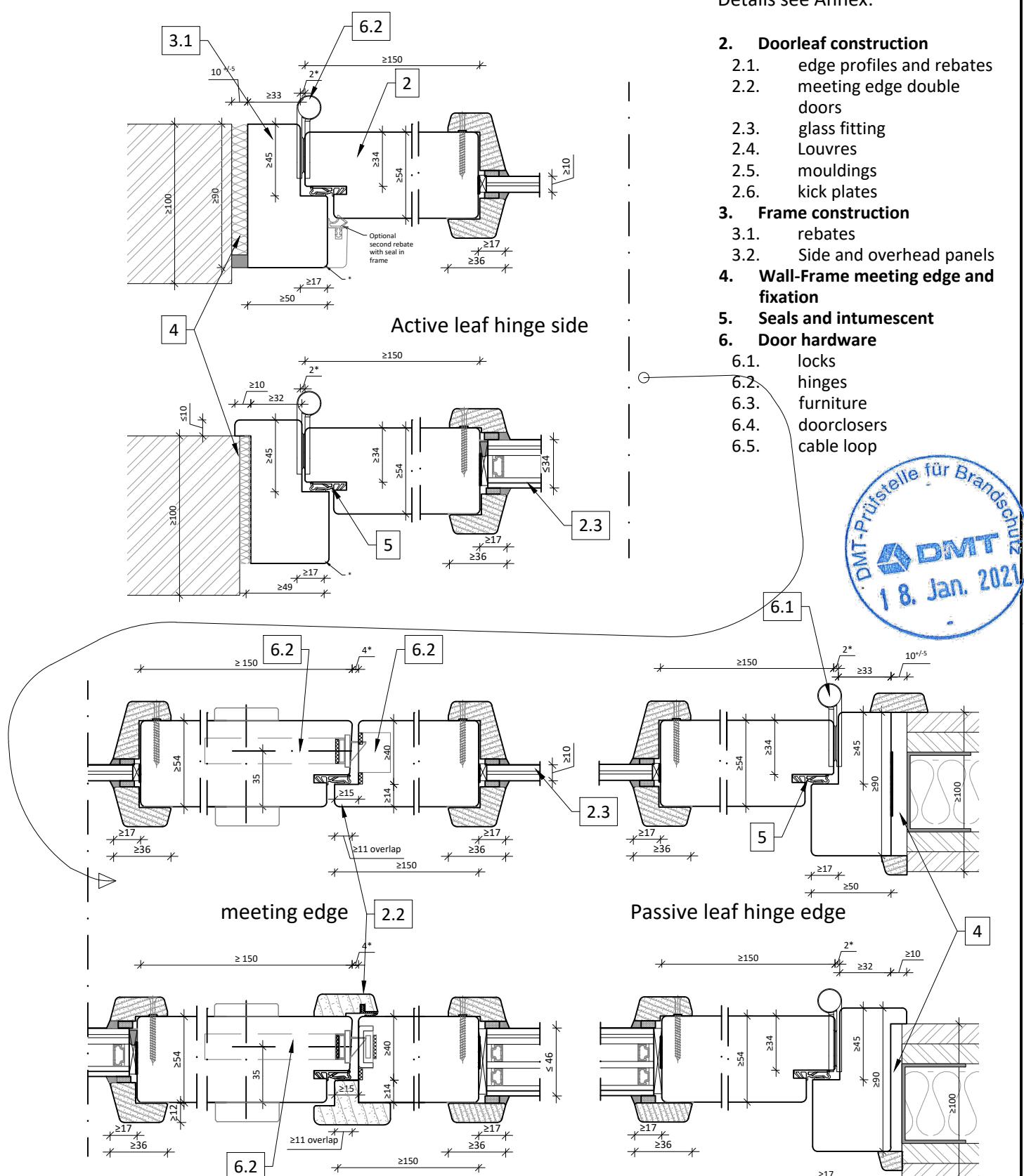
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annex 1.2

report no.
K-5045-DMT-DO

1.3 Basic principle horizontal sections of double doorssets

Details see Annex:



*Gap size	nominal mm	maximum mm
Hinge side edge	2	≤ 5
Lock side edge	3	≤ 6,0
Meeting style (middle)	4	≤ 6,5

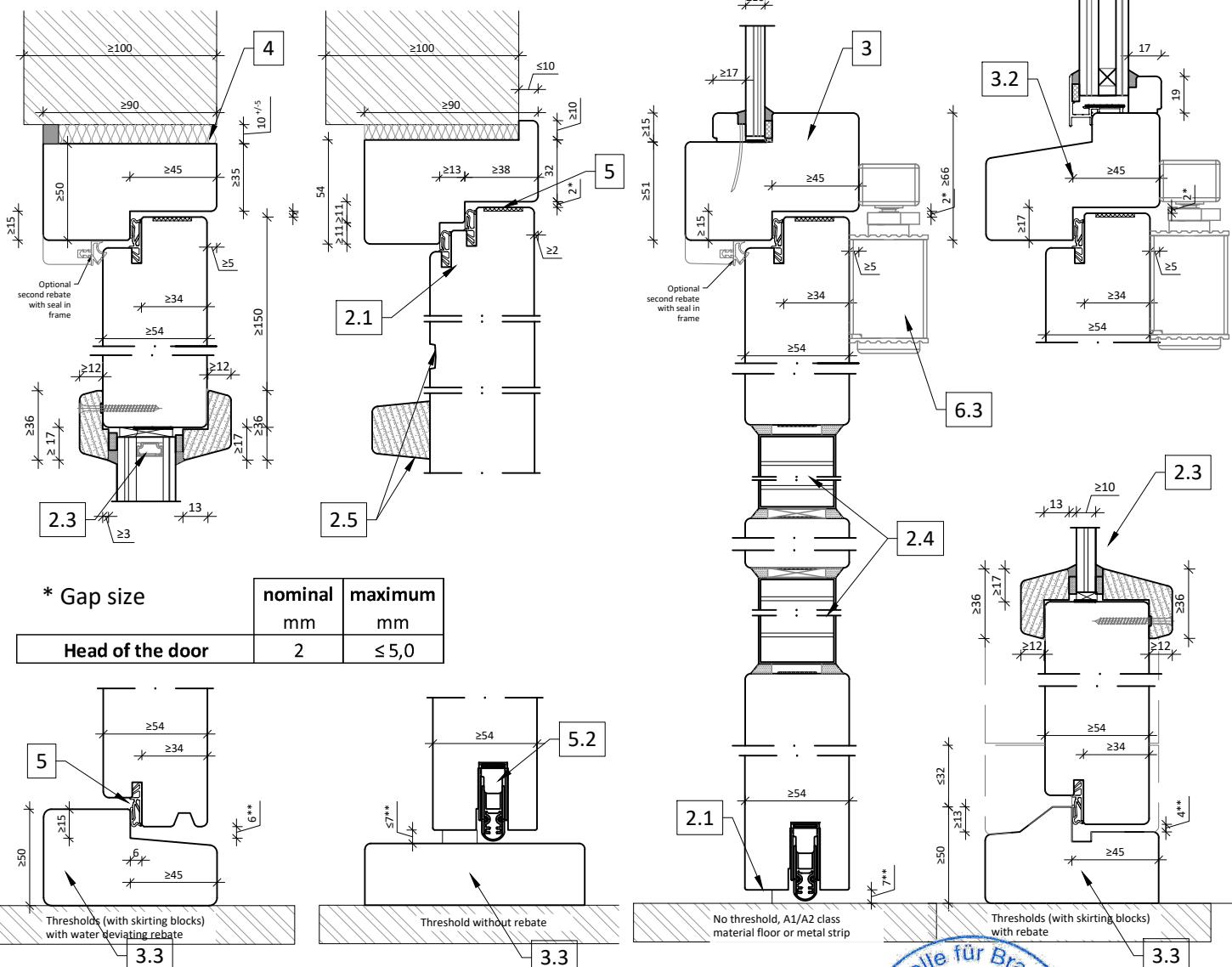
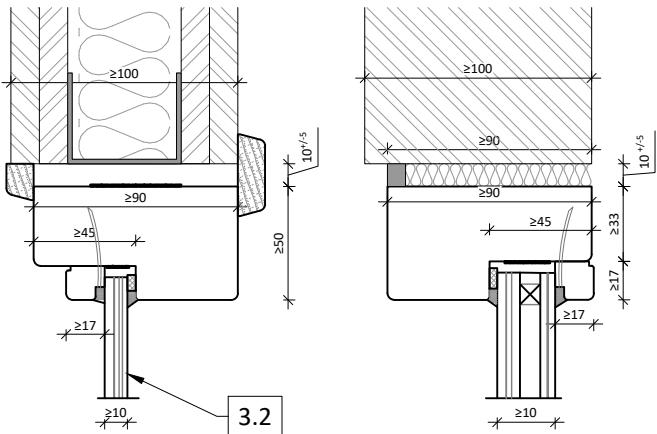
Horizontal section double doorsets

1.4 Basic principle vertical sections of doorssets with or without topscreen



Details see Annex:

- 2. Doorleaf construction**
 - 2.1. edge profiles and rebates
 - 2.2. meeting edge panel and double door
 - 2.3. glass fitting
 - 2.4. louvres
 - 2.5. mouldings and decoration
 - 2.6. kick plates
 - 3. Frame construction**
 - 3.1. rebates
 - 3.2. Side and overhead panels
 - 3.3. Thresholds
 - 4. Wall-Frame meeting edge and fixation**
 - 4.1. meeting edge details
 - 5. Seals and intumescent**
 - 6. Door hardware**
 - 6.1. hinges
 - 6.2. locks
 - 6.3. door closers
 - 6.4. furniture



** Gap size	nominal mm	maximum mm
Bottom no threshold/no rebate with dropseal	7	≤ 12,0
Bottom threshold with rebate	4	≤ 8,0



Vertical section doorset

1.5 Basic principle vertical sections of sidescreens with or without transom



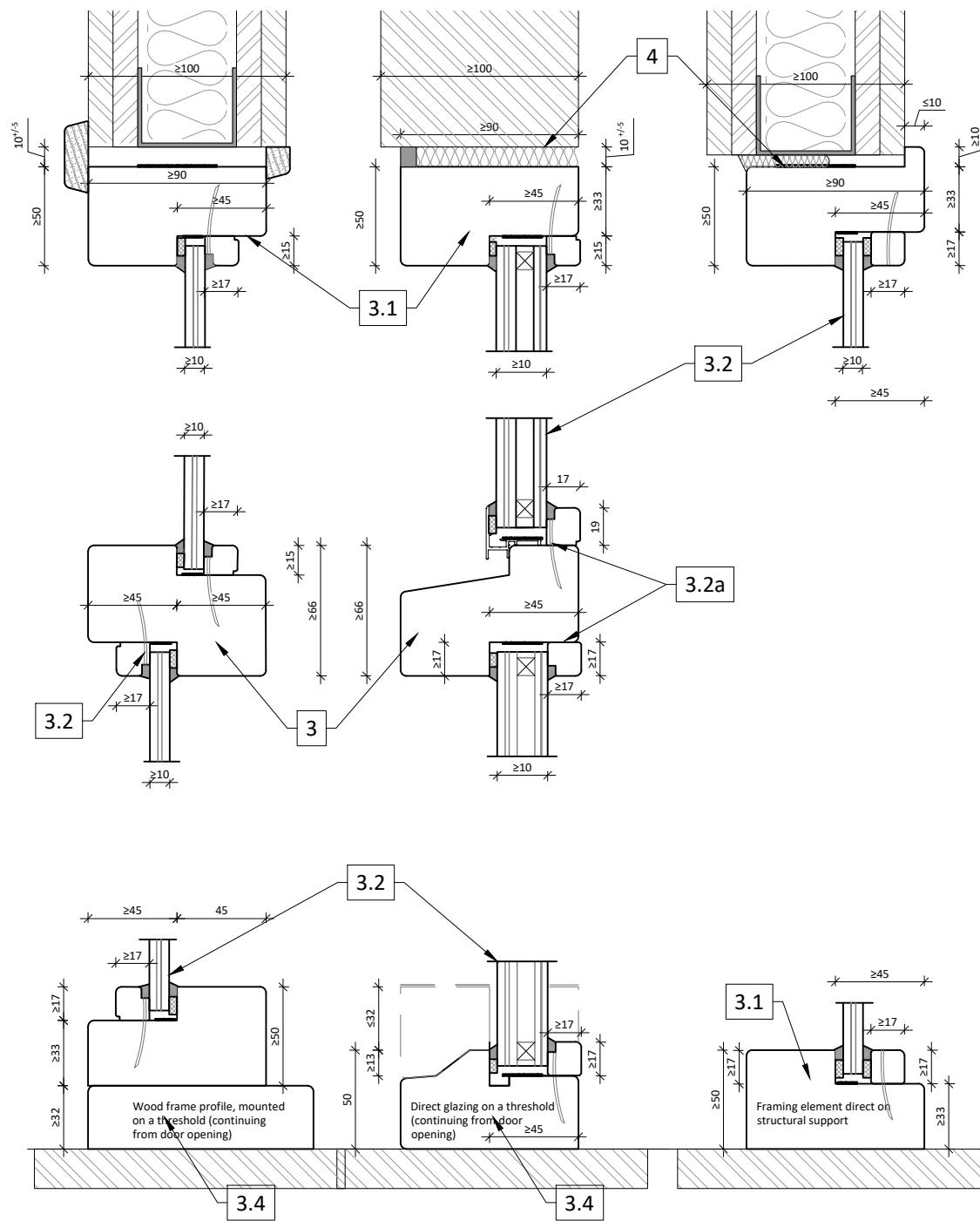
Details see Annex:

3. Frame construction

- 3.1. rebates
- 3.2. side and overhead panels
- 3.2a: details glass fitting
- 3.3. thresholds
- 3.4. sidescreen thresholds

4. Wall-Frame meeting edge and fixation

- 4.1. Detail frame to wall meeting edge



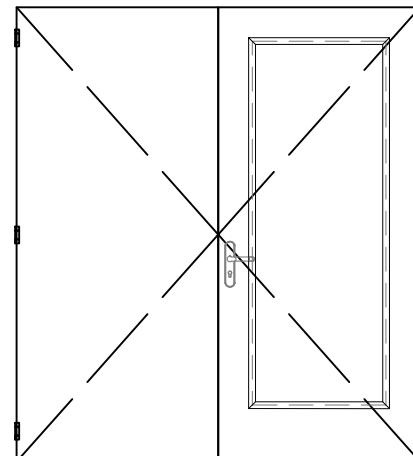
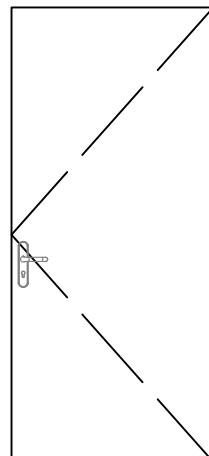
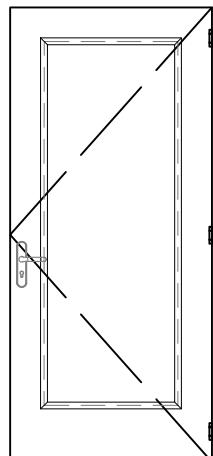
Vertical section sidescreen

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annex 1.5

report no.
K-5045-DMT-DO

2 - Doorleaf construction



Doorleaf	KegaPro BW30 / KegaPro MV KegaPro Inp. KegaComfort	KegaPro dB KegaComfort dB	KegaPro BW30 / KegaPro MV KegaPro Inp. KegaComfort
Doorcore	Fire door wooden, or wood based core	Multilayer sound insulating core	Fire door wooden, or wood based core
Surface options	HDF; Veneer; HPL; Excellent	HDF; Veneer; HPL; Excellent	HDF; Veneer; HPL; Excellent
Minimum thickness	54mm	54mm	54mm
Maximum leave size *	$\leq 1134 \times \leq 2605$ mm surface $\leq 2,871$ m ²	$\leq 1123 \times \leq 2488$ mm surface $\leq 2,700$ m ²	$\leq 1124 \times \leq 2,461$ mm surface $\leq 2,734$ m ²
Edge profile	Plain with single or double rebate, according annex 2.1	Plain with single or double rebate, according annex 2.1	Plain with single or double rebate, according annex 2.1
Meeting profile double doors	-	-	With or without astragal, rebate >15x40mm, according annex 2.2
Glass	Yes, optionally see annex 2.3	No, not allowed	Yes, optionally see annex 2.3
Louvres	Yes, optionally see annex 2.4	No, not allowed	Yes, optionally see annex 2.4
Decorative mouldings	Grooves, face fixed panels and beats up to 25% of leaf surface see annex 2.5	Grooves, face fixed panels and beats up to 25% of leaf surface see annex 2.5	Grooves, face fixed panels and beats up to 25% of leaf surface see annex 2.5
Kickplates	Optional, see annex 2.6	Optional, see annex 2.6	Optional, see annex 2.6

* see Annex 1.0 and 1.1 for additional doorleaf size information.



Doorleaf construction

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annex 2.0

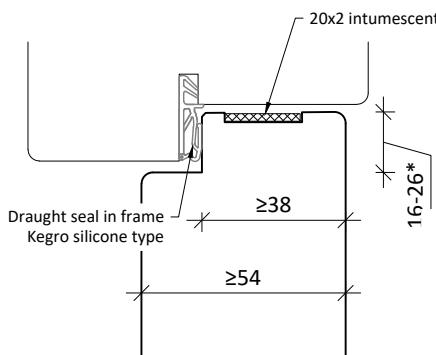
report no.
K-5045-DMT-DO

2.1 Profiles for Door-Frame meeting edge rebate

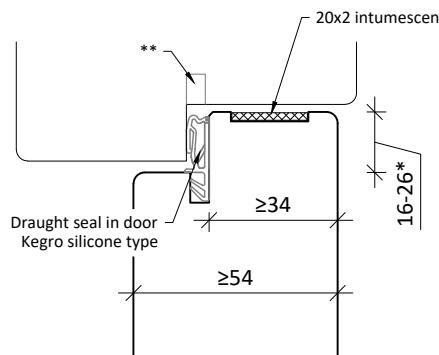


for corresponding doorframe see annex 3.1

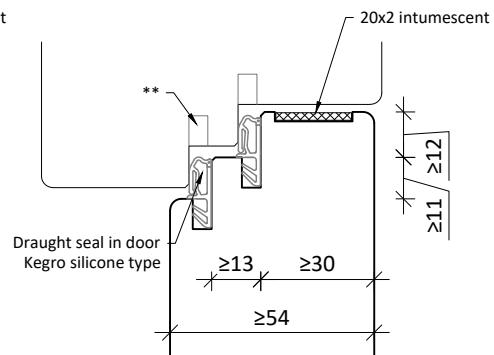
Head of door



Plain edge inner rebate
for seal in frame
(NL: Verjonding sponning)

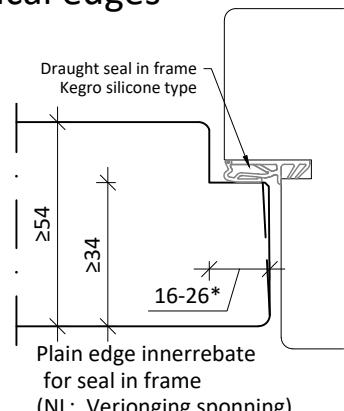


Plain edge with inner rebate
integrated seal
(NL: Kaderprofilering)

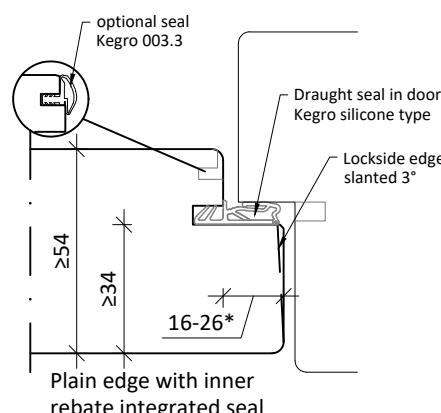


Double rebate plain edge,
integrated seals (optionally
seals in frame)
(NL: Dubbele kaderprofilering)

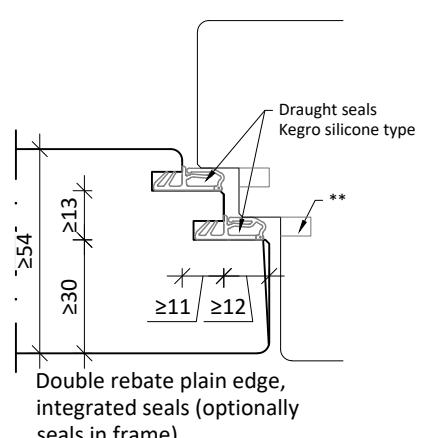
Vertical edges



Plain edge inner rebate
for seal in frame
(NL: Verjonding sponning)

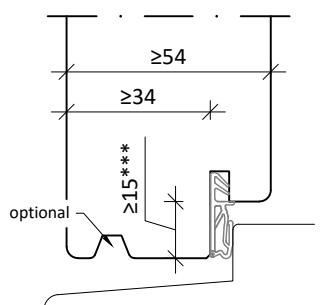


Plain edge with inner
rebate integrated seal
(NL: Kaderprofilering)

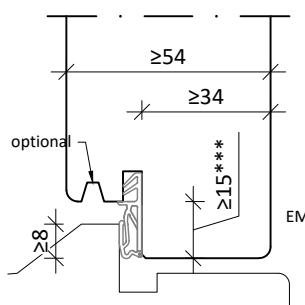


Double rebate plain edge,
integrated seals (optionally
seals in frame)
(NL: Dubbele kaderprofilering)

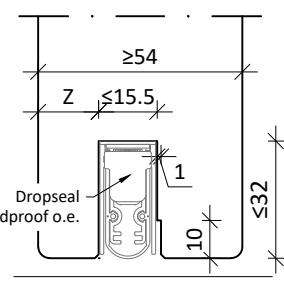
Bottom edges



Plain edge with inner
rebate integrated seal incl.
(NL: Kaderprofilering met
waterhol optioneel)



Plain edge with inner rebate,
integrated seal.
(NL: Kaderprofilering,
optioneel met waterholletje)



Plain with notch for
threshold dropseal
(NL: vlak met valdorpel)

for all edges:
optionally lippings hardwood
 $\geq 550\text{kg/m}^3$ in thickness
3-12mm can be added.

*: width of rebate to be in relation to frame rebate. Frame rebate +1mm is door rebate.

**: notch for smoke/draught seal (5.01-5.08) optionally omitted if the seal is to be incorporated in the frame

***: width of rebate underside of door to be in relation to threshold rebate. Door rebate - threshold rebate = ≤ 3



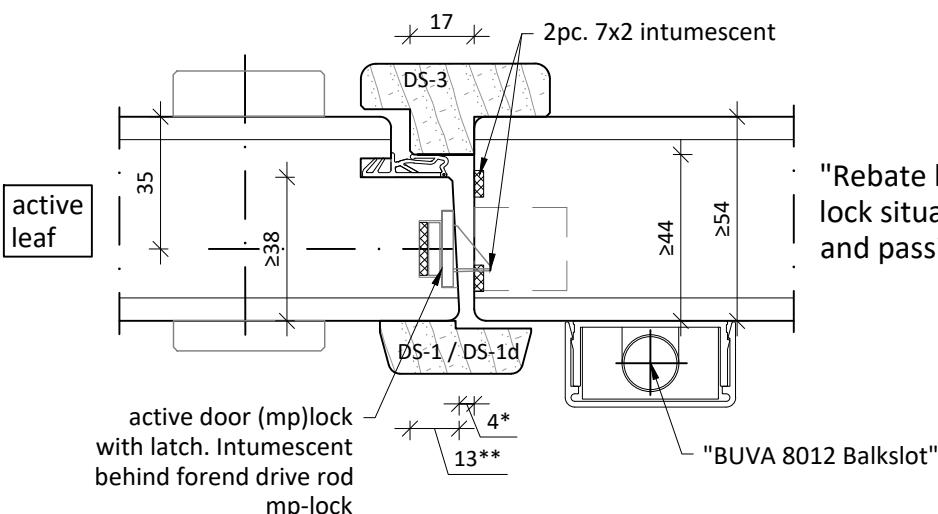
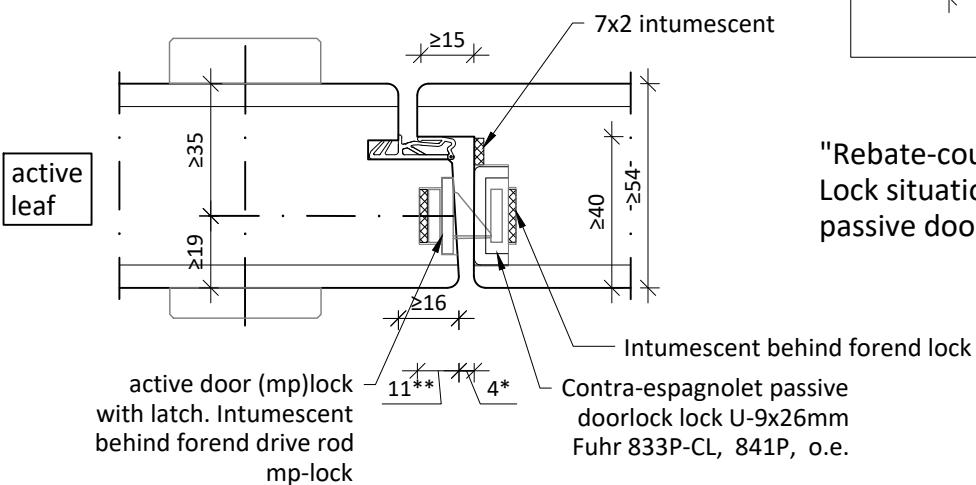
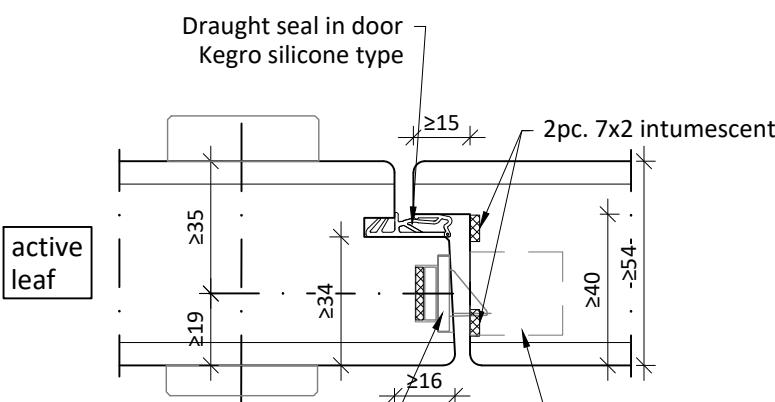
Door profiles and rebates

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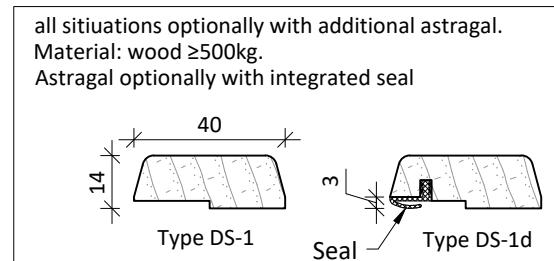
annex 2.1

report no.
K-5045-DMT-DO

2.2 Profiles for double doorset meeting edge 54mm doors



"Rebate - counter rebate situation"
lock situation passive doorleaf with strikers and (automatic) flushbolts.



"Rebate-counter rebate situation"
Lock situation with U-form faceplate lock for passive doors.

*: nominal gap, allowed deviation max. 6,5 mm / min. 2 mm
**: effective overlap active on passive doorleaf



Double door meeting edge options

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Plant for Product Safety
Test Body for Fire Protection

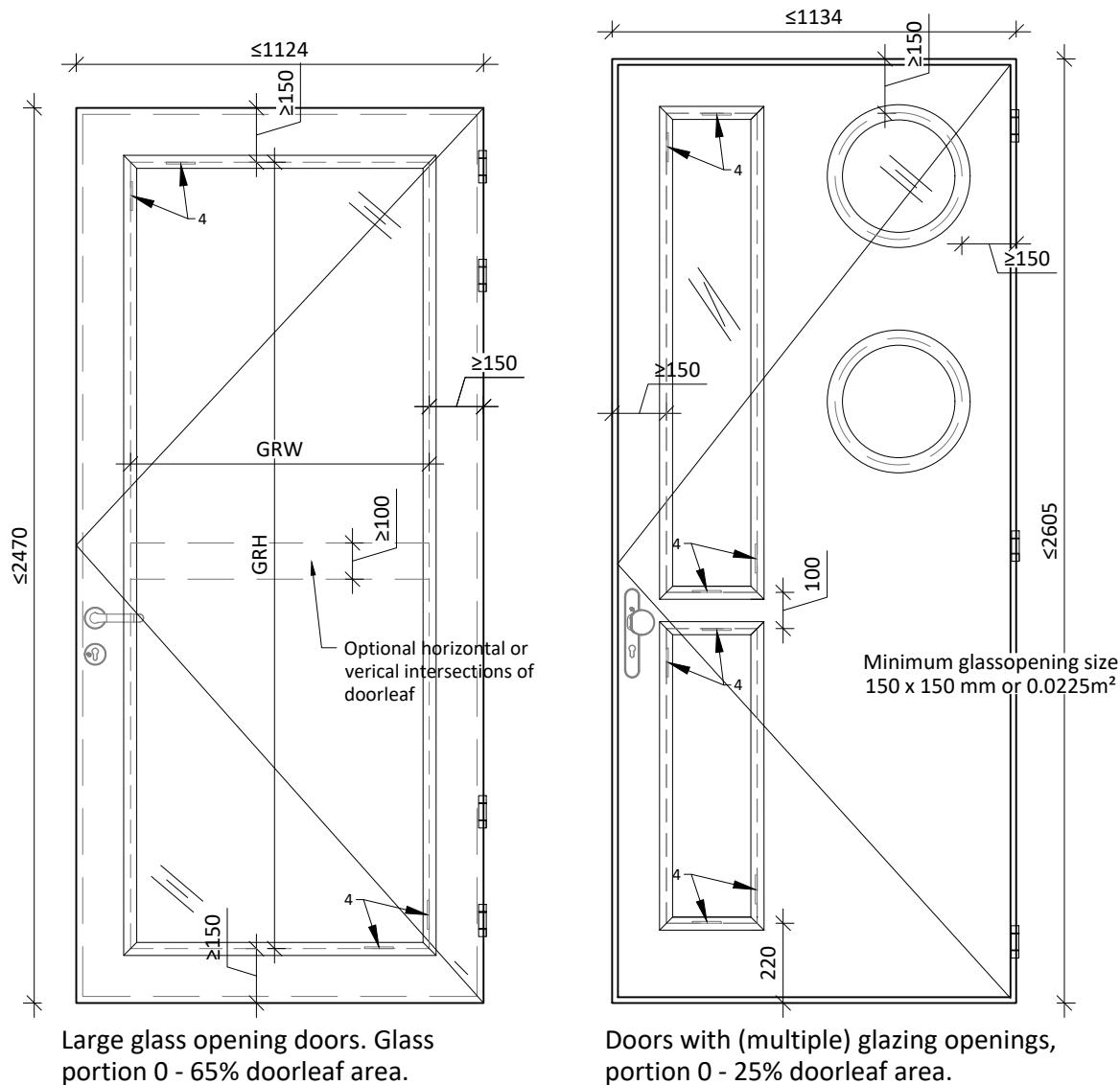
annex 2.2

report no.
K-5045-DMT-DO

2.3 Glazing and opaque panel fitting



Doorleaf type KegaPro Inp, KegaComfort, KegaPro MV, KegaPro BW30



Single squared glass opening or multiple glazings fitted possible.

Maximum sizes and glass types see table below

Minimum size 150 x 150 mm or 0.0225m² area

Glass fitting detail see annex 2.3a

Glastype	type**	th. (mm)	width (mm)	height (mm)	surface (m ²)
PyroDur plus 30-106	SGU	10	≤ 808	≤ 2160	≤ 1,706
PyroDur plus 30-186/ 30-176	DGU	23 - 33			
PyroDur 30-203 / 30-200	SGU	11 / 14			
PyroDur 30-283 / 30-273 / 30-383 / 30-373	DGU	24 - 34			
PyroDur 30-283 / 30-273 / 30-383 / 30-373	TGU	38 - 46*			

*: only in glassfitting system "Unrebated fixed glass bead" see Annex 2.3a

**: SGU = single glass unit

DGU = double glass unit

TGU = triple glass unit

Index:

GRW: glazing rebate width (leaf cutout size)

GOW: glazing opening width

GRH: glazing rebate height (leaf cutout size)

GOH: glazing opening height

4. Glazing setting block position, see 2.3a



doorleaf glazing overview

annex 2.3

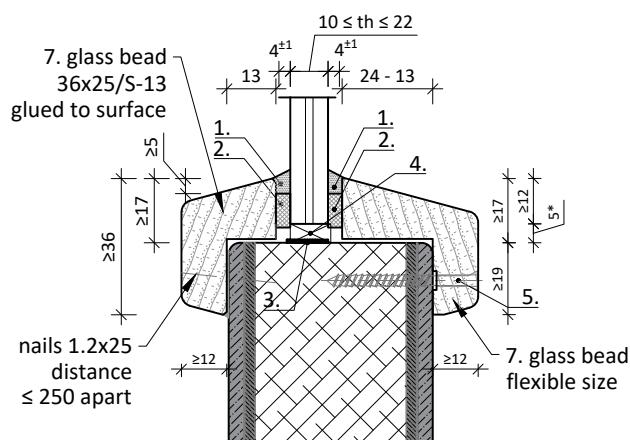
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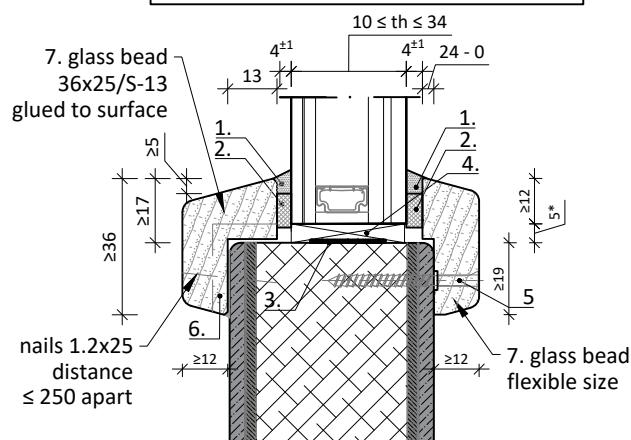
2.3a Glass fitting in doorleaf



With rebated fixed glass bead :



Single glass option
Fire exposition from both sides

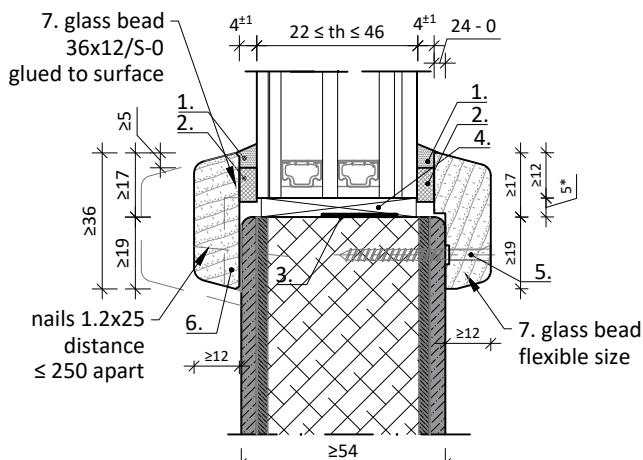
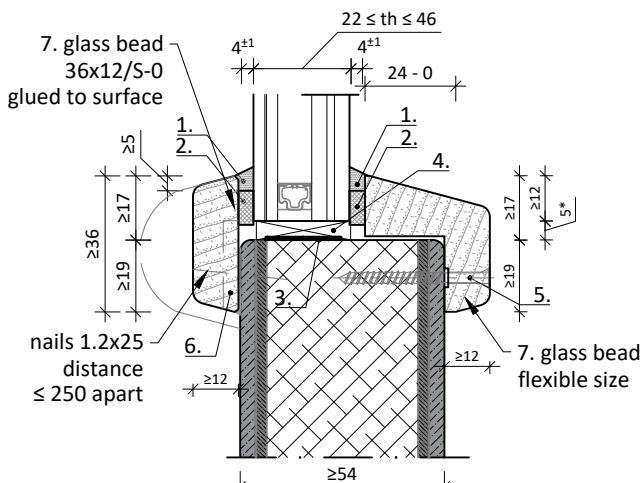


Optional glass bead screw fixed on both sides.

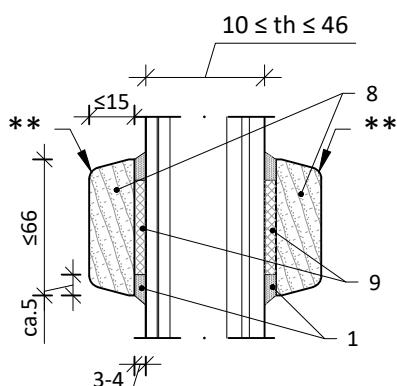
Insulation glass option

With unrebat ed fixed glass bead :

Glued -on glass bead optionally as enlarged timber moulding



Glued on design glazing mouldings and bars:



**: radius, or design moulding optional



Allowed glass types and sizes see Annex 2.3

Materials:

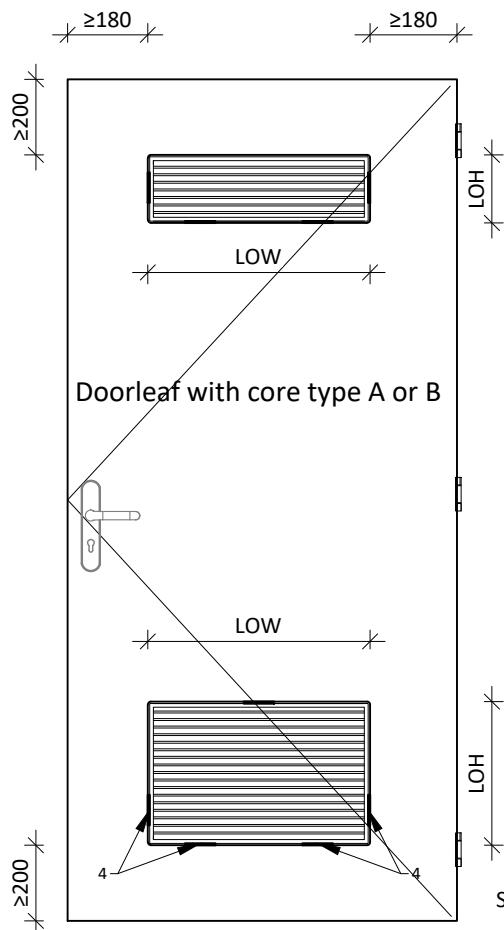
1. Glazing sealant silicon based o.e.
2. Ceramic backing size $4^{+/-}1 \times \geq 9\text{mm}$
3. Intumescent 0.8x10 (single glass) or 0.8x20 (for insulated glass)
4. Setting blocks A2 material
5. Glass bead screw Ø3.5x40 distance $50^{+/-}10\text{mm}$ from corner and $\leq 250\text{mm}$ apart.
6. Optionally ventilation ducts Ø40x5mm, 60mm from glass corner, for exterior doors only
7. Glass bead hardwood $\geq 550\text{kg/m}^3$
8. Double sided PE cellular tape

* glass edge to door rebate gap, resulting glass effective rebate depth $\geq 12\text{mm}$

doorleaf glass fitting detail

annex 2.3a

2.4 Louvres openings



Max 2 openings per doorleaf.
In single or double doorssets

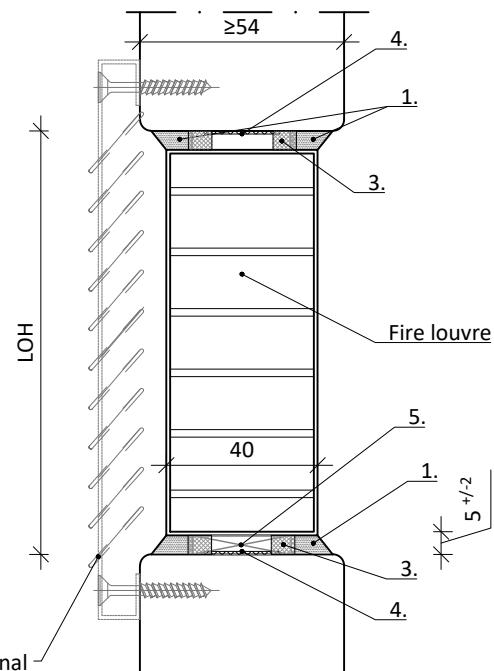
Allowed type and sizes of cut-out

Louvre type	LOW		LOH	
	min (mm)	max (mm)	min (mm)	max (mm)
FSS FBU-40	250	590	95	400

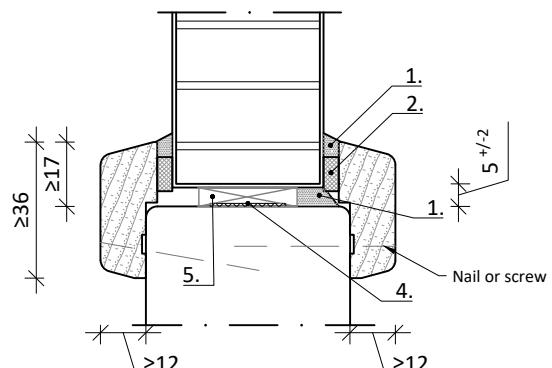
Louvres 10mm smaller than cut-out



Vertical and horzintal section of louvre fitting identical



fixation with setting blocks and glazing sealant



Optionally fixation with wooden glassbeads

Materials:

1. Glazing sealant silicon based o.e.
2. PE glazingfoam backing 4x9mm
3. PU backingfoam Ø12mm
4. Intumescent 0.8x20 4-sides
5. Setting blocks A2 material

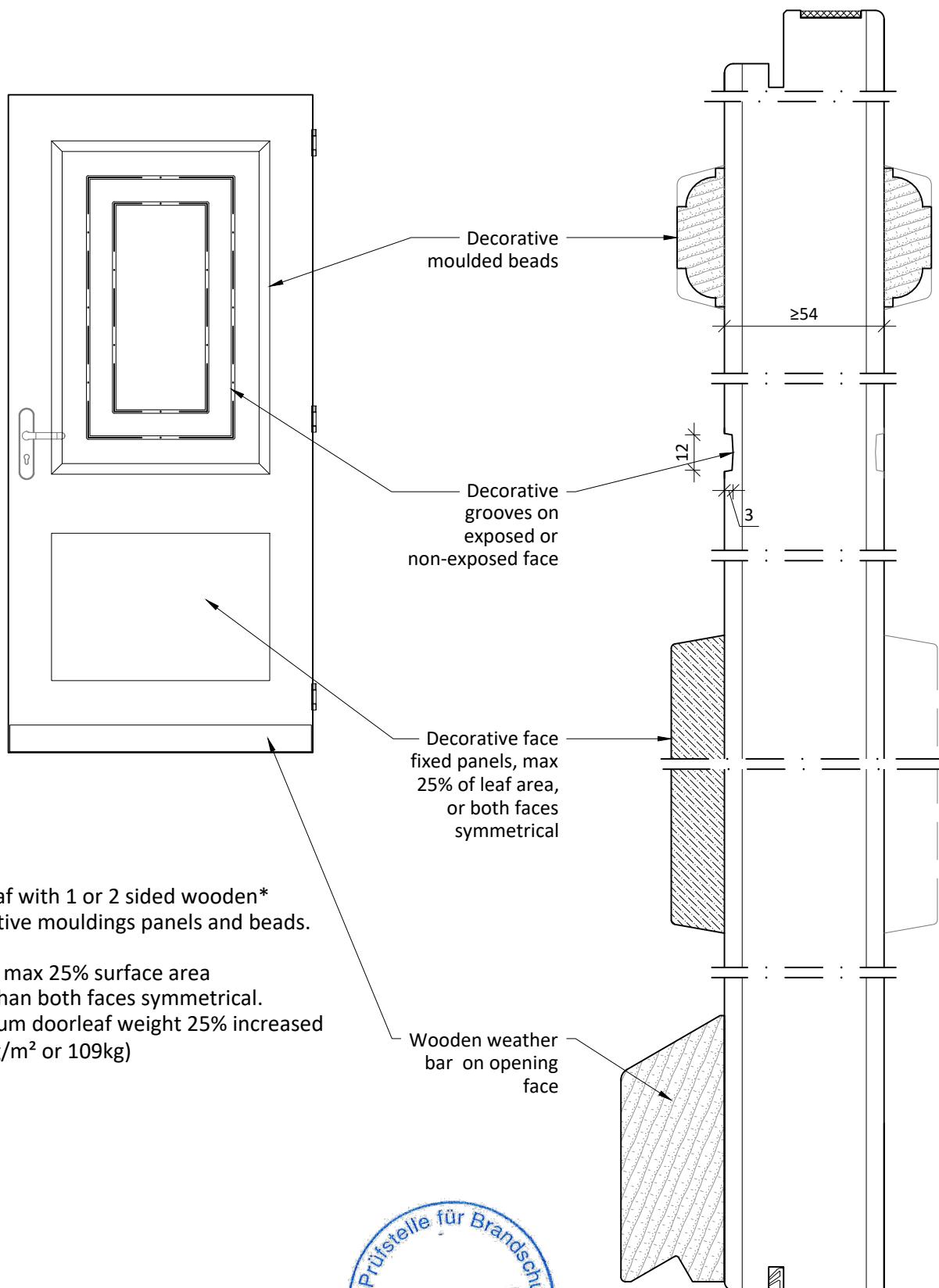
doorleaf louvre fitting

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annex 2.4

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2.5 doorleaf decorative mouldings



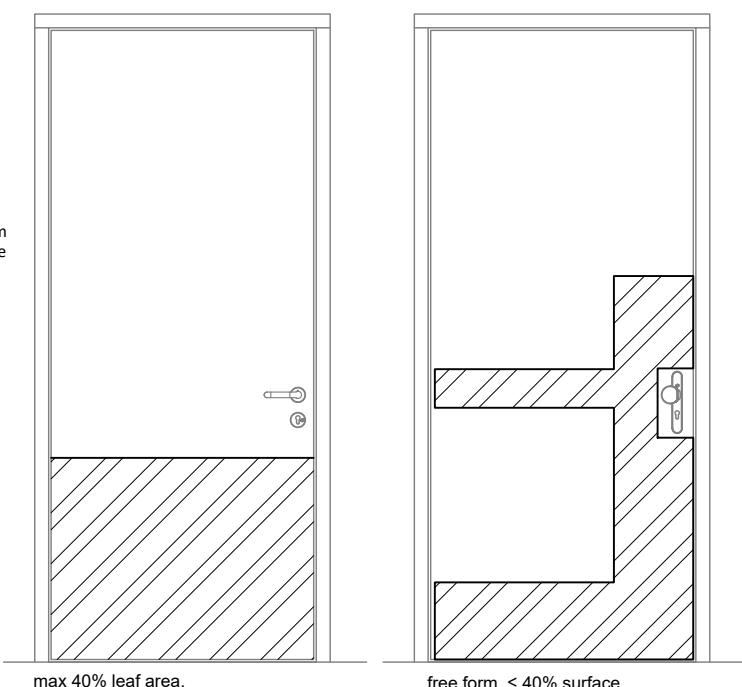
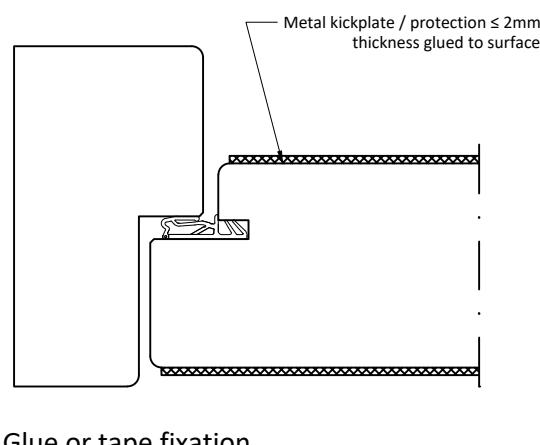
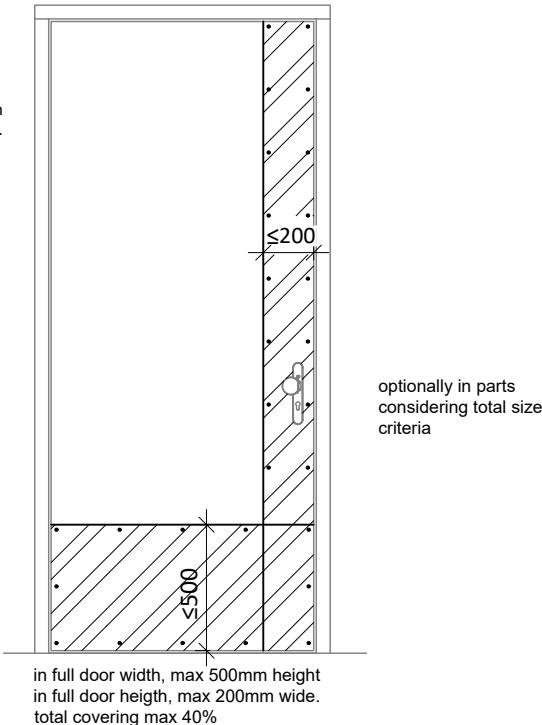
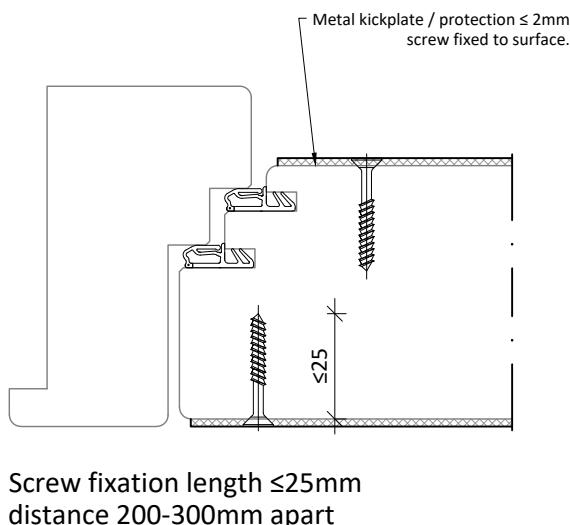
- * Decorative panel and moulding material:
- wood or wood based panel products.
 - any material reaction to fire class A₁ or A₂

doorleaf mouldings

2.6 Kickplates on doorleaf



allowed size off doorleaf covering depending on fixation type



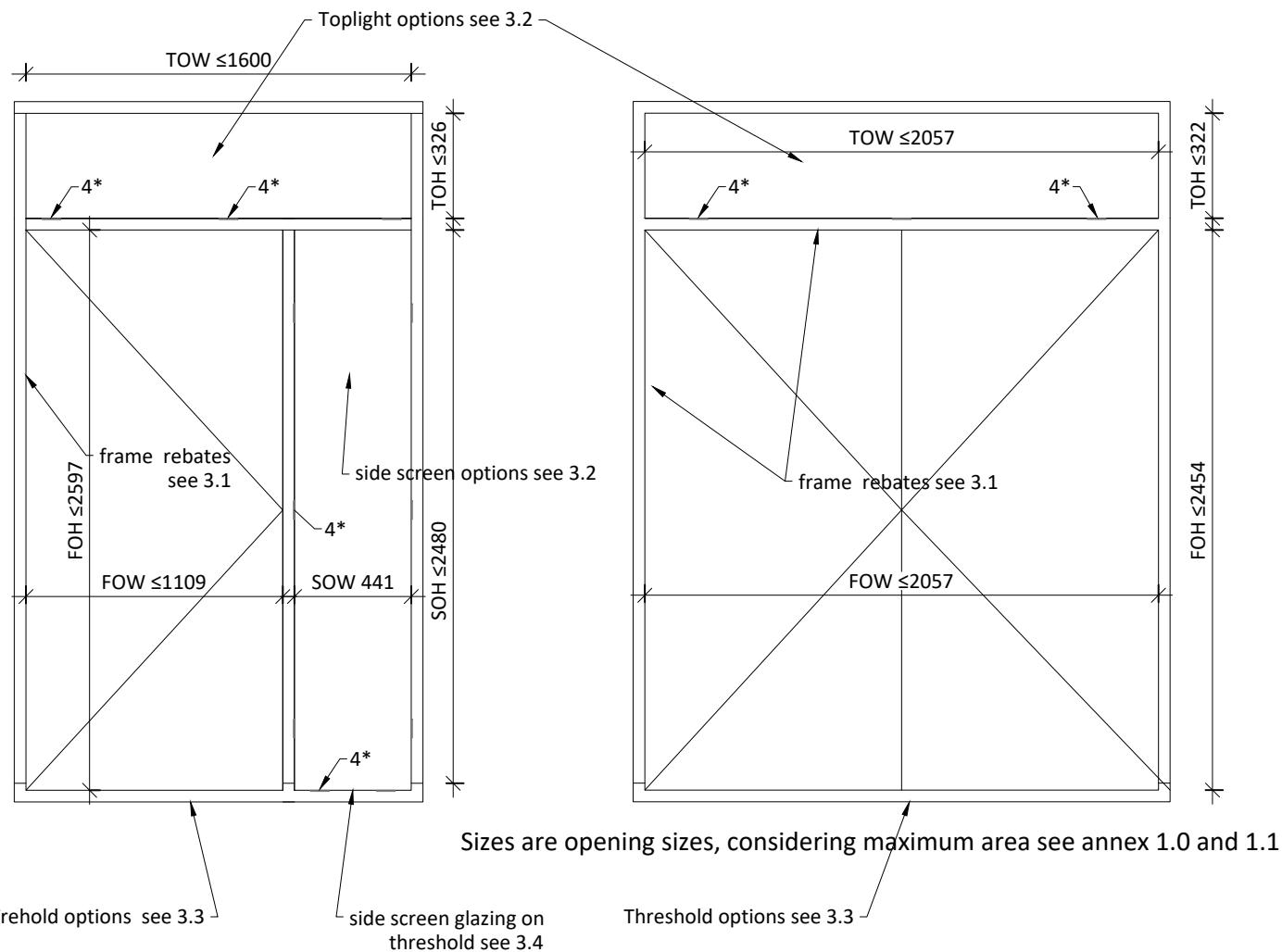
doorleaf protective metal kickplates

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annex 2.6

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3 Frame construction



Wooden timber frames

- wood species soft- or hardwood (excluding beech) $\geq 500\text{kg/m}^3$

Corner joint connections:

- Butt jointed with $\geq 2\text{pc}$ dowels hardwood $\geq \varnothing 14 \times 80$
- Mortise and tenon
- Glued with "0819 kozijnlijm" o.e.

Meeting edge with support construction and fixation see annex 4

4*: position of setting blocks glazing.

See annex 3.2. Vertical setting blocks generally in area of lock points and hinges.

FRH: Frame opening height

TOH: Top light opening height

SOH: Sidescreen opening height

FRW: Frame opening width

TOW: Top light opening width

SOW: Sidescreen opening width

Side and overhead glazing panels see annex 3.2 for details of fixing and rebates

Sidescreen glazing type and allowed sizes

Glastype side screen	type	th. (mm)	width (mm)	height (mm)	surface (m ²)
PyroDur plus 30-106	SGU	10	≤ 465	≤ 2505	$\leq 1,127$
PyroDur plus 30-186/ 30-176	DGU	23 - 33			
PyroDur 30-203 / 30-200	SGU	11 / 14	≤ 465	≤ 2505	$\leq 1,127$
PyroDur 30-283 / 30-273 *	DGU	24 - 34			
Pyrodur 30-283/ 30-273 *	TGU	≥ 38			

Overhead top light glazing type and allowed sizes

Glastype overhead	type	th. (mm)	width (mm)	height (mm)	surface (m ²)
PyroDur plus 30-106	SGU	10	≤ 2077	≤ 342	$\leq 0,696$
PyroDur plus 30-186/ 30-176	DGU	23 - 33			
PyroDur 30-203 / 30-200	SGU	11 / 14	≤ 2077	≤ 342	$\leq 0,696$
PyroDur 30-283 / 30-273 *	DGU	24 - 34			
Pyrodur 30-283/ 30-273 *	TGU	≥ 38			

* or PyroDur 30-383 and 30-373 from equal productfamily

Frame construction and sizes overview

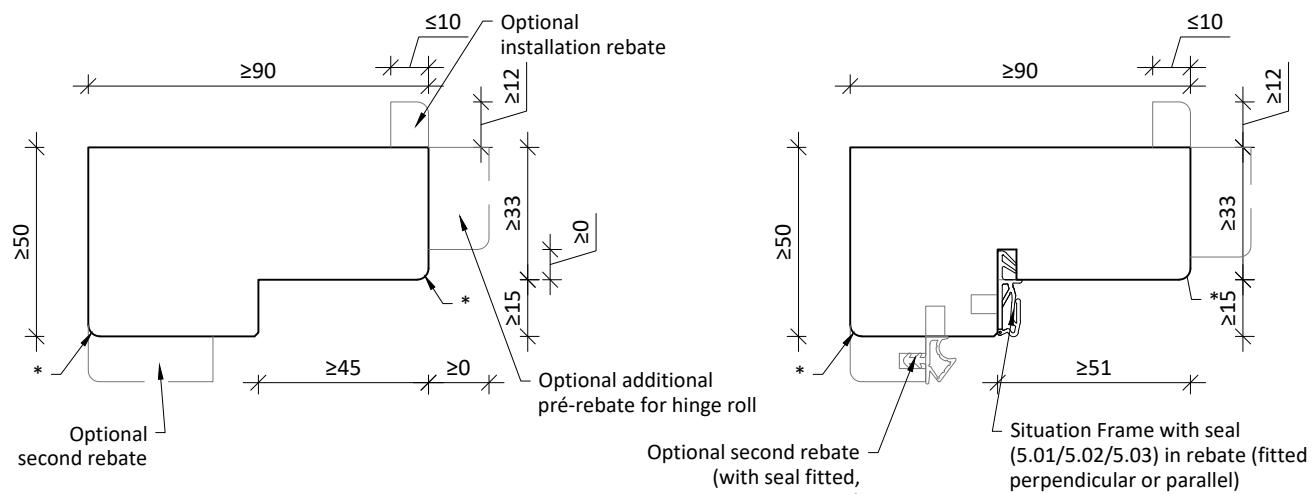
annex 3.0

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report no.
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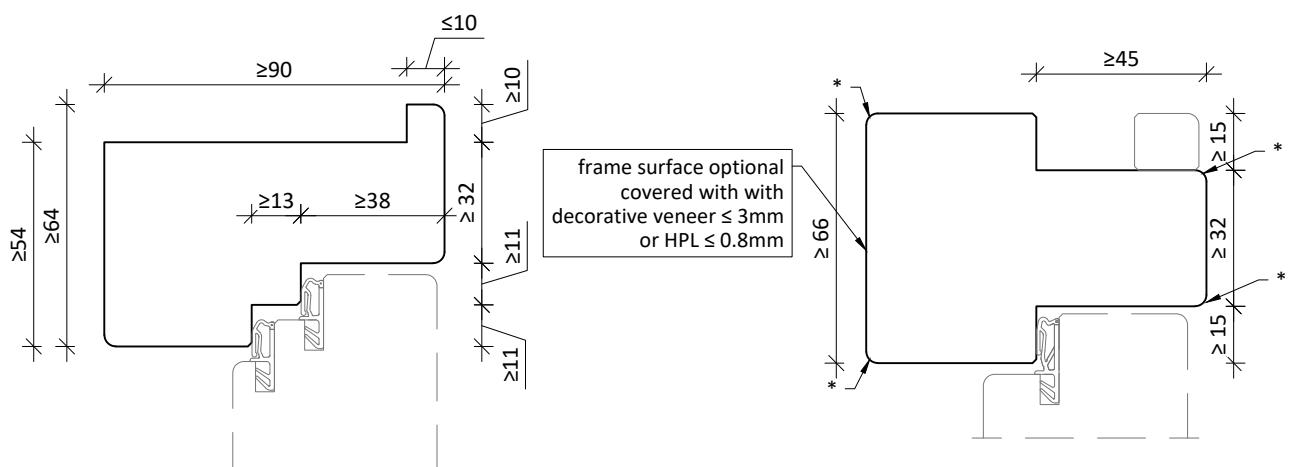


3.1 Doorframe rebates



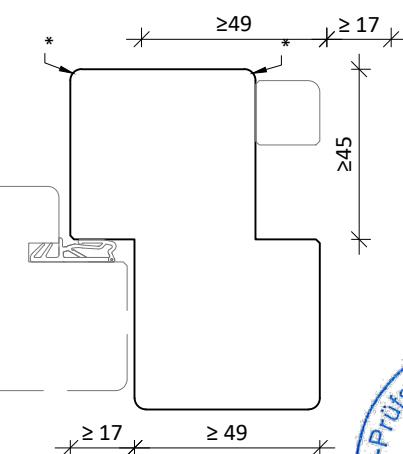
Door frame situation for doorleaf with draught seal incorporated in doorleaf. or Side/overhead glazing

Door frame situation for doorleaf with rebate without draught seal in doorleaf.

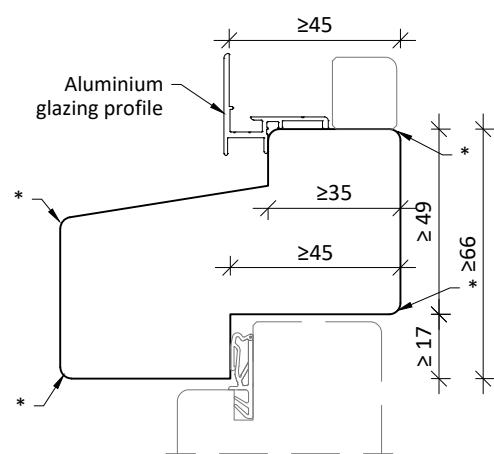


Door frame situation for doorleaf with double draught seal incorporated in doorleaf.

Door frame transom overhead screen situation.



Door frame transom sidescreen situation, rebate opposite side.



Door frame transom overhead situation, exterior glazing profile and slanted rebate

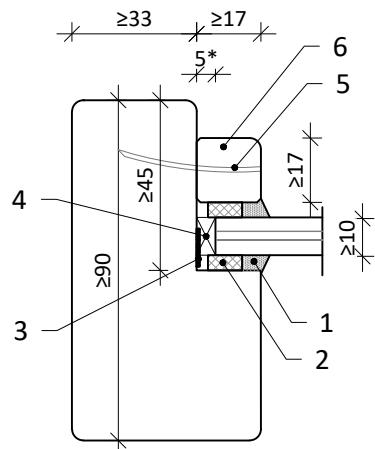
*: Edge chamfered ≤ 3 , Radius ≤ 5 , or square.

Doorframe rebates

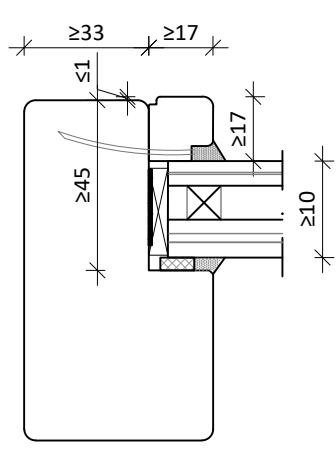
3.2 Frame glazing overhead and side panel



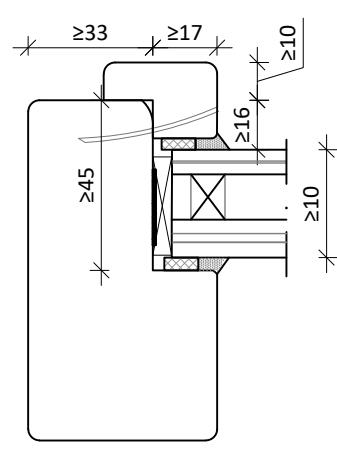
Glass with frame rebate overlap to be $12^{+/-1}$ mm in sidescreens and $10^{+/-1}$ mm in toplight



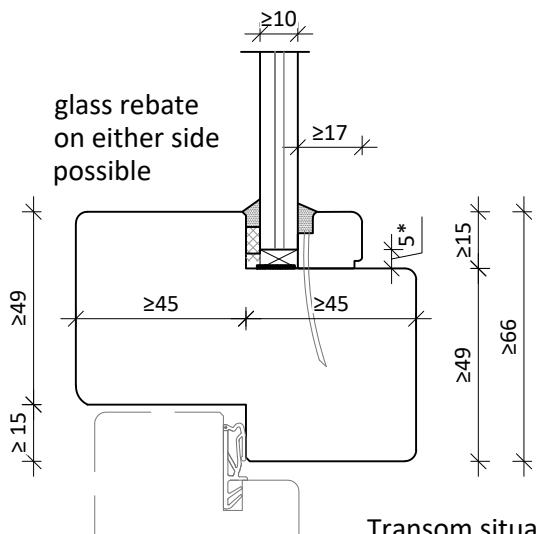
timber frame glass bead
2-sided backing



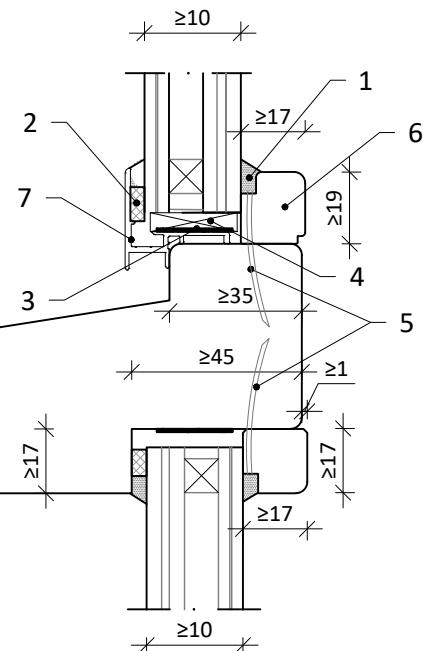
timber frame glass bead
nailed concealed, 1-sided
backing



timber frame with rebated
glass bead 1, or 2-sided backing



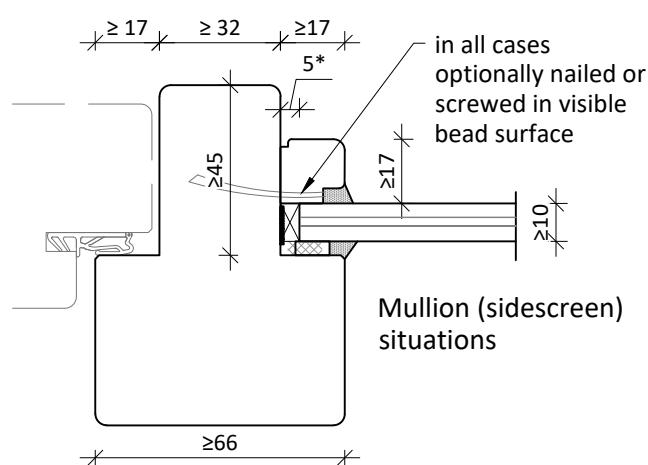
Transom situations



Aluminium glazing profile on non-fire exposed face only

DGU or TGU*,
Fireprotective glass pane to be placed
on the fire side.

*: DGU: double glass unit
TGU: triple glass unit



Mullion (sidescreen)
situations

Glass type and allowed sizes see
table in Annex 3.0



Materials:

1. Glazing sealant silicon based o.e.
2. Ceramic backing size $4^{+/-1} \times 9$ mm
3. Intumescent 0.8x10 (single glass) or 0.8x20 (for insulated glass)
4. Setting blocks A2 or A1 material
5. Steel nail 1.2x30mm or screw Ø3.5x40 distance $50^{+/-10}$ mm from corner and ≤ 200 mm apart.
6. Glass bead soft or hardwood ≥ 500 kg/m³
7. Aluminium glazing profile with integrated ventilation ducts, type LU-G5-3 o.e..

*: nominal glass to frame rebate gap 5mm $^{+/-2}$

Setting block size:

thickness: 3 - 5 mm

length: 80 mm

width : glass thickness - 0 to 5 mm

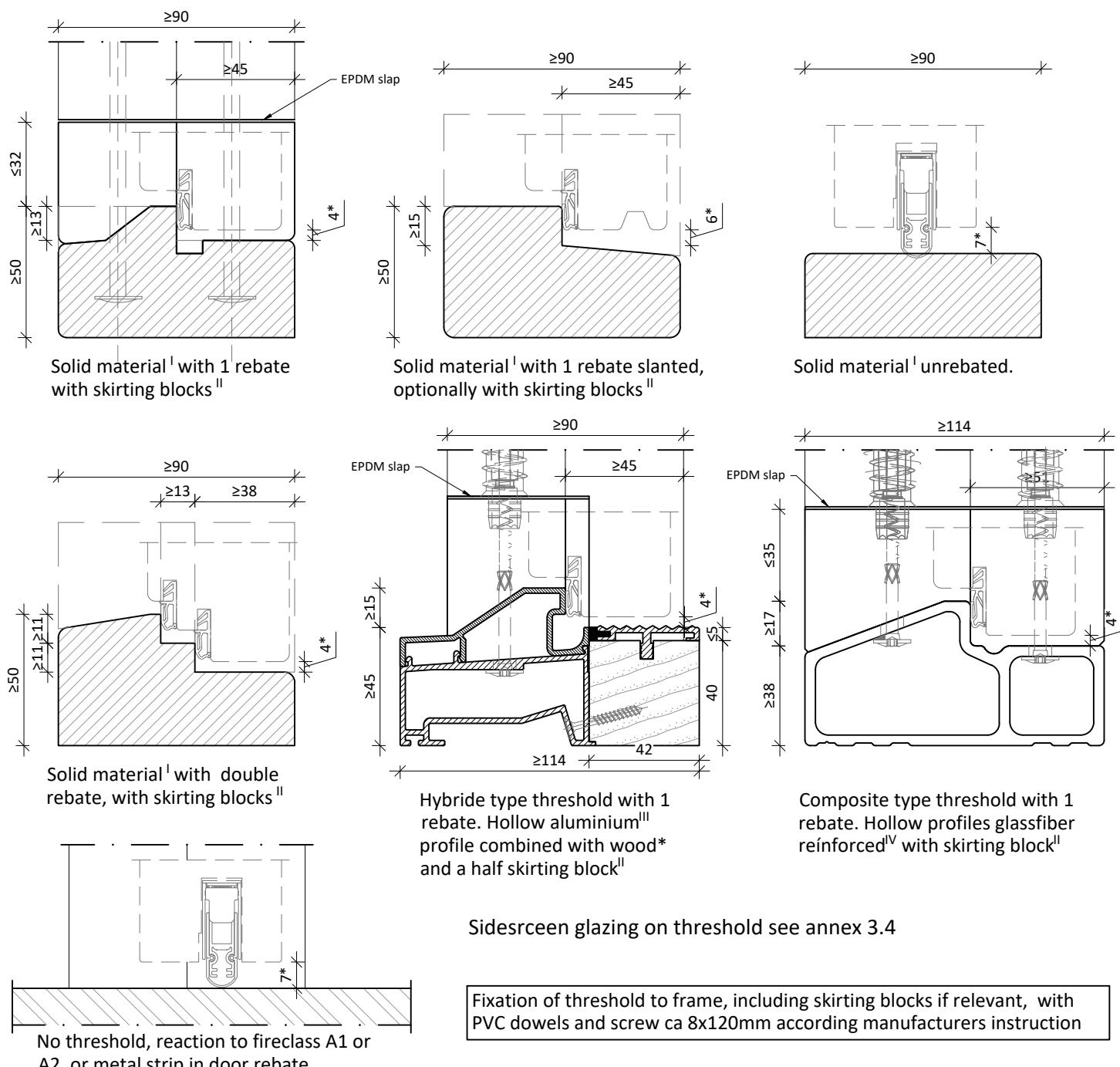
Frame glazing overhead and sidescreen

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annex 3.2

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3.3 Frame thresholds



*: nominal gap under the door

	nominal mm	maximum mm
Bottom no threshold/ no rebate with dropseal	7	$\leq 12,0$
Bottom threshold with rebate	4	$\leq 8,0$

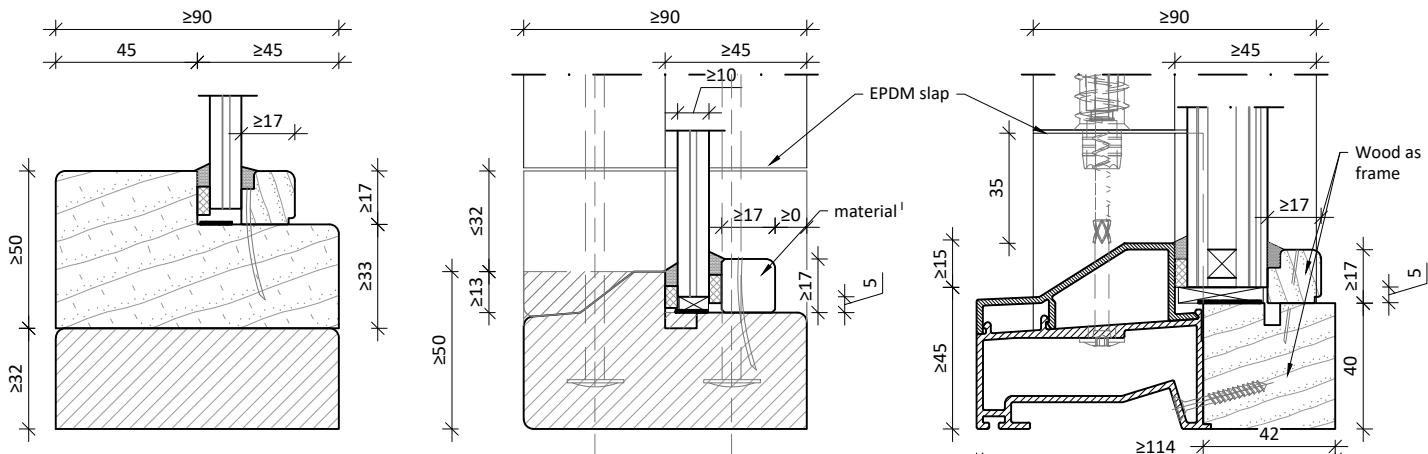


Materials:

- I: Wood $\geq 500\text{kg/m}^3$, HMPE, quarz epoxy resin artifical stone (Holonite).
- II: HMPE, quarz epoxy resin artifical stone (Holonite)
- III: extruded aluminium profile system Venstertechniek EEFD o.e., steel, stainless steel
- IV: Glassfiber reinforced pulltrusion profiles

Doorframe thresholds

3.4 Frame thresholds under sidescreen



Wood frame profile, mounted on a threshold solid material^I (continuing from door opening)

Direct glazing on a threshold solid material^I (continuing from door opening) optionally with skirting blocks^{II}

Hybride type threshold with rebate. Hollow aluminium^{III} profile combined with wood as frame and a half skirting block^{II}

Glazing rules and materials see annex 3.2

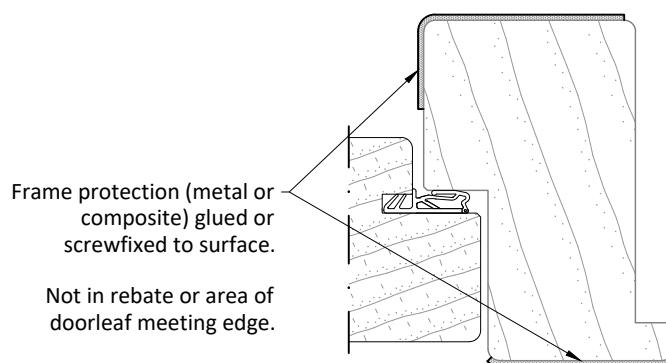
Fixation of threshold to frame, including skirting blocks if relevant, with PVC dowels and screw ca 8x120mm according manufacturers instruction

Materials:

- I: Wood $\geq 500 \text{ kg/m}^3$, HMPE, quarz epoxy resin artifical stone (Holonite).
- II: HMPE, quarz epoxy resin artifical stone (Holonite)
- III: extruded aluminium profile system Venstertechniek EEFD o.e., steel, stainless steel

3.4 A: Frame protection

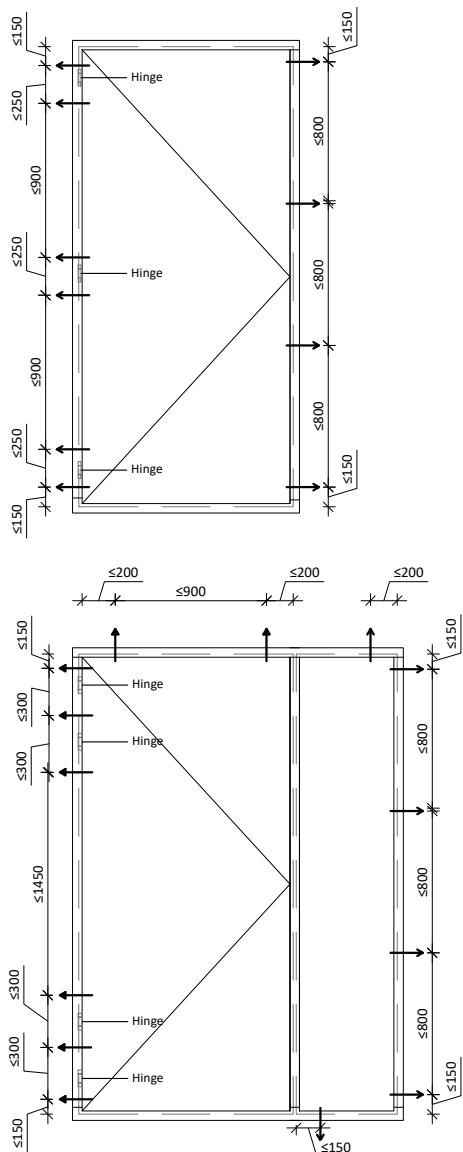
adding surface fixed frame protection possible



Frame sidescreen thresholds and protection

annex 3.4 / 3.4a

4 Frame fixation to support construction



Fixation points of timber doorframes in support construction. Details of wall-to frame meeting edge and fixation see annex 4.1 for positioning in wall opening only

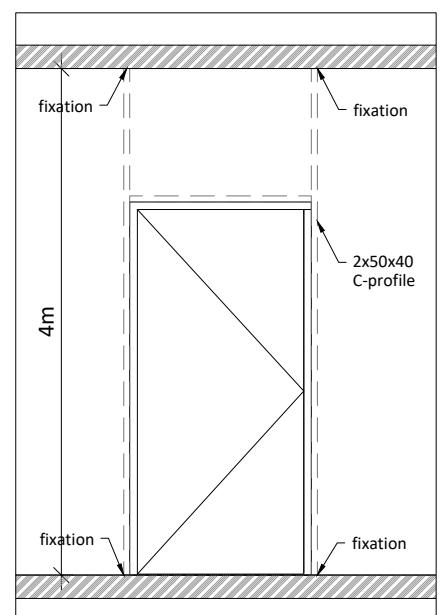
Support construction:

Rigid $\geq 100\text{mm}$ density $\geq 550\text{kg/m}^3$ according EN 1363-1 such as:

- Aerated concrete;
 - Concrete;
 - Masonry brcked wall;
 - Limestone:

Flexible partition ≥100mm EI60 classified according EN 1363-1

- Max 4m height;
 - To support door weight, prescription metal-stud wall:
 - ≥2mm U-profile 40x50mm around doorframe;
 - fixated to structural floor and ceiling construction;
 - double gypsum board ≥12.5mm.



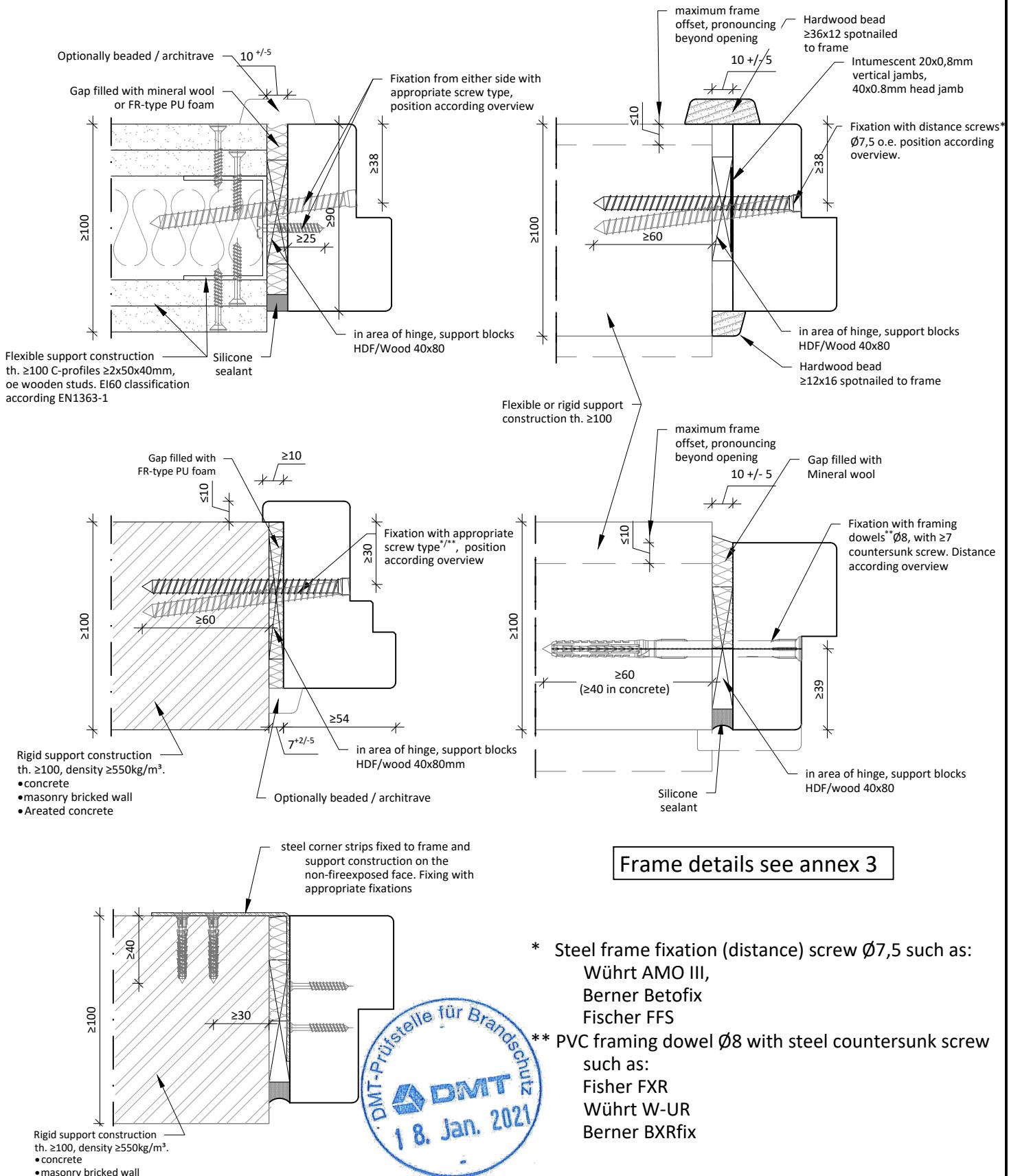
Frame fixation to support construction

4.1 Meeting edge with and fixation to support construction



Fixation points of timber doorframes in support construction see Annex 4.0

Examples of fixation and meeting to support construction, all are interchangeable



Frame details see annex 3

* Steel frame fixation (distance) screw Ø7,5 such as:
Wöhrt AMO III,
Berner Betofix
Fischer FFS

** PVC framing dowel Ø8 with steel countersunk screw such as:
Fisher FXR
Wöhrt W-UR
Berner BXRFix

Meeting edge frame to support constr.

annex 4.1

5 Seals



Non-intumescent smoke, draught, acoustic seals

Seal	material	height	thickness	gap size	position
KD 1505 / KD 1005 series	Silicone rubber	15/ 10	10,5	6	rebate door or frame stop, rebate height ≥11mm
KD 1501 / KD 1201 series	Silicone rubber	15 / 12	10	6	rebate door or frame stop, rebate height ≥12mm
SKF 5434 / SKF 5455 series	Silicone rubber	15 / 12	9	6	rebate door or frame stop, rebate height ≥11mm
KD 1515	Silicone rubber	15	14	9	rebate door or frame stop, rebate height ≥15mm
KDA-01	Silicone rubber	10	4	2	Astragal double doors
KD 003.3	TPE-rubber	8	5	4	door edge to reveal of frame stop

Other smoke / draught seals possible if:

- ≤ 20% size and gap size as tested above
- material as tested or same or better reaction to fire class

Intumescent seals

Intumescent	material	width	thickness*	position
Fitherm GSi	Graphite + PVC cover	20	2	Head of door
		6,5	2	Meeting edge double doors
Fitherm GH	Graphite	14	2	Behind passive doorlock U-forend in meeting edge
Fitherm GH	Graphite	14	2	Behind MP lock forend driving rod
Fitherm GB	Graphite	10	0,8	glass rebate single glass
Fitherm GB	Graphite	10	0,8	cable canal doorleaf
Fitherm GB	Graphite	20	0,8	glass rebate insulation glass
Fitherm GB	Graphite	20	0,8	Frame-wall meeting edge vertical (optional version see Annex 4.1)
Fitherm GB	Graphite	40	0,8	frame head to wall meeting edge (optional version see Annex 4.1)
Fitherm GXf	Graphite	40	4	Mail slot

*: thickness excluding optional PVC cover

Size can be increased by max 10%

Size can be increased proportionally with doorleaf thickness / rebate depth

Automatic drop seals

Seal	material	height	thickness	position
EllenMatic Soundproof	Aluminium profile with silicone rubber and plastic composite parts	30	15	underside of the door in notch ≤15,5x32

or other dropseals with test evidence in similar construction



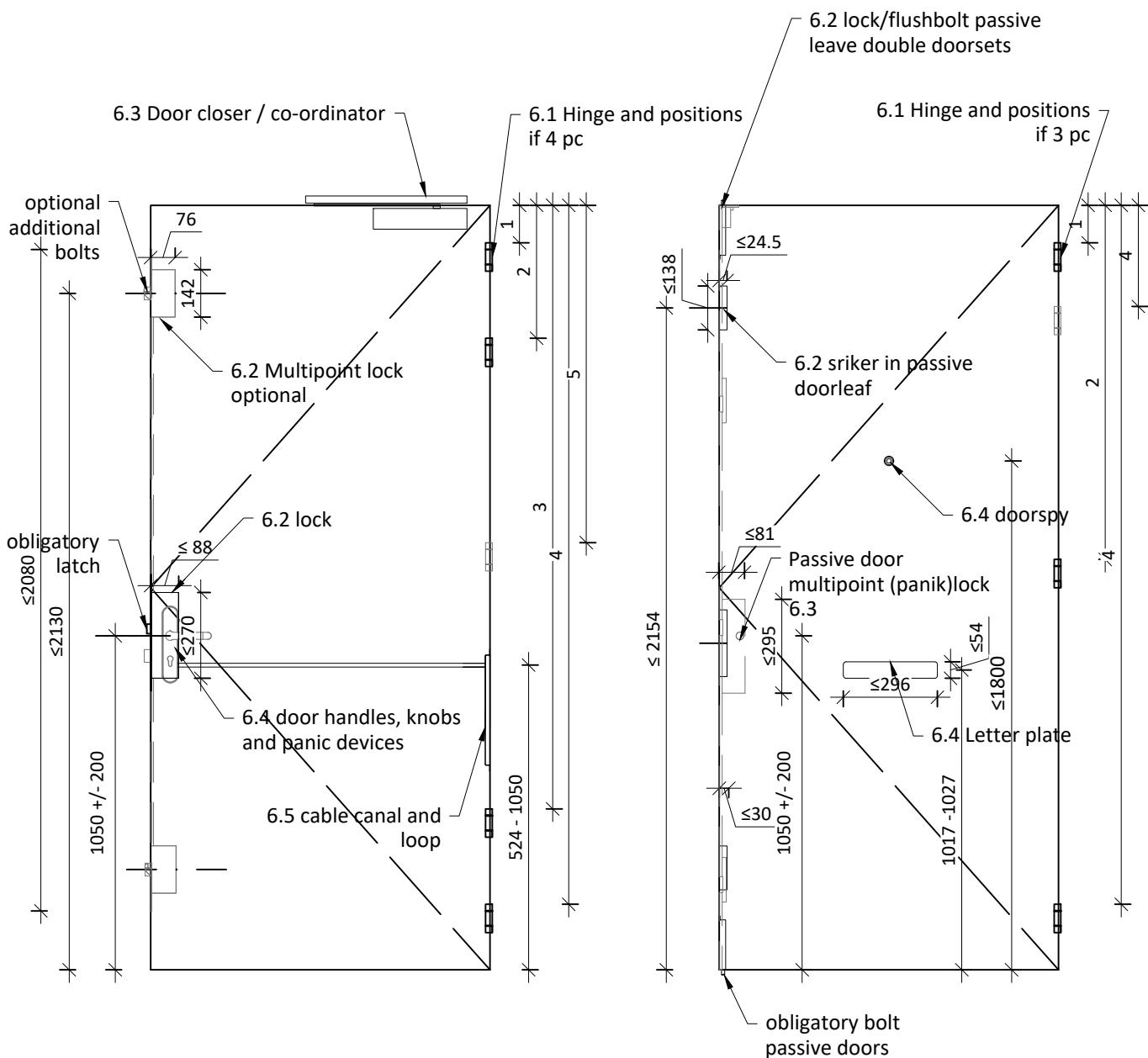
Seals and intumescents

annex 5

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6. Hardware positions and index



- 6.1 Hinges and position
see Annex for list
- 6.2 Locks, flushbolts and strikers
see Annex for list
- 6.3 Door closers and co-ordinators
see Annex for list
- 6.4 Door furniture, handles, letterplates, doorviewers
see Annex for list
- 6.5 Cable loop:
type M1188
Canal through door:
Ø18mm fitted with intumescent 10x0,8



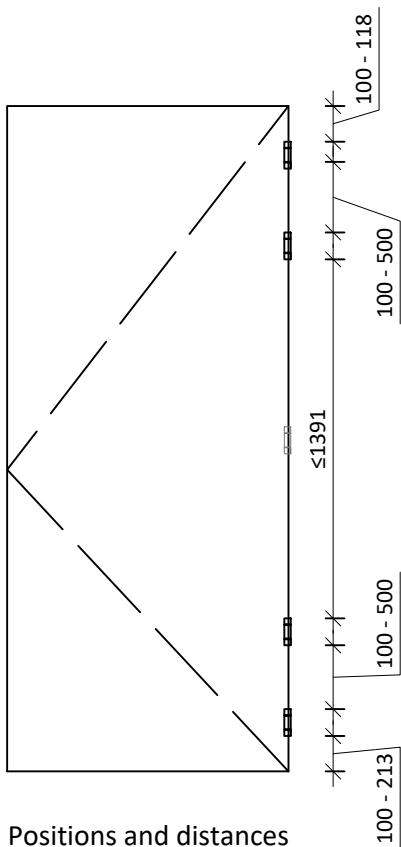
Hardware positions and index

6.1 Hinges and hinge positions

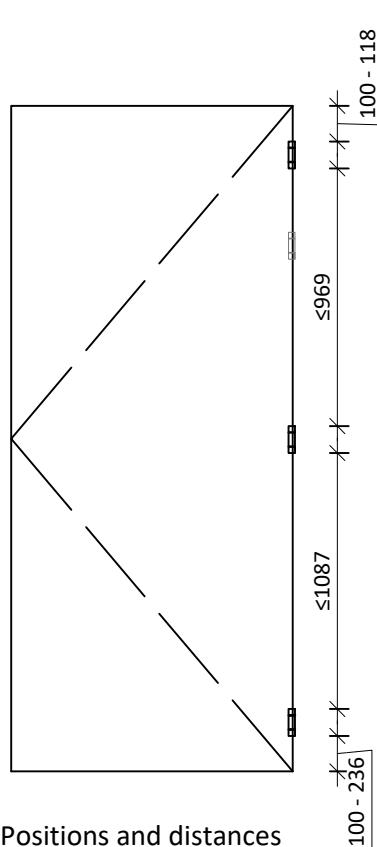


product	producer	knot diameter	height	width	leaf th	description	fixation
S2 Ultimaxx	Themans BV	15	89	89	3	galvanised steel butt hinge with integrated security and composite bushings	8pc Ø4x40 pb. screw
S2 HMR089	Themans BV	15	89	89	3	galvanised steel butt hinge with composite bushings	8pc Ø4x40 pb. screw
Atlas inside	Buva BV	15	89	89	3	galvanised steel butt hinge with integrated security and composite bushings	8pc Ø4x40 pb. screw
S2 HMR6452	Themans BV	15	114	89	3	galvanised steel butt hinge with integrated burglar security pin steel ball bearings	12pc Ø4x40 pb. screw

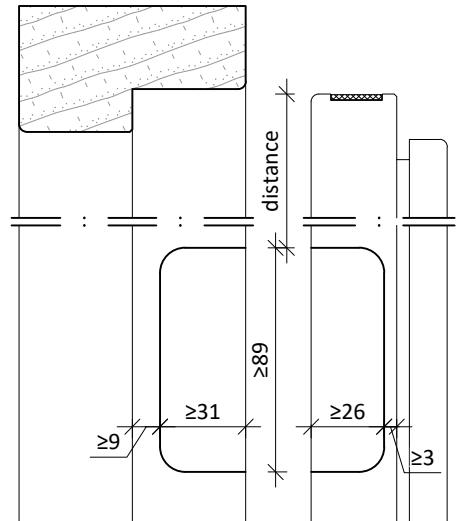
all steel-/stainless steel butt hinges according to EN1935 with test evidence in similar timber doorset construction for ≥EW30, can be used if size not smaller then listed above.



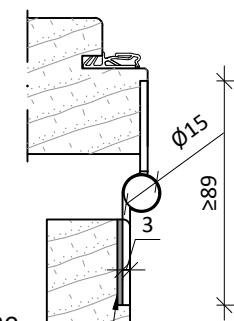
Positions and distances on doorleaf if 4 hinges (optionally 5)



Positions and distances on doorleaf if 3 hinges (optionally 4)



frame door leaf



frame

optionally backing ≤2mm behind leave to adjust depth.
HPL, wood, or ≥650°C melting point composites



Hinges and hinge positions

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annex 6.1

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6.2 Locks and lock system index



A : Locks (multipoint locks)

lock type	product examples	leafcutout size main lockcase (w x d x h)	leafcutout size top lockcase	Backset	Forend size	lever height	top lockcase height in doorleaf
Multipoint lock	KAI 10600-31/32/33 S2 H542 V0203/V0207 BUVA MF C/K 2090 BUVA 6220/7220 KVF AS 2502 F20 W268/W270 FUHR 833P	≤ 18 x 88 x 270	≤18 x 76 x 142 or ≤16 x 51 x 169	≤ 65	≤ 3x20x2090	1050 +/- 200	≤2144
Mortise lock	Any according DIN 18250/18251	≤ 18 x 88 x 270	-	≤ 65	≤ 20x2090	1050 +/- 200	-

- MP-Lock: behind forend driverod (between lockcases) Intumescent 2x14mm fitted
- All locks and multipoint locks with at least 1 latch point, if material and size as listed above and EN 1634-1 test evidence comparable timber doorsets are possibly allowed after review by Kegro Deuren.
- Position of lock center (axis) according Annex 1.2 and 1.3

B : Strikers to be fixed in frame

product	producer	type	frame cutout size (w x h x d)	max height position in door frame	material	fixation
Buvalux 6025+MF	Buva	Box type main striker with stainless steel 1,5mm forend	25,5 x 185,5 x 24,5	as main lock positon	Zamac box, stainless steel forend	Ø4x40 pb. screw + Ø4x30 pb screw
Inline +	Buva	Box type additional striker	25,5 x 110,5 x 24,5	≤2130	ite box, with steel	Ø4x40 pb. screw
KAI 10600 + LL40	Kegro / Themans BV	Box type main striker with zink latch strike	24 x 190 x 23	as main lock positon	Steel box, Zamac latchplate	Ø4x30 pb screw
KAI 10600	Kegro / Themans BV	Box type additional striker	24 x 104 x 9 + 24 x 42 x 21	≤2143	Steel	Ø4x40 pb. screw + Ø4x30 pb screw
KVF 881-083 + 402-031	KVF Karl Fliether GmbH & Co. KG	Box type main striker with latch plate	22,5 x 210,5 x 24,5	as main lock positon	Zamac box, steel latchplate	Ø4x40 pb. screw
KVF 2500-267-2W	KVF Karl Fliether GmbH & Co. KG	Box type additional striker	22,5 x 138,5 x 24,5	≤2154	Zamac box, stainless steel forend	Ø4x40 pb. screw
Maasland S50-UR E-strike	Maasland BV	Electric strike on stainlesssteel faceplate	22 x 67 x 28,5 + 25 x 192 x 1,5	as main lock positon	Steel and stainless steel	Ø4x30 pb. screw

- other strikes allowed if ≤ cut out size and material not of lower melting point.
- Main stricker for latch should be of steel, stainless steel of metal melting point>650°C

C : Passive doorleaf lock systems double doorsets

type	products	producer	lock system	cutout size (w x h x d)	fixation
Automatic Flushbolt	2pc Olda 28HZ + strikers from list	Olda (flushbolts)	Steel bolt 20xØ10mm, 1.5mm steel strikeplate	25 x 155/168 x 20	Ø3,5x40 pb. Screw
Manual flushbolt	2pc Olda 30HZ + strikers from list	Olda (flushbolts)	Steel bolt 20xØ10mm, 1.5mm steel strikeplate	25 x 155/168 x 20	Ø3,5x40 pb. Screw
Panik multipoint counterlock	Fuhr 833 PK counterlock	CARL FUHR GmbH & Co. KG	EN 1125 passive doorlock for combination with 833P panik lock	26,5 x 9 forend groove 18 x 295 x 81 mainlock 70x24x20 toplock case 138x24x24 hook striker	Ø4x40 pb. screw
U-form forend counterlock (contra-espagnole)	Fuhr 841	CARL FUHR GmbH & Co. KG	U-form Faceplate passive doorlock for edgeless timber doors	26,5 x 9 forend groove 23 x 170 x 30 lever 23 x 73 x 22 strikers	Ø4x40 pb. screw
Face fixed passive doorlock	Buva 8012 face fixed lock +	Buva Bv	Surface fixed passive doorlock espagnole, on	no, face fixed	Ø4x50 pb. Screw

- Equal lock systems allowed after review by Kegro Deuren. Considering ≤ cut out size and material not of lower melting point. Lock to be successfully tested in EN 1634-1 similar timber doorset.

Locks and lock system index

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annex 6.2

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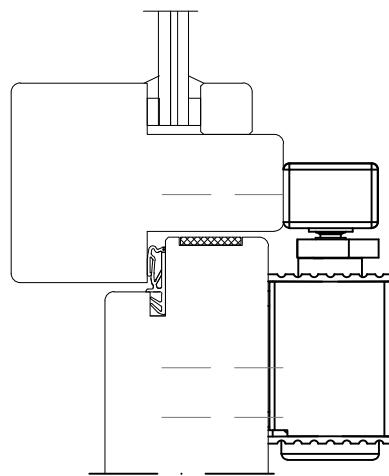
6.3 Door closers and coordinators



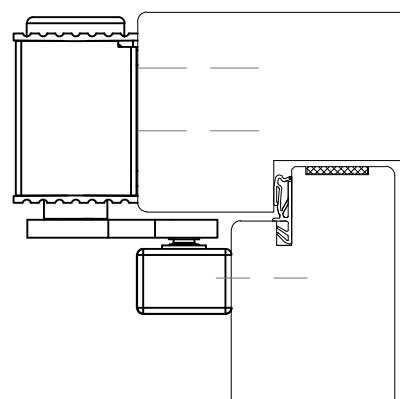
list of door closers and coordinators

type	product	producer	housing size	rail or arm	EN 1154 size	installation
closer	ECO TS 41	Eco Schulte GmbH	242 x 56 x 41	rail GS-B	EN 2-4	face fixed
closer	ECO TS 61	Eco Schulte GmbH	287 x 62 x 49	rail GS	EN 2-5	face fixed
closer free swing	Abloy FD 440	Assa Abloy	395 x 68 x 62	rail FD 494	EN 3-6	face fixed
closer with elec. meachinical hold open device	Abloy DC250	Assa Abloy	305 x 71 x 66	rail FD 450	EN 1-6	face fixed
closer free swing	TS 5000 EFS	GEZE	325 x 60 x 47	rail	EN 3-6	face fixed
closing coordinator	ECO SR III	Eco Schulte GmbH	21 x 31 x length	rail GS	-	face fixed
closing coordinator	ISM	GEZE	40 x 31 x length	rail	-	face fixed

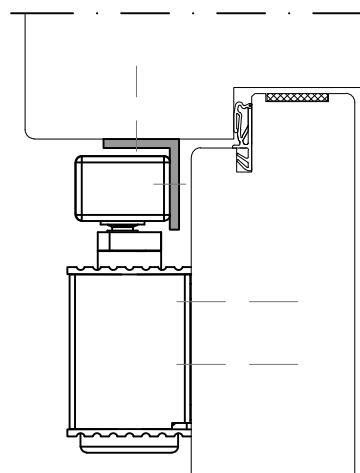
- all closers with EN 1154 and EN 1634-1 test evidence are allowed, considering size \leq above, equal position and fixation
- Face fixed on doorleaf or frame, on both opening and closing face possible



normal instalation closing face (hinge side)



instalation opening face (non-hinge side)
optionally on corner console



Door closers and coordinators

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6.4 Door furniture, handles and mails slots.



Leversets, handles and EN 1125 panik and touch bars

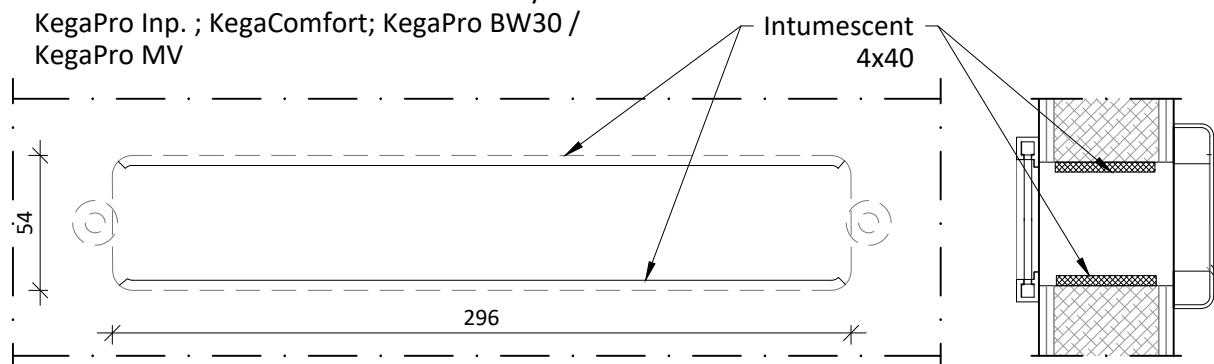
type	product	producer	face plate size	material	installation
leverset of faceplate	Buvalux U-form lever on KT3500	Buva bv	50 x 240 x 15/10	Aluminium solid	3pc M6 threaded screws
leverset on rose	Ansa U19-8 Leverset on security rose	Themans BV	Ø56 x 10/4	Stainless stee	2pc M6 threaded screws
cilinder rose	Ansa KT security rose SKG**	Themans BV	Ø56 x 16/8	Stainless stee	2pc M6 threaded screws
Lever-push handle on faceplate	S2 402921KT SKG***	Themans BV	40 x 246 x 15/8	Aluminium solid	2pc M6 threaded screws
EN 1125 Panik bar	ECO EPN 900 IVa	ECO Schulte GmbH		Stainless steel	M6 threaded screws and Pb-
EN 1125 Touch bar	ECO EPN 2000II DS	ECO Schulte GmbH		Stainless steel	Pb-screw to door facing
leverset of faceplate	ECO EPN 900 SI Rohrrahmen	ECO Schulte GmbH	40 x 250 x 15	Stainless steel	2pc M6 threaded screws

- all handles and furniture can be changed for other furniture with EN 1634-1 testevidence on wood based doorsets.

Mail slots/letter plates

type	product	producer	Cut-out size	material	installation
Inside + outside mailbox slot	AMI EP-960 / 970	Ami BV	54 x 296	Aluminium solid	2pc M6 threaded screws
outside mailbox slot + Inside mailbox brush seal	AMI EP965 / 975	Ami BV	54 x 296	Aluminium solid	2pc M6 threaded screws
	Kegro BBA-01	Kegro BV		aluminium icm POM	2 pc Ø3,5x25mm pb screw

Mail slots in doorleafs with solid core only
 KegaPro Inp. ; KegaComfort; KegaPro BW30 /
 KegaPro MV



Door viewer

type	product	producer	Cut-out size	material	installation
Door spy / door viewer	DX- DRS 2140B	Dulimex	Ø15	plastic lens + brass	screwed on door

According EN 15269-3 all other doorviewers with metal casing and glass lens, are allowed if fitting diameter $\leq \text{Ø}15\text{mm}$.



Door furniture, handles, and mail slots

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annex 6.4

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