



DE

Einbau- und Wartungsanleitung

Ein- und zweiflügelige Stahltüren (OD-Türen, H3G, H16G, HS75, H16S1)

EN

Instructions for Fitting and Maintenance

Single-leaf and double-leaf steel doors (OD doors, H3G, H16G, HS75, H16S1)

FR

Instructions de montage et de maintenance

Portes en acier à 1 et 2 vantaux (portes OD, H3G, H16G, HS75, H16S1)

IT

Istruzioni per il montaggio e la manutenzione

Porte d’acciaio ad uno e a due battenti (Porte OD, H3G, H16G, HS75, H16S1)

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HÖRMANN

Inhaltsverzeichnis

Sehr geehrte Kundin, sehr geehrter Kunde,
wir freuen uns darüber, dass Sie sich für ein Produkt aus unserem Hause entschieden haben.

1 Zu dieser Anleitung

Bitte lesen und beachten Sie diese Anleitung. Sie gibt Ihnen wichtige Informationen zu Einbau, Wartung und Pflege Ihrer Stahltür und ist ein wichtiges Dokument für die Bauakte.

Sprechen Sie mit unserem Kundendienst, wenn Sie nach dem Durcharbeiten dieser Anleitung noch Fragen haben.

1.1 Verwendete Warnhinweise

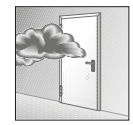
⚠ Das allgemeine Warnsymbol kennzeichnet eine Gefahr, die zu **Verletzungen** oder **zum Tod** führen kann. Im Textteil wird das allgemeine Warnsymbol in Verbindung mit den nachfolgend beschriebenen Warnstufen verwendet. Im Bildteil verweist eine zusätzlich Angabe auf die Erläuterungen im Textteil.

⚠ GEFAHR

Kennzeichnet eine Gefahr, die unmittelbar zum Tod oder zu schweren Verletzungen führt.

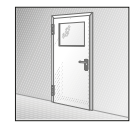
1.2 Verwendete Symbole


Feuerschutz


Rauchschutz

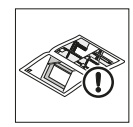

Sicherheitstür

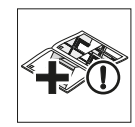

Schallschutz

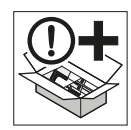

Funktionstür


Wichtiger Hinweis

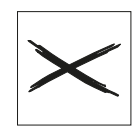

Siehe Textteil


Siehe Bildteil

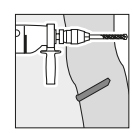

Siehe Einbauanleitung im Zubehörpaket

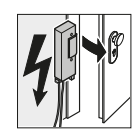

Als Zubehör zu bestellen


Korrektes Vorgehen


Unzulässiges Vorgehen (Vorgehensweise)


Schweißen


Bohren

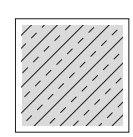

Elektrischer Türöffner

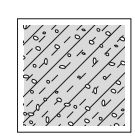

Einbruchgefahr auf Öffnungsseite

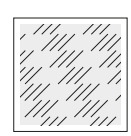

Einbruchgefahr auf Schließseite

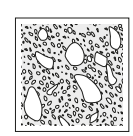

Fluchtweg

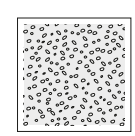

Holz


Mauerwerk / Beton

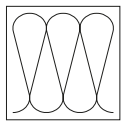

Porenbeton


Gips


Beton


Mörtel

Zargendichtung CR
T60 / EI_2 60 / HBS60
T90 / EI_2 90 / HBS90
T120 / EI_2 120 / HBS120
T30 / EI_2 30 mit Mineralwollhinterfüllung



Dämmstoff A
(EN 13501-1)

2 ⚠ Sicherheitshinweise

⚠ GEFAHR

Lebensgefahr beim Einbau der Stahltür
Beim Einbau kann die Tür oder der Türrahmen umfallen und dabei Personen erschlagen.
▶ Sichern Sie Tür und Zarge vor und während der Montagearbeit gegen Umfallen.

- Setzen Sie nur qualifiziertes und unterwiesenes Personal für Montage und Wartung ein.
- Lassen Sie Elektroarbeiten nur von ausgebildeten Fachkräften durchführen.
- Führen Sie keine Veränderungen durch An- und Umbauten durch, die die Sicherheit beeinträchtigen können.
- Schließen Sie die Gefahr durch Feuer, Gas, Staub, Dampf, Rauch, Brand und Explosion bei Schweiß, Brenn- und Schleifarbeiten aus.
- Vermeiden Sie, dass bei Schweißarbeiten aufschäumende Baustoffe durch Wärmeeintrag reagieren und dadurch ihre Wirkung verlieren.

3 Informationen zu den Türeigenschaften

Beachten Sie, dass die Tür einzelne Eigenschaften, eine Kombination aus den Eigenschaften Feuerschutz, Rauchschutz, Schallschutz und Einbruchschutz erfüllen kann oder eine Funktionstür sein kann.

3.1 Feuerschutz- und Rauchschutztüren

- Die jeweilige Zulassung können Sie unter **www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/** einsehen. Die Zulassung muss an der Verwendungsstelle vorliegen.
- Die angegeben Informationen sind Mindestanforderungen für den Einbau in Deutschland. Bei Einbau in anderen Ländern gelten die jeweiligen nationalen Zulassungen, wobei die Materialkennwerte mindestens der DIN zugrunde gelegt werden müssen.
- Beachten Sie die DIN 18093 (Einbau von Feuerschutztüren) und die DIN 18100 (Wandöffnungen für Türen) bzw. die länderspezifischen Vorschriften.
- Der Hersteller kann in Einzelfällen nach § 22 und § 23 der Musterbauordnung eine Übereinstimmungserklärung ausstellen.
- **Der Betreiber ist für den einwandfreien Zustand der Tür verantwortlich.**
- In Deutschland dürfen Federbänder an Türen und Klappen mit folgenden Eigenschaften **nicht** verwendet werden:
  - Flügelgewicht > 80 kg
  - Verglasung
  - Einbau in Montagewände (Ausnahme: Maße < 1000 × 1000 mm)
  - Kombination als Rauchschutztüren nach DIN 18095
  - 2 - flügelig

  Außerhalb Deutschlands können andere Vorschriften gelten, allerdings empfehlen wir die Einhaltung der deutschen Vorgaben.
- Verwenden Sie Beschläge, Schlösser, Schließmittel und Elektroanbauteile nur, wenn sie Bestandteil der Türzulassung sind oder eine Freigabe des Herstellers vorliegt.
- Bauen Sie 3 - seitig gefälzte Türen ohne unteren Schachtabschluss, in Schächten auf unterstem Bodenniveau ein.
- Gipskartonwände und Wanddicken: siehe Tab. 1:
- Zulässige Wände und Wanddicken: siehe Tab. 2:
- Hinterfüllen Sie die Zarge mit mineralischem Mörtel auf Zementbasis, z.B. LM21 von Sakret, wenn es in der Einbausituation nicht anders beschrieben wird. Spreizen Sie U-Zargen und Eckzargen (mit und ohne Gegenzargen) vor dem Hinterfüllen ab, damit sie sich durch den Druck des Mörtels nicht verbiegen.

Tab. 1: Zulässige F90A Montagewände mit Mindestwanddicken für Feuerschutz- und Rauchschutztüren, Höhe ≤ 5000 mm

Prüfzeugnis-Nr.	Wand	H3 OD H_30 OD	H3-1G H_30 D1	[1] H3-2 VM H_30 D2	H16 S1 H_90 E1
P-3310/563/07-MPA BS	Knauf W 112	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3391/170/08-MPA BS	Knauf W 131	≥ 116 mm	—	—	≥ 177 mm
P-3310/563/07-MPA BS	Knauf W 132	≥ 100 mm	—	—	—
P-3202/2028-MPA BS	Knauf W 352 / W 353	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 150 mm
P-3956/1013-MPA BS	RiGips 3.40.01ff. / 3.41.01ff.	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-3014/1393-MPA BS	RiGips 3.60.20	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3020/0109-MPA BS	RiGips 6.70.10	≥ 165 mm	—	—	≥ 165 mm
P-SAC-02/III-681	LaFarge L11 – L14	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-MPA-E-98-005	LaFarge L15	≥ 100 mm	—	—	≥ 125 mm
P-3515/0519-MPA BS	LaFarge L16	≥ 150 mm	—	—	≥ 150 mm
P-3391/0890-MPA BS	LaFarge L18	—	—	—	≥ 161 mm
P-MPA-E-99-047	Promat 450.81	≥ 140 mm	—	—	≥ 140 mm
P-11-003478-PR01	B + M W 50 / 100 – W 100 / 150	≥ 100 mm	—	—	—
P-3854/1372-MPA BS	Fermacell 1 S 31/3.1	≥ 95 mm	≥ 95 mm	≥ 95 mm	—

1) max. 2750 × 2750 mm

Tab. 2: Zulässige Wände und Mindestwanddicken für Feuerschutz- und Rauchschutztüren (mm) siehe 4.2

Wand \ Stahltür	H3-1 OD H_30-1 OD		H3-2 OD H_30-2 OD		H3-1 G H_30 D1	H3-2 VM H_30 D2	H6-1 OD	H6-2 OD	H16-1 G H_90 D1	H16-2 G H_90 F-2	H16-S1 H_90 E-1	H16-1 OD H_90-1 OD		H16-2 OD H_90-2 OD
Beton DIN 1045-1, Festigkeit ≥ C12/15	1) k ≤ 2500	2) k > 2500	1) k ≤ 2500	2) k > 2500										
	100	140	100	140	140	140	140	140	140		120	140		140
Mauerwerk DIN 1053-1, Steinfestigkeit ≥ 12, Mörtelgruppe ≥ 2	1) k ≤ 2500	k > 2500	1) k ≤ 2500	2) k > 2500			e ≤ 1250 und k ≤ 1750	e ≤ 1500 und k ≤ 2500				e ≤ 625 k ≤ 750	e > 625 k > 750	
	115	175	115	175	175	175	115	175	240		175	115	175	175
Porenbeton-Block oder Plansteine, DIN 4165-3, Festigkeitsklasse ≥ 4, Porenbetonplatten nach allgemeiner bauaufsichtlicher Zulassung, Festigkeitsklasse ≥ 4.4	k ≤ 2500		k ≤ 2500				e ≤ 1320	e ≤ 2500						
	150		150		175	175	150	200	200		175	200		200
Montagewand F90-A nach ABP, **Bild 8.12** beachten, max. Höhe 5000 mm	3)		3)		3)	3)					3)			
Montagewand F90-A DIN 4102-4 / Tab. 48, **Bild 8.12** beachten, max. Höhe 5000 mm	e ≤ 1320		e ≤ 2500			e ≤ 2750 und k ≤ 2750	e ≤ 1250	e ≤ 2500						
	100		100		100	100	100	125			125	125		125
Montagewand F90-B DIN 4102-4 / Tab. 49, max. Höhe 5000 mm	e ≤ 1250 und k ≤ 2500		e ≤ 2500 und k ≤ 2500											
	4) 100 / 5) 130		4) 100 / 5) 130											
Montagewand F30-B	e ≤ 1125 und k ≤ 2125													
	185													
Gips-Wandbauplatten VG Orth, P–SAC 02 / III-468, **Bild 9/A17** beachten	e ≤ 2500													
	100													

Mindestwanddicken

1) ohne Oberteil **2)** mit Oberteil **3)** siehe Tab. 1: **4)** zweischalige Zarge **5)** Dryfix

- **Rauchschutz:**
  - Verwenden Sie Bodendichtungen und Dichtungskeile (siehe Bildteil Punkt 10.6 und 11).
  - Versiegeln Sie den Zargenanschluss zu den angrenzenden Bauteilen beidseits und lückenlos dauerelastisch, wenn die Zarge nicht mit Mörtel hinterfüllt ist.
  - Verwenden Sie einen Schließzylinder.
- Setzen Sie Verglasungen von Feuerschutztüren keiner direkten Sonnenstrahlung aus.

3.2 Schallschutztüren

- Die gesamte Schalldämmung ist von den umgebenden Bauteilen abhängig. Die resultierende Schalldämmung von Wand und Tür müssen Sie gesondert nachweisen, da sie nicht aus dem bewerteten Schalldämmmaß R_w bzw. R der Tür allein abgeleitet werden kann.
- Achten Sie auf vollständig anliegende Dichtung(en).
- Der Boden muss glatt sein, damit die vollständige Dichtfunktion der Bodendichtung gewährleistet ist.
- Trennen Sie den Estrich im Schwellenbereich.
- Verwenden Sie Dichtungskeile und Bodendichtung (siehe Bildteil Punkt 10.6 und 11).
- Verwenden Sie einen Schließzylinder.
- Hinterfüllen Sie die Zarge vollständig mit Mörtel.
- Verkleben Sie die auf Gehrung geschnittenen Ecken der Zargendichtung z.B. mit Köratan UC 41.

3.3 Einbruchschutztüren

- Die Tür erfüllt ihre Einbruchschutzeigenschaften nur, wenn der Riegel komplett vorgeschlossen und der Schlüssel abgezogen ist.
- Sichern Sie die Türblätter an allen 2-flügeligen RC - Türen an den Bändern mit je zwei Schrauben (siehe Bildteil Punkt 10.2)
- Verwenden Sie bei RC 3 und RC 4 nur Eckzargen, Eckzargen mit Gegenzarge und U - Zargen.
- Hinterfüttern Sie an RC 2 Türen die Zarge im Bereich der Verriegelungspunkte, Bänder und Sicherungsbolzen druckfest.
- Hinterfüttern Sie an RC 3 Türen die Zarge umlaufend druckfest.
- Montieren Sie an Türen mit Gläsern den Glashalterahmen mit Sicherungslaschen auf der Angriffsseite.
- Montieren Sie die Hinterklotzung bei Austausch der oberen Verglasung wie vor der Montage.
- Messen Sie bei 2 - flügeligen Türen die unteren Spaltmaße von der Bodenmulde.
- Erschweren Sie bei Antipaniktüren den Eingriff mit Draht z.B. durch geringe Bodenluft oder Verwendung einer Flachrundschwelle.

3.3.1 Mindestanforderungen an einbruchhemmende Türen

Widerstandsklasse nach DIN EN 1627	RC 2	RC 3
Mauerwerk DIN 1053, Teil 1 [mm] Steinfestigkeit ≥ 12	115	115
Stahlbeton, mind. C12 / 15 [mm]	100	120
Porenbetonsteine Klasse 4 [mm]	175, 115 [1)]	240
Porenbetonplatten Klasse 4 [mm]	150	–
Profilzylinder nach DIN 18252 [2)]	P2BS	P2BS
Profilzylinder [2) 3)]	Klasse A	Klasse A
Schutzbeschlag nach DIN 18257 [2)]	ES1 (ZA)	ES2 (ZA)
Schutzbeschlag [2)]	Klasse A	Klasse A
Gläser EN 356 (Feuerschutz)	P5A [4)] / P8B [5)]	P5A [4)]

1) nur 1-Flügler, wir empfehlen Wanddicken ab 150 mm
2) Schutzbeschlag oder Profilzylinder muss mit Ziehschutz (ZA) ausgeführt sein.
3) nicht zwingend im Lieferumfang enthalten
4) nicht in Flucht- und Rettungswegen
5) in Flucht- und Rettungswegen

3.4 Funktionstüren

Die Zargen müssen nicht zwingend hinterfüllt werden.

3.5 Feuerschutz und Außenanwendung

Feuerschutz und Außenanwendung bedarf einer eigenen Zulassung. Beachten Sie die separate Einbauanleitung Art- Nr. 479166.

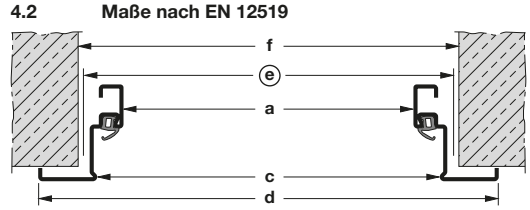
4 Montage

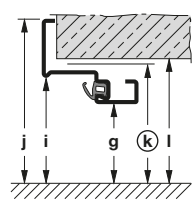
4.1 Vor der Montage

Klären Sie vor der Montage folgende Fragen:

- Welche Eigenschaften hat die Tür?
- Ist die Wandbauart zum Einbau der Tür geeignet?
- Ist die Höhenlage des Bodens bekannt (Meterriss?)
- In welche Richtung soll die Tür öffnen?
- Sind Bauvorschriften zu beachten?
- Muss die Wand im Bereich der Mauerschutzkästen ausgestemmt werden?

4.2 Maße nach EN 12519





a = (e) - 82 **g** = (k) - 42
c = (e) - 36 **i** = (k) - 19
d = (e) + 64 **j** = (k) + 31
f = (e) $^{+20}_{0}$ **l** = (k) $^{+15}_{0}$

Abb. 1: Maße

a / g lichte Öffnungsbreite / -höhe
c / i lichte Falzbreite / -höhe
d / j Zargenaußenmaßbreite / -höhe
e / k Baurichtmaßbreite / -höhe
f / l lichte Rohbaumaßbreite / -höhe (DIN 18100)

4.3 Bei der Montage

- Beachten Sie die Einbauhinweise in den Zubehörpaketen.
- Verwenden Sie Montageteile, wenn sie mitgeliefert werden, z. B. Dübellaschen, Dübel oder Schrauben.
- Verwenden Sie die unter Punkt 8 angegebenen Dübel.
- Verwenden Sie in Verbindung mit Eckzarge und Hochlochziegel bzw. Gipssteinen den Dübel FUR 10 × 80 / 100 mm und beachten Sie Punkt 8 der Einbauanleitung.
- Bohren Sie Hochlochziegel und Hohlkammersteine ohne Schlag.
- Beachten Sie den Mindestrandabstand von 50 mm bei horizontalen bzw. vertikalen Bohrungen und die Spreizrichtung der Dübel.
- Beachten Sie, dass bei Zargen ohne Bodeneinstand der untere Montagewinkel vor der Montage entfernt werden muss.

4.4 Hinweise zum Bildteil

siehe Punkt	Beschreibung
8	Einbausituationen und Zargenformen
8.1a	Stumpf
8.1b	Dünnfalz
8.1c	Dickfalz
8.2a / 8.2b	Anzahl der Befestigungspunkte
8.2c	Einbauablauf
8.3a	Ausbau der Standardtür
8.3b	Ausbau der Sicherheitstür
8.4	Zusammenbau der Eckzarge
8.5	Bodenmulde und Montagewinkel
8.6	Befestigungsteile
8.7	Minimaler Randabstand und Spreizrichtung Dübel
8.8	Einbau Schattennutprofile
8.9	Leerrohre in der Zarge
8.10	Einsetzbare E – Öffner
8.11	Mauerschutzkästen in GKF – Wände
8.12	Aufbau GKF-Wände
9.0	Einbausituationen
10.1a	Einbau mit Standardbändern
10.1b	Einbau mit 3D-Bändern
10.2	Einbau der Sicherheitstür
10.3	Einstellen der Luftspalte
10.4	Entfernen der Bodenwinkel bei Zargen ohne Bodeneinstand
10.5	Einbau der Gegenzarge
10.6	Dichtungskeile mit Silikon befestigen
10.7	Einbau der Zargendichtung
10.8	Anheben der Tür
10.9	Spannen des Federbandes Umbau Glasrahmen
10.10	Überprüfung Falleneingriff
10.11	Umbau des Lüftungsgitters
10.12	Umbau Glasrahmen
10.13	Dämmschichtbildner bei Feuer- und Rauchschutz
10.14	Dämmschichtbildner an Sicherungsbolzen
10.15	Kennzeichnung großer Glasflächen
10.16	Paniktüren und RC
10.17	Einbau Blockschloss bei Mehrfachverriegelung
11	Bodendichtungen
12	Türschließer
13.1	Schlüssel bei Paniktüren abziehen
13.2	Fehlbedienung des Schlosses vermeiden

5 Wartung und Pflege

5.1 Jährliche Wartungsarbeiten

- ▶ Kontrollieren Sie Türblatt, Zarge und Befestigung auf mechanische und korrosive Schäden.
- ▶ Kontrollieren Sie die Funktion des Schlosses und fetten Sie ggf. die Falle.
- ▶ Schmieren Sie Bolzenschlösser mit Teflonspray.
- ▶ Kontrollieren Sie die Befestigung der Anbauteile, wie z.B. Drücker, Schloss, Türschließer, Bänder usw.
- ▶ Fetten Sie Bandbolzen und Lagerringe.
- ▶ Kontrollieren Sie die Spaltmaße.
- ▶ Kontrollieren Sie die Sichtbarkeit der Kennzeichnung.

⚠ GEFAHR

Lebensgefahr durch abgelöste Dämmschichtbildner

Durch abgelöste Dämmschichtbildner verliert der Feuerschutzabschluss seine Funktion.

- ▶ Ersetzen Sie abgelöste Dämmschichtbildner, siehe Bildteil Punkt 10.13.

- ▶ Tauschen Sie defekte Teile aus.
- ▶ Verwenden Sie nur Orginal-Ersatzteile des Herstellers.

Wenn Sie Mängel feststellen, die Sie nicht selbst beheben können, beauftragen Sie eine Fachfirma.

5.2 Inbetriebnahme und Wartung von Panikverschlüssen

www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/

(siehe Punkt 9)

5.3 Erforderliche Oberflächenbehandlung für Elemente mit Standardgrundierung

Die Oberfläche von Türblatt und Zarge besteht aus einer Pulvergrundbeschichtung auf Epoxidharz Polyester Basis.

1. Entfernen Sie die Dichtung(en).
2. Schleifen Sie, bis auf die Dämmschichtbildner alle zu lackierenden Oberflächen an.
3. Reinigen Sie die Oberflächen gründlich.
4. Verwenden Sie für die Endbehandlung von Türblatt, Zarge und Dämmschichtbildner folgenden Beschichtungsaufbau:
   - Grundbeschichtung 2K Epoxi Haftgrund und Endbeschichtung mit geeigneten handelsüblichen Bautenlacken
     oder
   - Grund- und Schlussbeschichtung mit 2K PUR Lack.

   Witterungseinflüsse wie z.B. Sonneneinstrahlung können zu vorübergehender Verformung des Türblattes führen. Dunkle Anstriche verstärken diesen Effekt, der keinen Grund zur Beanstandung darstellt. Wir empfehlen helle und/oder reflektierende Anstriche. Beachten Sie das BFS Merkblatt Nr. 24 sowie die Verarbeitungshinweise der Lackhersteller und fertigen Sie eine Haftprobe an. Nehmen Sie die Endbehandlung innerhalb von drei Monaten nach Montage vor, um Korrosionsschäden zu vermeiden.
5. Bringen Sie die Dichtung(en) nach dem Trocknen der Farbe wieder an.

5.4 Reinigung

- ▶ Reinigen Sie die Oberflächen mit klarem Wasser oder handelsüblichem Lackreiniger.

5.5 Pflege von Edelstahlbauteilen

- Reinigen und pflegen Sie regelmäßig Bauteile aus Edelstahl mit der bei Hörmann erhältlichen Edel Glanz Edelstahlpflege und tragen Sie diese mit einem weichen Tuch auf.

6 Etikettierung und Kennzeichnung

Das Etikett der **Türtypen D65-1, D65-2, D65-1 OD, D65-2 OD** ist auf Grundlage der Verordnung (EU) Nr. 305/2011 mit dem CE-Konformitätskennzeichen versehen. Die herangezogene und angewandte harmonisierte europäische Produktnorm ist EN 14351-1:2006 + A1:2010 „Fenster und Türen – Produktnorm, Leistungseigenschaften – Teil 1: Fenster und Außentüren ohne Eigenschaften bezüglich Feuerschutz und/oder Rauchdichtheit.“ Die Nummer der zugehörigen CE-Kennzeichnung bzw. Leistungserklärung ist im Falzbereich der Tür auf dem oben genannten Etikett zwischen dem Herstellerlogo und dem CE-Konformitätskennzeichen angegeben.

Türen, auf deren Etikett kein CE-Konformitätskennzeichen abgebildet ist, fallen nicht in den Anwendungsbereich der oben genannten harmonisierten europäischen Produktnorm und dürfen daher nicht über eine CE-Kennzeichnung bzw. Leistungserklärung verfügen.

7 Allgemeines

Die Inbetriebnahme der Tür ist so lange untersagt, bis festgestellt wurde, dass sie nach unseren Vorgaben montiert und auf ihre ordnungsgemäße Funktion überprüft wurde. Bei einer Veränderung des Produkts verliert die Leistungserklärung ihre Gültigkeit.

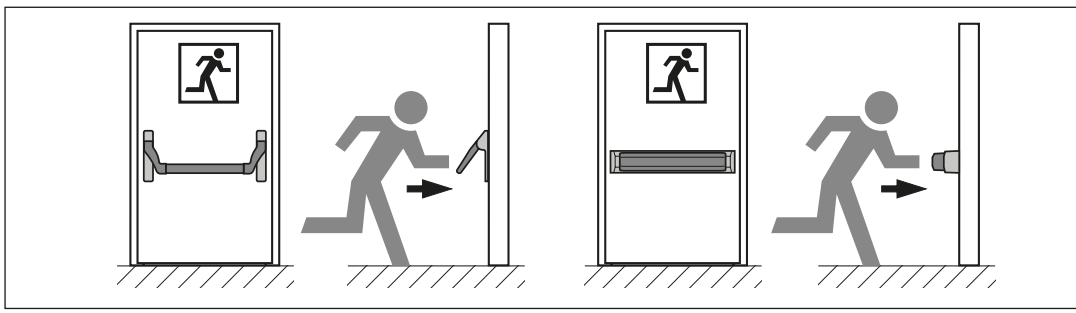
8 Leistungserklärung

Leistungserklärung siehe Punkt **8.3**:
www.hoermann.com/dop

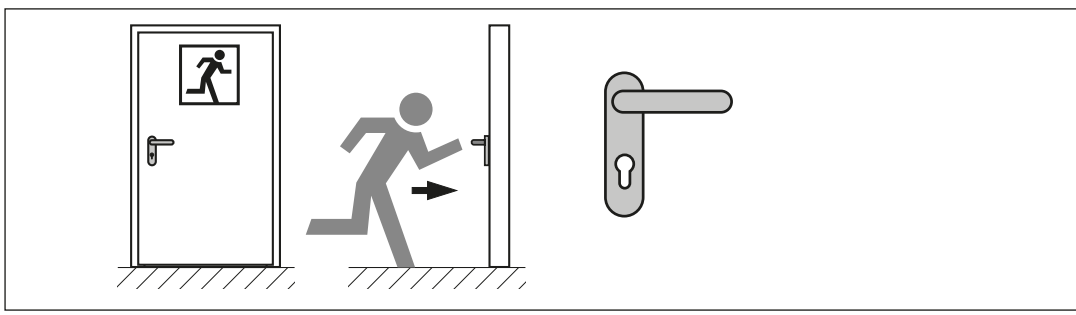
9 Wartung von Panikverschlüssen

	Inbetriebnahme	
Kunden-Nr.:	Kunde:	
Datum:	Monteur:	
Anschrift:		
Produkt:	Panikverschluss nach EN 1125	☐
	Notausgangsverschluss nach EN 179	☐

Panikverschluss nach EN 1125



Notausgangsverschluss nach EN 179



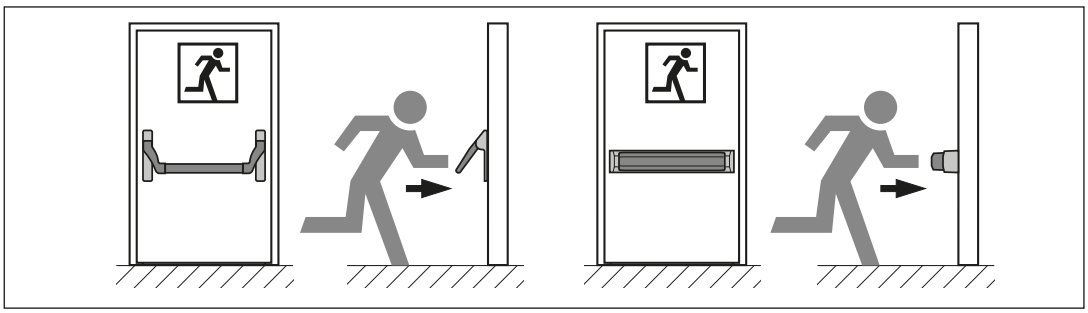
Checkliste:

Sperrgegenstücke wie Bodenmulden auf Verschmutzungen geprüft und ggf. gereinigt	☐
Montagedurchführung entsprechend der Montageanleitung des Herstellers geprüft	☐
Verschluss geschmiert entsprechend den Anweisungen des Herstellers	☐
keine nachträglichen Veränderungen festgestellt, wie z. B. nachträglicher Anbau von zusätzlichen Verriegelungsvorrichtungen	☐
sämtliche Bauteile der Anlage entsprechend der Auflistung der gelieferten und zugelassenen Bauteile	☐
keine lockeren Befestigungsschrauben an den Beschlägen festgestellt	☐
Kontrolle durchgeführt, ob bei Verschlussbetätigung und vorgeschlossenem Riegel, Falle und Riegel vollständig zurückgezogen werden	☐

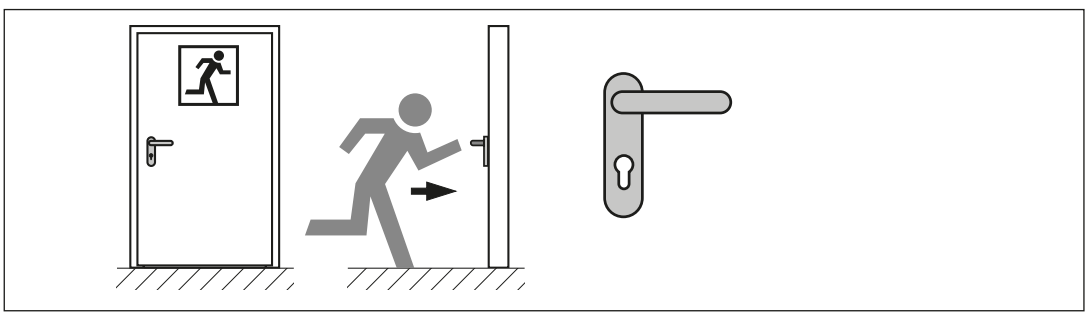
9 Wartung von Panikverschlüssen, Kopievorlage

Kunden-Nr.:	Kunde:	
Datum:	Monteur:	
Anschrift:		
Produkt:	Panikverschluss nach EN 1125	☐
	Notausgangsverschluss nach EN 179	☐

Panikverschluss nach EN 1125



Notausgangsverschluss nach EN 179



Checkliste:

Sperrgegenstücke wie Bodenmulden auf Verschmutzungen geprüft und ggf. gereinigt	☐
Montagedurchführung entsprechend der Montageanleitung des Herstellers geprüft	☐
Verschluss geschmiert entsprechend den Anweisungen des Herstellers	☐
keine nachträglichen Veränderungen festgestellt, wie z. B. nachträglicher Anbau von zusätzlichen Verriegelungsvorrichtungen	☐
sämtliche Bauteile der Anlage entsprechend der Auflistung der gelieferten und zugelassenen Bauteile	☐
keine lockeren Befestigungsschrauben an den Beschlägen festgestellt	☐
Kontrolle durchgeführt, ob bei Verschlussbetätigung und vorgeschlossenem Riegel, Falle und Riegel vollständig zurückgezogen werden	☐

Table of Contents

Dear Customer,
We are delighted that you have decided to choose a product from our company.

1 About These Instructions

Please read and follow these instructions carefully.
They provide you with important information on the fitting, maintenance and care of your steel door and are an important document for the construction file.

Should you have any questions after working through these instructions, please contact our After-Sales Service.

1.1 Warnings used

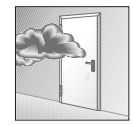
⚠ The general warning symbol indicates a danger that can lead to **injury** or **death**. In the text section, the general warning symbol will be used in connection with the caution levels described below. In the illustrated section, an additional instruction refers back to the explanation in the text.

⚠ DANGER

Indicates a danger that leads directly to death or serious injuries.

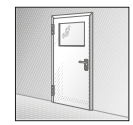
1.2 Symbols used


Fire protection


Smoke protection

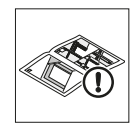

Security door

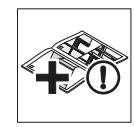

Acoustic rating

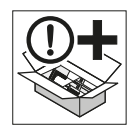

Function door


Important note

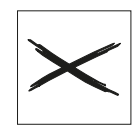

See text section


See illustrated section

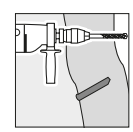

See installation instructions in accessory pack

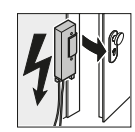

To be ordered as an accessory


Correct procedure


Non-permissible procedure


Welding


Drilling

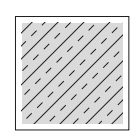

Electric door strike

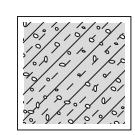

Possible burglar attack from opening side

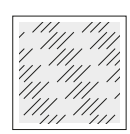

Possible burglar attack from closing side

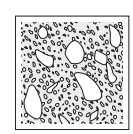

Escape route

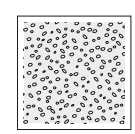

Timber


Concrete / brickwork

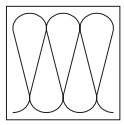

Gas concrete


Plaster


Concrete


Mortar

Frame seal CR
T60 / EI_2 60 / HBS60
T90 / EI_2 90 / HBS90
T120 / EI_2 120 / HBS120
T30 / EI_2 30 backfilled with mineral wool



Insulation material A
(EN 13501-1)

2 ⚠ Safety Instructions

⚠ DANGER

Danger to life while fitting the steel door

During fitting, the door or door frame can fall and kill persons.

▶ Prior to and during fitting, secure the door and frame against falling over.

- Only qualified and instructed personnel may perform fitting and maintenance.
- Electrical work may only be carried out by qualified electricians.
- Do not make any alterations through attachments or conversions which could impair safety.
- Exclude hazards caused by gas, dust, vapour, smoke, fire and explosion during welding, burning and grinding work.
- When welding, ensure that intumescent materials do not react as a result of heat input, as this would render the materials ineffective!

3 Information on the Door Features

Please observe that the door may have single features, a combination of fire protection, smoke protection, acoustic rating and burglar protection features, or may be a function door.

3.1 Fire doors and smoke-tight doors

- The respective approval can be found in the Internet at **www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/**. The approval must be present at the place of use.
- The information given represents the minimum requirements for installation in Germany. For installation in other countries, the corresponding national allowances are valid. However, these must be based on material parameters equal to or exceeding DIN standard.
- Observe the standards DIN 18093 (Installation of Fire Doors) and DIN 18100 (Wall Openings for Doors) or the country-specific regulations.
- In individual cases, in accordance with §22 and §23 of the German building code, the manufacturer can issue a declaration of conformity.
- **The operator / owner is responsible for the flawless condition of the door.**
- In Germany, spring hinges must **not** be used on doors and hatches having the following characteristics:
  - Leaf weight > 80 kg
  - Glazing
  - Fitting in prefabricated walls (exception: dimensions < 1000 × 1000 mm)
  - Combination as smoke-tight doors acc. to DIN 18095
  - Double leaf

  Different regulations may apply outside Germany, however, we recommend compliance with the German regulations.
- Use only those fittings, locks, closing devices and electric attached parts that are part of the door approval or are approved by the manufacturer.
- Doors rebated on 3 sides, without a bottom seal for the shaft, should be installed at the lowest floor level.
- Gypsum plasterboard walls and wall thicknesses: see Tab. 1:
- Permissible walls and wall thicknesses: see Tab. 2:
- Backfill the frame with cement-based mineral mortar (e.g. LM21 from Sakret) provided it is not described differently in the corresponding installation situation. Profile frames and corner frames (with and without counter frames) must be splayed prior to backfilling to ensure that they do not buckle under the pressure of the mortar.

Tab. 1: Permissible F 90 A prefabricated walls with minimum wall thicknesses for fire-rated and smoke-tight doors, height ≤ 5000 mm

Test certificate no.	Wall	H3 OD H_30 OD	H3-1G H_30 D1	[1] H3-2 VM H_30 D2	H16 S1 H_90 E1
P-3310/563/07-MPA BS	Knauf W 112	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3391/170/08-MPA BS	Knauf W 131	≥ 116 mm	—	—	≥ 177 mm
P-3310/563/07-MPA BS	Knauf W 132	≥ 100 mm	—	—	—
P-3202/2028-MPA BS	Knauf W 352 / W 353	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 150 mm
P-3956/1013-MPA BS	RiGips 3.40.01ff. / 3.41.01ff.	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-3014/1393-MPA BS	RiGips 3.60.20	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3020/0109-MPA BS	RiGips 6.70.10	≥ 165 mm	—	—	≥ 165 mm
P-SAC-02/III-681	LaFarge L11 – L14	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-MPA-E-98-005	LaFarge L15	≥ 100 mm	—	—	≥ 125 mm
P-3515/0519-MPA BS	LaFarge L16	≥ 150 mm	—	—	≥ 150 mm
P-3391/0890-MPA BS	LaFarge L18	—	—	—	≥ 161 mm
P-MPA-E-99-047	Promat 450.81	≥ 140 mm	—	—	≥ 140 mm
P-11-003478-PR01	B + M W 50 / 100 – W 100 / 150	≥ 100 mm	—	—	—
P-3854/1372-MPA BS	Fermacell 1 S 31/3.1	≥ 95 mm	≥ 95 mm	≥ 95 mm	—

1) Max 2750 × 2750 mm

Tab. 2: Permissible walls and minimum wall thicknesses for fire-rated and smoke-tight doors (mm) see 4.2

Wall \ Steel door	H3-1 OD H_30-1 OD		H3-2 OD H_30-2 OD		H3-1 G H_30 D1	H3-2 VM H_30 D2	H6-1 OD	H6-2 OD	H16-1 G H_90 D1	H16-2 G H_90 F-2	H16-S1 H_90 E-1	H16-1 OD H_90-1 OD		H16-2 OD H_90-2 OD
Concrete DIN 1045-1, strength ≥ C12/15	1) k ≤ 2500	2) k > 2500	1) k ≤ 2500	2) k > 2500										
	100	140	100	140	140	140	140	140	140		120	140		140
Brickwork DIN 1053-1, strength ≥ 12, mortar group ≥ 2	1) k ≤ 2500	k > 2500	1) k ≤ 2500	2) k > 2500			e ≤ 1250 and k ≤ 1750	e ≤ 1500 and k ≤ 2500				e ≤ 625 k ≤ 750	e > 625 k > 750	
	115	175	115	175	175	175	115	175	240		175	115	175	175
Gas concrete stone slabs or concrete precision blocks DIN 4165-3, strength class ≥ 4, Gas concrete slabs acc. to general official approval strength class ≥ 4.4	k ≤ 2500		k ≤ 2500				e ≤ 1320	e ≤ 2500						
	150		150		175	175	150	200	200		175	200		200
Prefabricated wall F90-A acc. to ABP, Observe **Figure 8.12**, max. height 5000 mm	3)		3)		3)	3)					3)			
Prefabricated wall F90-A DIN 4102-4 / Tab. 48, Observe **Figure 8.12**, max. height 5000 mm	e ≤ 1320		e ≤ 2500			e ≤ 2750 and k ≤ 2750	e ≤ 1250	e ≤ 2500						
	100		100		100	100	100	125			125	125		125
Prefabricated wall F90-B DIN 4102-4 / Tab. 49 max. height 5000 mm	e ≤ 1250 and k ≤ 2500		e ≤ 2500 and k ≤ 2500											
	4) 100 / 5) 130		4) 100 / 5) 130											
Prefabricated wall F30-B	e ≤ 1125 and k ≤ 2125													
	185													
Plaster wallboards VG Orth, P–SAC 02 / III-468 **Observe Figure 9/A17**	e ≤ 2500													
	100													

Minimum wall thicknesses

1) Without top part **2)** With top part **3)** see. Tab. 1: **3)** Double-shell frame **5)** Dryfix

- **Smoke protection:**
  - Use bottom seals and sealing wedges (see illustrated section, section 10.6 and section 11).
  - If the frame is not backfilled with mortar, seal the frame connection to the adjacent structural components to provide an unbroken flexible seal on both sides.
  - Use locking cylinders.
- Do not expose glazings on fire-rated doors to direct sunlight.

3.2 Acoustic-rated doors

- The overall acoustic rating is dependent on the surrounding structural components. The resulting acoustic rating of wall and door must be verified separately, as it cannot be derived from the evaluated acoustic value R_w or R of the door alone.
- Ensure that any seal(s) make full contact.
- The floor must be smooth to ensure the sealing function of the bottom seal.
- Split the screed in the threshold area.
- Use sealing wedges and a bottom seal (see illustrated section, section 10.6 and section 11).
- Use locking cylinders.
- Backfill the frame completely with mortar.
- Glue the mitre-cut corners of the frame seal with, for example, Köratan UC°41.

3.3 Burglar protection doors

- The door does not fulfil its security function unless the latch is completely closed and the key is removed.
- Use two screws each to secure the door leaves of all double-leaf RC doors on the hinges (see illustrated section, section 10.2).
- For RC 3 and RC 4, use only corner frames, corner frames with counter frames, or profile frames.
- For RC 2 doors, the frame must be back-packed at the locking points, hinges, and security bolts in order to withstand pressure.
- For RC 3 doors, the frame must be back-packed around the full perimeter to withstand pressure.
- In doors with glazing, fit the glazing frame with securing lugs towards the attack side.
- If the top glazing is replaced, fit the back-blocking in the same manner as prior to fitting.
- For double-leaf doors, measure the bottom gap dimensions from the floor trough.
- For panic doors, intrusion with a wire must be made more difficult, e.g. by a small bottom air gap or use of a semi-round threshold.

3.3.1 Minimum requirements for security doors

Resistance class acc. to DIN EN V 1627	RC 2	RC 3
Brickwork DIN 1053 part 1 [mm] strength ≥ 12	115	115
Reinforced concrete, at least C12 / 15 [mm]	100	120
Gas concrete blocks class 4 [mm]	175, 115 [1]	240
Gas concrete slabs class 4 [mm]	150	–
Profile cylinder acc. to DIN 18252 [2]	P2BS	P2BS
Profile cylinder [2] [3]	Class A	Class A
Protective fittings acc. to DIN 18257 [2]	ES1 (ZA)	ES2 (ZA)
Protective fittings [2]	Class A	Class A
EN 356 glazing (fire protection)	P5A [4] / P8B [5]	P5A [4]

1) Only single-leaf doors, we recommend wall thicknesses of 150 mm or more
2) Protective fitting or profile cylinder must be equipped with pull-off protection (ZA).
3) Not necessarily included in scope of delivery
4) not in escape and rescue routes
5) in escape and rescue routes

3.4 Function doors

The frames need not be backfilled.

3.5 Fire protection and outside application

Fire protection and outside application require their own approval. Please note the separate fitting instructions art- no. 479166.

4 Fitting

4.1 Before fitting

Before fitting, please clarify the following questions:

- What characteristics does the door have?
- Is the wall structure suitable for installing the door?
- Is the floor height known (metre line)?
- In which direction should the door open?
- Do any building regulations need to be considered?
- Does the wall need to be chiseled out in the area of the wall protective boxes?

4.2 Dimensions acc. to EN 12519

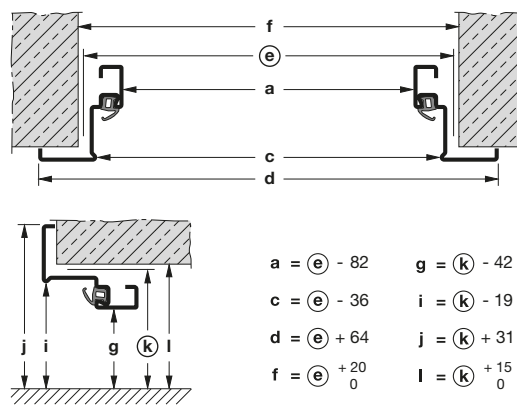


Fig. 2: Dimensions

a / g Clear opening width / height
c / i Clear rebate width / height
d / j Overall frame dimension width / height
e / k Ordering width / height
f / l Clear unfinished structure dimension width / height acc. to (DIN 18100)

4.3 When fitting

- Observe the fitting instructions in the accessory packs.
- Use fitting material if it is supplied, e.g. dowel brackets, plugs or screws.
- Use the plugs indicated in section 8.
- In combination with corner frame and vertically perforated brick or plaster, use the dowel FUR 10 × 80 / 100 mm and follow item 8 in the fitting instructions.
- Drill the vertically perforated brick and hollow bricks without impact.
- Note a minimum edge distance of 50 mm for horizontal/vertical holes as well as the expansion direction of the dowel.
- Please note that, for frames for finished floors, the bottom fitting bracket must be removed before fitting.

4.4 Information on illustrated section

See section	Description
8	Fitting situations and frame shapes
8.1a	Flush
8.1b	Thin rebate
8.1c	Thick rebate
8.2a / 8.2b	Number of fixing points
8.2c	Mounting instructions
8.3a	Removing the standard door
8.3b	Removing the security door
8.4	Assembling the corner frame
8.5	Floor trough and fitting bracket
8.6	Fastenings
8.7	Minimum edge spacing and expansion direction of the dowel
8.8	Fitting the edge recess profiles
8.9	Tubes in the frame
8.10	Suitable electric strikes
8.11	Wall protective cap in gypsum board walls
8.12	Design of GKF walls
9.0	Fitting situations
10.1a	Fitting with standard hinges
10.1b	Fitting with 3-way adjustable hinges
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10.3	Adjusting the air gaps
10.4	Removing the transportation brackets in the case of frames for finished floors
10.5	Fitting the counter frame
10.6	Fastening the sealing wedges with silicone
10.7	Fitting the frame seal
10.8	Raising the door
10.9	Tensioning the spring hinge
10.10	Latch engagement verification
10.11	Alteration of ventilation grille
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10.14	Intumescent coatings at security bolts
10.15	Marking of large glass surfaces
10.16	Anti-panic doors and RC
10.17	Block lock fitting for multiple-point locking
11	Bottom seals
12	Door closer
13.1	Removing the key in anti-panic doors
13.2	Avoiding incorrect operation of the lock

5 Care and Maintenance

5.1 Annual maintenance work

- ▶ Check the door leaf, frame and fastening for mechanical and corrosion damage.
- ▶ Check the function of the lock and grease the latch if needed.
- ▶ Lubricate the lock bolts with Teflon spray.
- ▶ Check the fastening of the attached parts, such as lever handle, lock, door closer, hinges etc.
- ▶ Grease hinge pins and bearing rings.
- ▶ Check the gap dimensions.
- ▶ Check that the identification is visible.

⚠ DANGER

Danger to life due to detached intumescent coatings

The fire door loses its function if the intumescent coatings are detached.

- ▶ Replace intumescent coatings that have detached, see illustrated section 10.13.

- ▶ Replace defective parts.
- ▶ Only use original spare parts from the manufacturer.

If you discover defects that you yourself cannot remedy, call in a specialist company.

5.2 Initial start-up and maintenance of anti-panic locks

www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/

(See section 9)

5.3 Required surface treatment for elements with standard priming

The surface of door leaf and frame consists of a primer powder coating on epoxy resin polyester basis.

1. Remove the seal(s).
2. With the exception of the intumescent coatings, sand all of the surfaces to be painted.
3. Clean the surfaces thoroughly.
4. To finish door leaf, frame and the intumescent coating, use the following coating system:
   - Primer-coating 2-component epoxy etch primer and final coating with suitable commercially available construction paint
     or
   - Primer and final coating with 2-component PUR paint.

   Adverse effects of the weather, such as solar radiation, can lead to temporary deformation of the door leaf. Dark paints increase this effect, which is no cause for complaint.
   We recommend light and / or reflective paints. Please note BFS information sheet no. 24, follow the directions of the paint manufacturer and test a sample surface. Finish the products within three months of fitting to avoid corrosion damage.
5. After the paint has dried, reattach the seal(s).

5.4 Cleaning

- ▶ Clean the surfaces with clear water or conventional paint cleaner.

5.5 Cleaning stainless steel components

- ▶ Regularly clean stainless steel components by applying “Edel Glanz” stainless steel cleaner (available from Hörmann) with a soft cloth.

6 Labelling and marking

The label for **door types D65-1, D65-2, D65-1 OD, D65-2 OD** bears the CE conformity mark based on the (EU) Directive no. 305/2011. The European product standard used and applied is EN 14351-1:2006 + A1:2010 “Windows and doors – Productstandard, performance characteristics – Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics.” The number of the corresponding CE mark or declaration of performance is indicated in the rebate area of the door on the above-mentioned label between the manufacturer logo and the CE conformity mark.

The above-mentioned harmonised European product standard does not apply for doors that do not bear a CE conformity mark on their labels; thus those doors must not have a CE mark and a declaration of performance.

7 General

Putting the door into operation is prohibited until it has been established that the door has been installed in accordance with our specifications and its function has been properly tested. A product‘s declaration of performance becomes invalid if an alteration to the product is carried out.

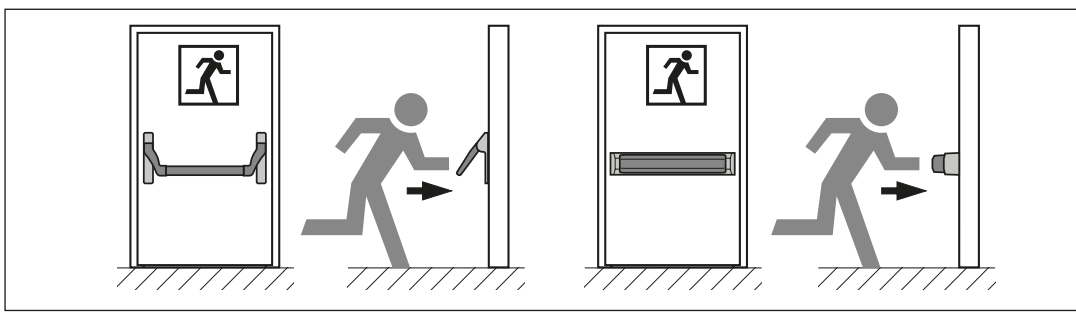
8 Declaration of performance

Declaration of performance see section **8.3**:
www.hoermann.com/dop

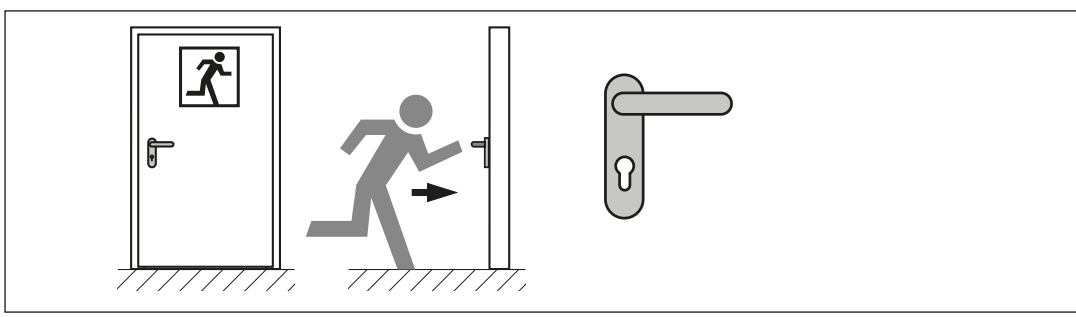
9 Maintenance of anti-panic locks

	Initial start-up	
Customer no.:	Customer:	
Date:	Fitter name:	
Address:		
Product:	Anti-panic lock according to EN 1125	☐
	Emergency exit lock acc. to EN 179	☐

Anti-panic lock according to EN 1125



Emergency exit lock acc. to EN 179



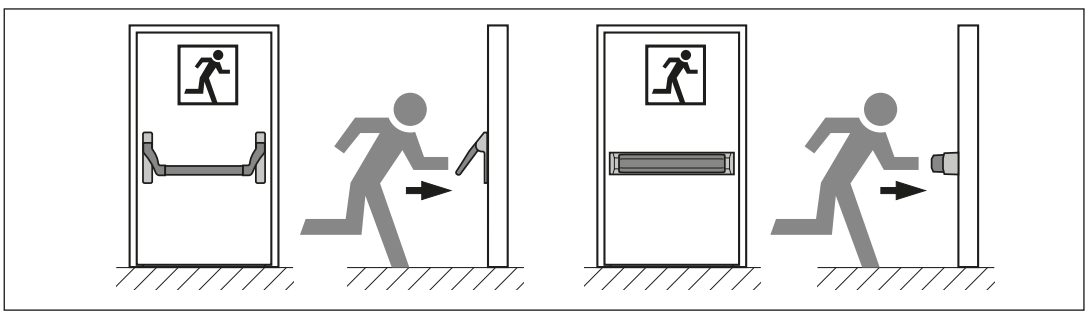
Check list:

Lock counter pieces, such as floor troughs, checked for soiling and cleaned if required	☐
Fitting work checked according to fitting instructions of the manufacturer	☐
Lock lubricated according to manufacturer's instructions	☐
No subsequent changes found, such as retrofitting of additional locking devices	☐
All system components comply with the list of supplied and approved components	☐
No loose fitting screws found on the fittings	☐
Check carried out to ensure that the latch and bolt are completely withdrawn when the lock is actuated and the bolt is pre-locked	☐

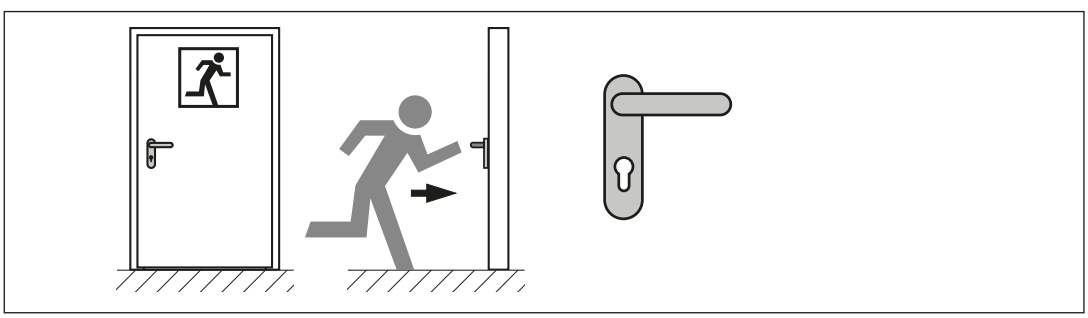
9 Maintenance of anti-panic locks, copy template

Customer no.:	Customer:	
Date:	Fitter name:	
Address:		
Product:	Anti-panic lock according to EN 1125	☐
	Emergency exit lock acc. to EN 179	☐

Anti-panic lock according to EN 1125



Emergency exit lock acc. to EN 179



Check list:

Lock counter pieces, such as floor troughs, checked for soiling and cleaned if required	☐
Fitting work checked according to fitting instructions of the manufacturer	☐
Lock lubricated according to manufacturer's instructions	☐
No subsequent changes found, such as retrofitting of additional locking devices	☐
All system components comply with the list of supplied and approved components	☐
No loose fitting screws found on the fittings	☐
Check carried out to ensure that the latch and bolt are completely withdrawn when the lock is actuated and the bolt is pre-locked	☐

Table des matières

Cher client,
Nous vous remercions d'avoir opté pour un produit de notre société.

1 A propos de ce mode d'emploi

Lisez attentivement et suivez les présentes instructions. Elles vous fournissent des informations importantes pour l'installation, la maintenance et l'entretien de votre porte en acier et représentent un document essentiel pour le dossier de construction.

Si vous avez encore des questions après avoir parcouru les présentes instructions, veuillez vous mettre en relation avec notre service clientèle.

1.1 Consignes de sécurité utilisées

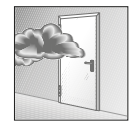
⚠ Ce symbole général d'avertissement désigne un danger susceptible de causer des **blessures** graves ou la **mort**. Dans la partie texte, le symbole général d'avertissement est utilisé en association avec les degrés de danger décrits ci-dessous. Dans la partie illustrée, une indication supplémentaire renvoie aux explications du texte.

⚠ DANGER

Désigne un danger provoquant immanquablement la mort ou des blessures graves.

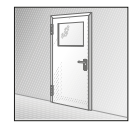
1.2 Symboles utilisés


Coupe-feu


Anti-fumée

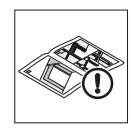

Porte de sécurité

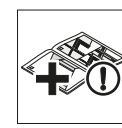

Insonorisation


Porte de fonction


Remarque importante


Voir partie texte


Voir partie illustrée

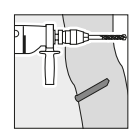

Voir instructions de montage du paquet d'accessoires

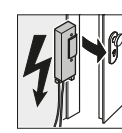

A commander comme accessoire


Procédure correcte


Procédure interdite


Soudure

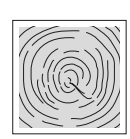

Perçage

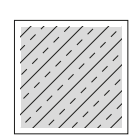

Gâche électrique

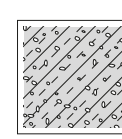

Risque d'intrusion sur le côté d'ouverture

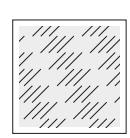

Risque d'intrusion sur le côté de fermeture

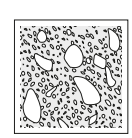

Issue de secours

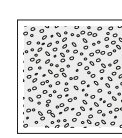

Bois


Maçonnerie / béton

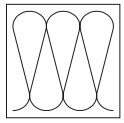

Béton cellulaire


Plâtre


Béton


Mortier

Joint d'huisserie CR
T60 / EI_2 60 / HBS60
T90 / EI_2 90 / HBS90
T120 / EI_2 120 / HBS120
T30 / EI_2 30 avec remplissage en laine minérale



Matériau isolant A
(EN 13501-1)

2 ⚠ Consignes de sécurité

⚠ DANGER

Danger mortel lors du montage de la porte en acier
Durant le montage, la porte ou l'encadrement de porte sont susceptibles de choir sur une personne.
▶ Avant et pendant les travaux de montage, protégez la porte et l'huisserie de toute chute.

- Ne confiez le montage et l'entretien qu'à un personnel qualifié et formé.
- Ne confiez les travaux électriques qu'aux seuls professionnels formés.
- Ne procédez à aucune extension ou modification susceptible d'affecter la sécurité de la porte.
- Lors des travaux de soudure, de brasage ou de meulage, assurez-vous que tout danger d'incendie et d'explosion ou autres dangers provoqués par des éléments tels que feu, gaz, poussière, vapeur ou fumée sont exclus.
- Lors de travaux de soudure, évitez que les matériaux de construction moussants ne réagissent sous l'influence de la chaleur et ne perdent par là leur effet.

3 Informations sur les propriétés de porte

Veuillez noter que la porte peut posséder des propriétés individuelles, une combinaison de propriétés coupe-feu, anti-fumée, insonorisantes et anti-intrusion ou être une porte de fonction.

3.1 Portes coupe-feu et anti-fumée

- Vous pouvez consulter l'agréation correspondante sur le site **www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/**. L'agréation doit être présente sur le site d'utilisation.
- Les informations indiquées correspondent aux exigences minimales pour une installation en Allemagne. En cas d'installation dans d'autres pays, les agréations nationales respectives s'appliquent. Toutefois, les valeurs caractéristiques des matériaux doivent au minimum correspondre aux normes DIN.
- Observe the standards DIN 18093 (Installation of Fire Doors) and DIN 18100 (Wall Openings for Doors) or the country-specific regulations.
- Dans certains cas, le fabricant peut établir une déclaration de conformité selon les § 22 et 23 du code modèle de la construction.
- **L'exploitant est responsable de l'état correct de la porte.**
- En Allemagne, les paumelles à ressort ne doivent **pas** être utilisées sur les portes et les trappes possédant les caractéristiques suivantes:
  – Poids de vantail > 80 kg
  – Vitrage
  – Pose sur parois préfabriquées (exception: dimensions < 1000 × 1000 mm)
  – Combinaison comme portes coupe-feu selon la norme DIN 18095
  – A 2 vantaux

  D'autres prescriptions sont applicables en dehors de l'Allemagne, toutefois nous vous recommandons de respecter les directives allemandes.
- Parois en carton-plâtre et épaisseurs de paroi (en mm): voir Tab. 1:
- Parois et épaisseurs de paroi autorisées: voir Tab. 2:
- Utilisez uniquement les ferrures, serrures, moyens de fermeture et pièces électriques compris dans l'agréation de la porte ou disposant d'une autorisation expresse du fabricant.
- Montez les portes à recouvrement de ferrure sur 3 côtés sans fermeture de regard inférieure dans des regards au niveau de sol le plus bas.

Tab. 1: Cloisons sèches F 90 A homologuées avec épaisseurs mur minimales pour portes coupe-feu et anti-fumée, hauteur ≤ 5000 mm

Rapport de test n°	Paroi	H3 OD H_30 OD	H3-1G H_30 D1	[1] H3-2 VM H_30 D2	H16 S1 H_90 E1
P-3310/563/07-MPA BS	Knauf W 112	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3391/170/08-MPA BS	Knauf W 131	≥ 116 mm	—	—	≥ 177 mm
P-3310/563/07-MPA BS	Knauf W 132	≥ 100 mm	—	—	—
P-3202/2028-MPA BS	Knauf W 352 / W 353	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 150 mm
P-3956/1013-MPA BS	RiGips 3.40.01ff. / 3.41.01ff.	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-3014/1393-MPA BS	RiGips 3.60.20	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3020/0109-MPA BS	RiGips 6.70.10	≥ 165 mm	—	—	≥ 165 mm
P-SAC-02/III-681	LaFarge L11 – L14	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-MPA-E-98-005	LaFarge L15	≥ 100 mm	—	—	≥ 125 mm
P-3515/0519-MPA BS	LaFarge L16	≥ 150 mm	—	—	≥ 150 mm
P-3391/0890-MPA BS	LaFarge L18	—	—	—	≥ 161 mm
P-MPA-E-99-047	Promat 450.81	≥ 140 mm	—	—	≥ 140 mm
P-11-003478-PR01	B + M W 50 / 100 – W 100 / 150	≥ 100 mm	—	—	—
P-3854/1372-MPA BS	Fermacell 1 S 31/3.1	≥ 95 mm	≥ 95 mm	≥ 95 mm	—

1) Max. 2750 × 2750 mm

Tab. 2: Parois homologuées et épaisseurs mur minimales pour portes coupe-feu et anti-fumée (mm) voir 4.2

Paroi \ Porte en acier	H3-1 OD H_30-1 OD		H3-2 OD H_30-2 OD		H3-1 G H_30 D1	H3-2 VM H_30 D2	H6-1 OD	H6-2 OD	H16-1 G H_90 D1	H16-2 G H_90 F-2	H16-S1 H_90 E-1	H16-1 OD H_90-1 OD		H16-2 OD H_90-2 OD
Béton selon la norme DIN 1045-1, stabilité ≥ C12/15	[1] k ≤ 2500	[2] k > 2500	[1] k ≤ 2500	[2] k > 2500										
	100	140	100	140	140	140	140	140	140		120	140		140
Maçonnerie selon la norme DIN 1053-1, résistance à la pierre ≥ 12, groupe de mortier ≥ 2	[1] k ≤ 2500	k > 2500	[1] k ≤ 2500	[2] k > 2500			e ≤ 1250 ou k ≤ 1750	e ≤ 1500 ou k ≤ 2500				e ≤ 625 k ≤ 750	e > 625 k > 750	
	115	175	115	175	175	175	115	175	240		175	115	175	175
Bloc en béton cellulaire ou parpaings DIN 4165-3, classe de résistance ≥ 4, Plaques de béton cellulaire selon par. = autorisation générale de l'office de construction, cl. de résistance ≥ 4.4	k ≤ 2500		k ≤ 2500				e ≤ 1320	e ≤ 2500						
	150		150		175	175	150	200	200		175	200		200
Paroi préfabriquée F 90 A selon ABP, **Fig. 8.12,** respectez la hauteur max. de 5000 mm	[3]		[3]		[3]	[3]					[3]			
Paroi préfabriquée F 90 A DIN 4102-4/Tab. 48, **Fig. 8.12,** respectez la hauteur max. de 5000 mm	e ≤ 1320		e ≤ 2500			e ≤ 2750 ou k ≤ 2750	e ≤ 1250	e ≤ 2500						
	100		100		100	100	100	125			125	125		125
Paroi préfabriquée F 90 B DIN 4102-4/Tab. 49 max. de 5000 mm	e ≤ 1250 ou k ≤ 2500		e ≤ 2500 ou k ≤ 2500											
	[4] 100 / [5] 130		[4] 100 / [5] 130											
Paroi préfabriquée F30-B	e ≤ 1125 ou k ≤ 2125													
	185													
Carreaux à parois en plâtre VG Orth, P–SAC 02 / III-468, **Fig. 9/A17**	e ≤ 2500													
	100													

Epaisseurs mur minimales

1) Sans imposte **2)** Avec imposte **3)** voir Tab. 1: **4)** Huisserie à double tôle **5)** Dryfix

- Procédez à un remplissage arrière de l'huisserie à l'aide de mortier minéral à base de ciment (par exemple LM 21 de Sakret), si cela ne va toutefois pas à l'encontre de la situation de montage. Avant le remplissage arrière, étançonnez les huisseries enveloppantes et huisseries d'angle (avec ou sans contre-huisserie) afin d'éviter qu'elles ne fléchissent sous la pression du mortier.
- **Protection anti-fumée:**
  - Utilisez des joints de sol et des cales d'étanchéité (voir partie illustrée, points 10.6 et 11).
  - Si l'huisserie n'est pas remplie de mortier à l'arrière, scellez le raccord entre l'huisserie et les éléments de construction attenant sur les deux faces avec un produit à élasticité durable, sans laisser d'interstices.
  - Utilisez des cylindres de fermeture.
- Les vitrages des portes coupe-feu ne doivent pas être soumis à un rayonnement solaire direct.

3.2 Portes antibruit

- L'intégralité de l'isolation acoustique dépend des éléments de construction attenants. Vous devez procéder à une détermination spécifique de l'isolation acoustique de la paroi et de la porte en résultant puisqu'elle ne peut être déduite au seul moyen de l'isolation acoustique R_w ou R évaluée de la porte.
- Assurez-vous que le(s) joint(s) est/sont complet(s).
- Le sol doit être lisse afin d'assurer parfaitement la fonction d'étanchéité du joint de sol.
- Séparez la chape de béton dans la zone de seuil.
- Utilisez des joints de sol et des cales d'étanchéité (voir partie illustrée, points 10.6 et 11).
- Utilisez des cylindres de fermeture.
- Procédez à un remplissage arrière complet de l'huisserie.
- Collez les angles coupés en onglet du joint d'huisserie par exemple avec Köratan UC 41.

3.3 Portes anti-intrusion

- La porte ne satisfait aux exigences de sécurité anti-intrusion que si le verrou est entièrement fermé et que la clé est retirée de la serrure.
- Fixez les panneaux de porte sur toutes les portes RC à 2 vantaux de classe au niveau des paumelles avec deux vis pour chaque panneau (voir partie illustrée, points 10.2).
- N'utilisez pour RC 3 et RC 4 que des huisseries d'angle, des huisseries d'angle avec contre-huisserie et des huisseries enveloppantes.
- Pour les portes RC 2, procédez à un remplissage de l'huisserie résistant à la pression aux niveaux des points de verrouillage, des paumelles et des points d'anti-dégondage.
- Pour les portes RC 3, procédez à un remplissage périphérique de l'huisserie résistant à la pression.
- Pour les portes à vitrages, montez le châssis à parcloses avec des pattes de fixation de sécurité sur le côté d'attaque.
- Lors du remplacement du vitrage supérieur, montez le calage arrière de la même manière qu'avant le montage.
- Pour les portes à 2 vantaux, mesurez les dimensions inférieures de la fente de la rainure de sol.
- Pour les portes antipaniques, rendez toute intrusion à l'aide d'un fil métallique quasi impossible, notamment par un jeu au sol réduit ou en utilisant un seuil bombé.

3.3.1 Exigences minimales des portes anti-intrusion

Classe de résistance selon DIN EN V 1627	RC 2	RC 3
Maçonnerie DIN 1053 partie 1 [mm], résistance à la pierre ≥ 12	115	115
Béton armé, min. C12 / 15 [mm]	100	120
Briques en béton cellulaire classe 4 [mm]	175, 115 [1]	240
Plaques en béton cellulaire classe 4 [mm]	150	-
Cylindre profilé selon DIN 18252 [2]	P2BS	P2BS
Cylindre profilé [2] [3]	Classe A	Classe A
Ferrure de protection selon DIN 18257 [2]	ES1 (ZA)	ES2 (ZA)
Ferrure de protection [2]	Classe A	Classe A
Vitrages EN 356 (coupe-feu)	P5A [4] / P8B [5]	P5A [4]

1) Uniquement pour les portes à 1 vantail, nous recommandons une épaisseur de paroi supérieure à 150 mm
2) La ferrure de protection ou le cylindre profilé doit être équipé(e) d'une protection contre l'arrachement (ZA).
3) Ne fait pas nécessairement partie du matériel livré
4) Non réalisable pour les issues de secours
5) Dans les issues de secours

3.4 Portes de fonction

Les huisseries ne doivent pas obligatoirement faire l'objet d'un remplissage arrière.

3.5 Protection coupe-feu et utilisation en extérieur

Les protection coupe-feu et utilisation en extérieur requièrent une homologation séparée. Veuillez observer la notice de montage séparée, n° d'art. 479166.

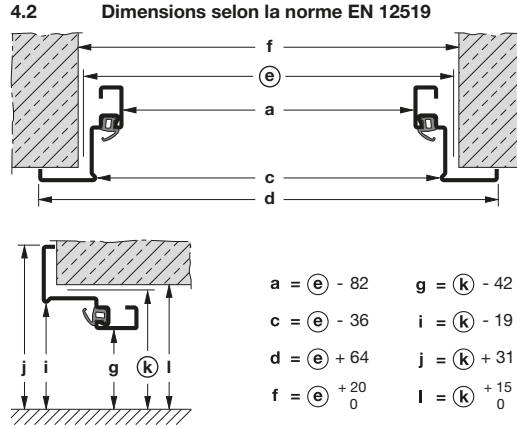
4 Montage

4.1 Avant le montage

Avant le montage, veuillez éclaircir les points suivants:

- Quelles sont les propriétés de la porte?
- Le type de paroi est-il adapté au montage de la porte?
- Le niveau du sol est-il connu (repère à un mètre)?
- Dans quelle direction la porte doit-elle ouvrir?
- Des prescriptions de construction doivent-elles être respectées?
- La paroi doit-elle être mortaisée au niveau de l'huisserie?

4.2 Dimensions selon la norme EN 12519



a = (e) - 82 **g** = (k) - 42

c = (e) - 36 **i** = (k) - 19

d = (e) + 64 **j** = (k) + 31

f = (e) $^{+20}_{0}$ **l** = (k) $^{+15}_{0}$

Abb. 3: Dimensions

a / g Largeur / hauteur d'ouverture libre
c / i Largeur / hauteur de feuillure libre
d / j Largeur / hauteur hors-tout cadre
e / k Largeur / hauteur jour
f / l Largeur / hauteur jour de gros-œuvre (DIN 18100)

4.3 Lors du montage

- Respectez les consignes de montage fournies dans les paquets d'accessoires.
- Utilisez le matériel de montage fourni, par exemple pattes de fixation à cheviller, chevilles ou vis.
- Utilisez les chevilles indiquées au point 8.
- Avec une huisserie d'angle et une brique creuse ou du gypse, utilisez la cheville FUR 10 × 80 / 100 mm et observez le point 8 de la notice de montage.
- Forez la brique creuse et les parpaings sans à-coups.
- Respectez la distance minimale de 50 mm pour les forages horizontaux ou verticaux et la direction d'écartement de la cheville.
- Pour les huisseries sans encastrement, notez que l'équerre de montage inférieure doit être retirée avant le montage.

4.4 Remarques concernant la partie illustrée

Voir point	Description
8	Situations de montage et formes d'huisserie
8.1a	Affleurant
8.1b	Feuillure mince
8.1c	Feuillure épaisse
8.2a / 8.2b	Nombre de points de fixation
8.2c	Instructions de montage
8.3a	Démontage de la porte standard
8.3b	Démontage de la porte de sécurité
8.4	Assemblage de l'huisserie d'angle
8.5	Rainure de sol et équerres de montage
8.6	Matériel de fixation
8.7	Distance minimale au bord et direction d'écartement de la cheville
8.8	Montage des profils à rainure
8.9	Tubes vides dans l'huisserie
8.10	Suitable electric strikes
8.11	Boîtiers de protection muraux pour murs en plaques de carton-plâtre coupe-feu
8.12	En applique pour parois de placo-plâtre coupe-feu
9.0	Situations de montage
10.1a	Pose avec paumelles standards
10.1b	Pose avec paumelles 3D
10.2	Montage de la porte de sécurité
10.3	Réglage du jeu
10.4	Retrait des équerres de transport en cas d'huisseries sans encastrement au sol
10.5	Montage de la contre-huisserie
10.6	Fixer les cales d'étanchéité avec du silicone
10.7	Pose du joint d'huisserie
10.8	Relevage de la porte
10.9	Mise sous tension des paumelles à ressort
10.10	Vérification engagement
10.11	Réadapter la grille d'aération
10.12	Réadapter le châssis vitré
10.13	Composants de la couche isolante pour protection coupe-feu et anti-fumée
10.14	Créateur de couche isolante sur points d'anti-dégondage
10.15	Marking of large glass surfaces
10.16	Portes antipanique et RC
10.17	Pose d'une serrure monobloc en cas de verrouillage multiple
11	Joints de sol
12	Ferme-porte
13.1	Removing the key in anti-panic doors
13.2	Avoiding incorrect operation of the lock

5 Maintenance et entretien

5.1 Travaux de maintenance annuels

- ▶ Contrôlez le panneau de porte, l'huisserie et la fixation quant aux éventuels dommages mécaniques et de corrosion.
- ▶ Assurez-vous du bon fonctionnement de la serrure et, le cas échéant, graissez le pêne.
- ▶ Graissez les serrures à pêne dormant à l'aide d'un aérosol au téflon.
- ▶ Vérifiez la fixation des pièces telles que béquille, serrure, ferme-porte, paumelle, etc.
- ▶ Graissez les broches de paumelle et les anneaux de roulement.
- ▶ Contrôlez les dimensions de la fente.
- ▶ Assurez-vous que l'identification soit visible.

⚠ DANGER

Danger mortel dû à des créateurs de couche isolante défaits

En raison de créateurs de couche isolante défaits, la fermeture coupe-feu perd de sa fonction.

- ▶ Remplacez les créateurs de couche isolante défaits, voir partie illustrée, point 10.13.

- ▶ Remplacez les pièces défectueuses.
- ▶ N'utilisez que les pièces détachées originales du fabricant.

Si vous identifiez certaines défaillances auxquelles vous n'êtes pas en mesure de remédier, confiez la réparation à une entreprise spécialisée.

5.2 Mise en service et maintenance de fermetures antipanique

www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/

(Voir point 9)

5.3 Traitement de surface nécessaire pour blocs-portes avec couche d'apprêt standard

La surface du panneau de porte et de l'huisserie est constituée d'un revêtement d'apprêt à base de poudre de résine polyester époxydique.

1. Retirez le(s) joint(s).
2. Poncez toutes les surfaces à laquer jusqu'aux composants de la couche isolante.
3. Nettoyez minutieusement les surfaces.

4. Pour la couche de finition du panneau de porte, de l'huisserie et des composants de la couche isolante, utilisez la structure de revêtement suivante :
   – Revêtement d'apprêt par peinture d'accroche époxy à 2 composants et revêtement de finition avec peintures pour bâtiments courantes appropriées ou
   – Revêtements d'apprêt et de finition par vernis PUR à 2 composants.

   Les influences climatiques telles que le rayonnement solaire peuvent entraîner une déformation temporaire du panneau de porte. Les peintures foncées renforcent cet effet, ce qui n'est pas un motif de réclamation. Nous recommandons des revêtements de couleur claire et/ou réfléchissants. Respectez la fiche technique BFS n° 24 ainsi que les consignes d'utilisation du fabricant de peinture et effectuez un test d'adhérence. Afin d'éviter tout dégât dû à la corrosion, procédez à la couche de finition dans les trois mois suivants le montage.
5. Après séchage de la peinture, replacez le(s) joint(s).

5.4 Nettoyage

▶ Nettoyez les surfaces à l'eau claire ou à l'aide de produits de nettoyage pour surfaces laquées du commerce.

5.5 Entretien des composants en acier inoxydable

▶ Nettoyez et entretenez régulièrement les composants en acier inoxydable en appliquant le produit d'entretien pour acier inoxydable Edel Glanz (disponible chez Hörmann) à l'aide d'un chiffon doux.

6 Etiquetage et marquage

L'étiquette des **types de porte D65-1, D65-2, D65-1 OD, D65-2 OD** est pourvue du sigle de conformité CE selon le décret européen n° 305/2011. La norme de produit européenne apparentée et connexe est EN 14351-1:2006 + A1:2010 « Fenêtres et portes – Norme produit, caractéristiques de performance – Partie 1 : Fenêtres et blocs-portes extérieurs pour piétons sans caractéristiques de résistance au feu et/ou dégagement de fumée ». Le numéro du sigle CE ou de la déclaration de performance respectif/ respective figure au niveau de la feuillure de la porte, sur l'étiquette mentionnée ci-dessus, entre le logo du fabricant et le sigle de conformité CE.

Les portes munies d'étiquettes sans sigle de conformité CE ne sont pas concernées par le domaine d'application de la norme produits européenne harmonisée ci-dessus et ne peuvent par conséquent disposer d'un marquage CE et/ou d'une déclaration de performance.

7 Généralités

La mise en service de la porte est interdite jusqu'à constatation de sa conformité avec nos prescriptions d'installation et de son fonctionnement irréprochable. Toute modification du produit annule la validité de la présente la déclaration de performance.

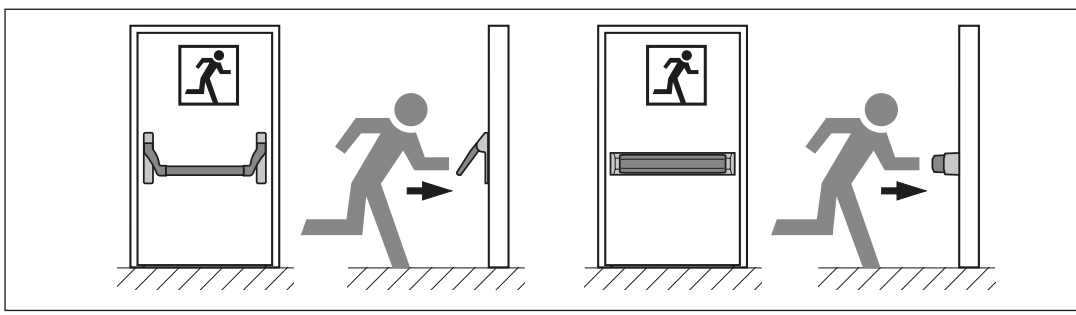
8 Déclaration de performance

Déclaration de performance voir point **8.3**:
www.hoermann.com/dop

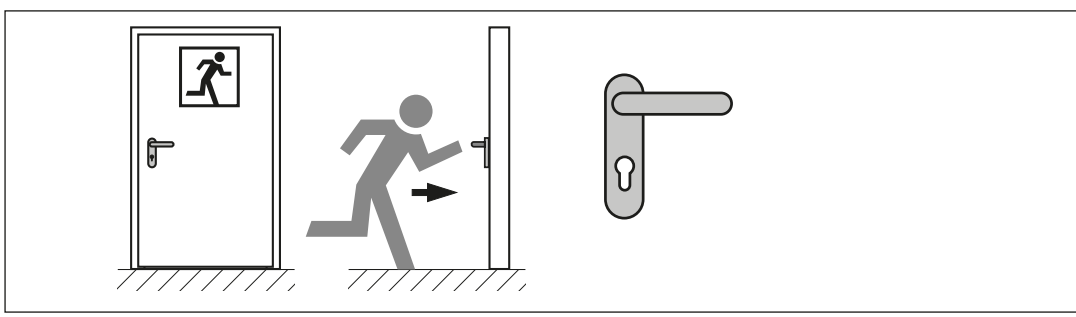
9 Maintenance de fermetures antipanique

	Mise en service	
N° de client :	Client :	
Date :	Monteur :	
Adresse :		
Produit :	Fermeture antipanique selon EN 1125	☐
	Verrouillage d'issue de secours selon EN 179	☐

Fermeture antipanique selon EN 1125



Verrouillage d'issue de secours selon EN 179



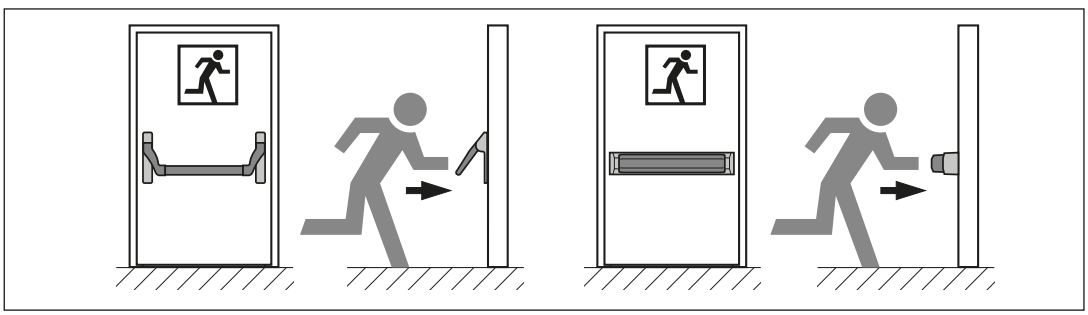
Liste de contrôle :

Contrôle de l'encrassement des pendants de blocage tels que les rainures de sol, nettoyage le cas échéant	☐
Contrôle de la conformité du montage aux instructions de montage du fabricant	☐
Fermeture graissée selon les instructions du fabricant	☐
Aucune modification effectuée par la suite, comme par exemple postéquipement de dispositifs de verrouillage supplémentaires	☐
Ensemble des composants de l'installation conforme à la liste des composants fournis et homologués	☐
Vis de fixation des ferrures toutes bien serrées	☐
Contrôle de la rétractation complète des pênes et verrous ne fois la fermeture actionnée et le pêne enclenché	☐

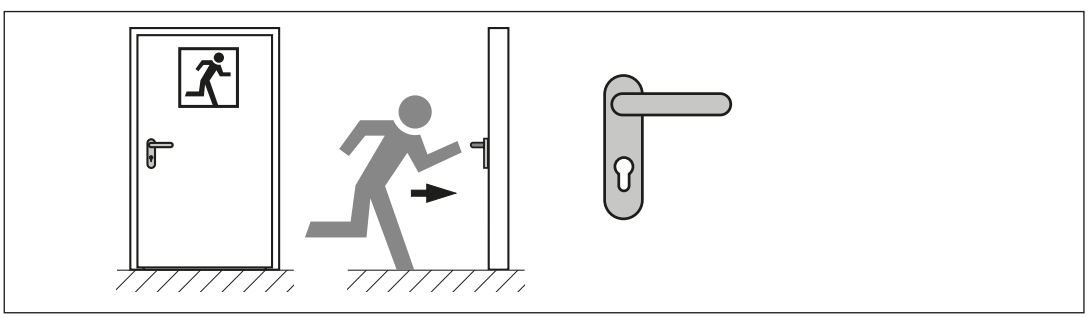
9 Maintenance de fermetures antipanique, copie de référence

N° de client :	Client :	
Date :	Monteur :	
Adresse :		
Produit :	Fermeture antipanique selon EN 1125	☐
	Verrouillage d'issue de secours selon EN 179	☐

Fermeture antipanique selon EN 1125



Verrouillage d'issue de secours selon EN 179



Liste de contrôle :

Contrôle de l'encrassement des pendants de blocage tels que les rainures de sol, nettoyage le cas échéant	☐
Contrôle de la conformité du montage aux instructions de montage du fabricant	☐
Fermeture graissée selon les instructions du fabricant	☐
Aucune modification effectuée par la suite, comme par exemple postéquipement de dispositifs de verrouillage supplémentaires	☐
Ensemble des composants de l'installation conforme à la liste des composants fournis et homologués	☐
Vis de fixation des ferrures toutes bien serrées	☐
Contrôle de la rétractation complète des pênes et verrous ne fois la fermeture actionnée et le pêne enclenché	☐

Indice

Gentile cliente,
siamo lieti che Lei abbia scelto un prodotto di nostra produzione.

1 Su queste istruzioni

Legga attentamente le seguenti istruzioni, che Le forniranno importanti informazioni sull'installazione, sull'uso e la manutenzione della Sua porta d'acciaio e che rappresenteranno anche un documento importante per gli atti di carattere edile.

La preghiamo di rivolgersi al nostro Servizio Assistenza Clienti, se dopo aver letto le presenti istruzioni desiderasse ulteriori chiarimenti.

1.1 Avvertenze utilizzate

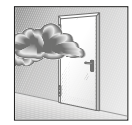
⚠ Il simbolo di avvertimento generale indica il rischio di **lesioni fisiche** o addirittura di **morte**. Nel testo il simbolo di avvertimento generale viene utilizzato unitamente ai livelli di avvertenza descritti nel paragrafo seguente. Nella sezione illustrata un'ulteriore indicazione rinvia alle spiegazioni nel testo.

⚠ PERICOLO

Indica un rischio sicuro di lesioni gravi o di morte.

1.2 Simboli utilizzati


Protezione antincendio


Protezione antifumo


Porta di sicurezza

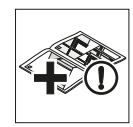

Isolamento acustico

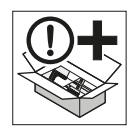

Porta


Avvertenza importante

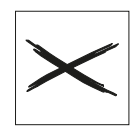

Vedere la parte istruzioni


Vedere la parte illustrata

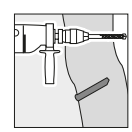

Consultare le istruzioni per il montaggio nel pacco di accessori

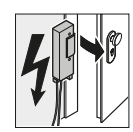

Da ordinare come accessorio


Procedimento corretto


Procedimento non corretto (procedura)


Saldatura


Praticare fori

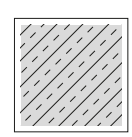

Apriporta elettrico

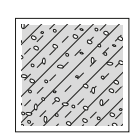

Rischio di scasso sul lato apertura

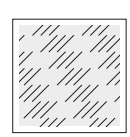

Rischio di scasso sul lato chiusura

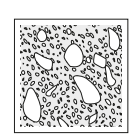

Via di fuga

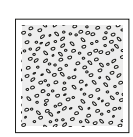

Legno


Muratura / calcestruzzo

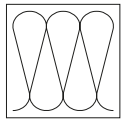

Calcestruzzo cellulare


Gesso


Calcestruzzo


Malta

Guarnizione per telaio CR
T60 / EI_2 60 / HBS60
T90 / EI_2 90 / HBS90
T120 / EI_2 120 / HBS120
T30 / EI_2 30 con riempimento in lana minerale



Materiale isolante A (EN 13501-1)

2 ⚠ Indicazioni di sicurezza

⚠ PERICOLO

Pericolo di morte durante il montaggio della porta in acciaio

Durante il montaggio la porta o il suo telaio possono cadere e uccidere persone.

▶ Assicurare la porta ed il telaio contro incidenti prima e durante il montaggio.

- Per il montaggio e la manutenzione impiegare solo personale specializzato e appositamente istruito.
- Fare eseguire i lavori sull'impianto elettrico solo da specialisti qualificati.
- Non effettuare modifiche sulla porta che potrebbero pregiudicare la sicurezza.
- Escludere qualsiasi pericolo dovuto a fuoco, gas, polvere, fumo, incendio ed esplosione durante i lavori di saldatura, cottura e molatura.
- Evitare che durante l'operazione di saldatura i materiali da costruzione ad espansione reagiscano a causa di diffusione del calore e perdano quindi il loro effetto!

3 Informazioni sulle caratteristiche della porta

Osservare che la porta fornita soddisfi sia singoli requisiti che una combinazione di requisiti, quali protezione antincendio, protezione antifumo, isolamento acustico e protezione antieffrazione o che possa essere una porta funzionale.

3.1 Porte antincendio e tagliafumo

- Per la relativa omologazione consultare la pagina internet **www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/**. L'omologazione deve essere presente sul luogo di utilizzo.
- Le informazioni riportate sono requisiti minimi per il montaggio in Germania. Per il montaggio in altri paesi valgono le rispettive autorizzazioni nazionali e i valori di riferimento dei materiali devono essere stabiliti rispettando minimo i requisiti DIN.
- Osservare le norme DIN 18093 (montaggio di porte antincendio) e DIN 18100 (aperture nel muro per porte) oppure le norme nazionali.
- Il produttore può, in casi singoli, esporre una dichiarazione di conformità secondo gli § 22 e § 23 del regolamento edilizio.
- **L'utilizzatore è responsabile del perfetto stato della porta.**
- Le cerniere a molla in Germania **non** devono essere utilizzate in porte e sportelli con le seguenti caratteristiche:
  - Peso del battente > 80 kg
  - Finestratura
  - Montaggio in pareti prefabbricate (eccezione: dimensioni < 1000 × 1000 mm)
  - Combinazione con porte tagliafumo ai sensi della DIN 18095
  - A due battenti

  Al di fuori della Germania possono avere validità altre disposizioni, ad ogni modo consigliamo l'osservanza delle norme tedesche.
- Utilizzare applicazioni, serrature, strumenti di chiusura e componenti elettrici montati esclusivamente se sono parte integrante dell'omologazione della porta o se è presente l'autorizzazione del produttore.
- Pareti in cartongesso e spessori delle pareti: vedere Tab. 1:
- Pareti e spessori delle pareti ammessi: vedere Tab. 2:
- Montare le porte con battuta su 3 lati, senza vano di chiusura inferiore, a livello più basso del pavimento.
- Riempire il telaio con malta minerale a base di cemento, p. es. LM21 di Sakret, se non descritto diversamente nella situazione di montaggio. Puntellare i telai ad U ed i telai ad angolo (con o senza controtelai) prima del riempimento, in modo che non si deformino con la pressione della malta.

Tab. 1: Pareti prefabbricate F 90 A consentite per porte antincendio e tagliafumo, altezza ≤ 5000 mm

Attestato di prova no.	Parete	H3 OD H_30 OD	H3-1G H_30 D1	[1] H3-2 VM H_30 D2	H16 S1 H_90 E1
P-3310/563/07-MPA BS	Knauf W 112	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3391/170/08-MPA BS	Knauf W 131	≥ 116 mm	—	—	≥ 177 mm
P-3310/563/07-MPA BS	Knauf W 132	≥ 100 mm	—	—	—
P-3202/2028-MPA BS	Knauf W 352 / W 353	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 150 mm
P-3956/1013-MPA BS	RiGips 3.40.01ff. / 3.41.01ff.	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-3014/1393-MPA BS	RiGips 3.60.20	≥ 100 mm	≥ 100 mm	≥ 100 mm	≥ 125 mm
P-3020/0109-MPA BS	RiGips 6.70.10	≥ 165 mm	—	—	≥ 165 mm
P-SAC-02/III-681	LaFarge L11 – L14	≥ 100 mm	≥ 100 mm	≥ 100 mm	—
P-MPA-E-98-005	LaFarge L15	≥ 100 mm	—	—	≥ 125 mm
P-3515/0519-MPA BS	LaFarge L16	≥ 150 mm	—	—	≥ 150 mm
P-3391/0890-MPA BS	LaFarge L18	—	—	—	≥ 161 mm
P-MPA-E-99-047	Promat 450.81	≥ 140 mm	—	—	≥ 140 mm
P-11-003478-PR01	B + M W 50 / 100 – W 100 / 150	≥ 100 mm	—	—	—
P-3854/1372-MPA BS	Fermacell 1 S 31/3.1	≥ 95 mm	≥ 95 mm	≥ 95 mm	—

1) max. 2750 × 2750 mm

Tab. 2: Pareti consentite e spessori minimi delle pareti per porte antincendio e tagliafumo (mm) vedere 4.2

Porte in lamierad'acciaio / Parete	H3-1 OD H_30-1 OD		H3-2 OD H_30-2 OD		H3-1 G H_30 D1	H3-2 VM H_30 D2	H6-1 OD	H6-2 OD	H16-1 G H_90 D1	H16-2 G H_90 F-2	H16-S1 H_90 E-1	H16-1 OD H_90-1 OD		H16-2 OD H_90-2 OD
Calcestruzzo DIN 1045-1, solidità ≥ C12/15	1) k ≤ 2500	2) k > 2500	1) k ≤ 2500	2) k > 2500										
	100	140	100	140	140	140	140	140	140		120	140		140
Muratura DIN 1053-1, resistenza del mattone alla pressione ≥ 12, categoria malta ≥ 2	1) k ≤ 2500	k > 2500	1) k ≤ 2500	2) k > 2500			e ≤ 1250 e k ≤ 1750	e ≤ 1500 e k ≤ 2500				e ≤ 625 k ≤ 750	e > 625 k > 750	
	115	175	115	175	175	175	115	175	240		175	115	175	175
Blocco in calcestruzzo cellulare o piastre in pietra, DIN 4165-3, classe di resistenza ≥ 4, Lastre in calcestruzzo cellulare secondo autorizzazione generale dell'ispettorato edile, classe di resistenza ≥ 4.4	k ≤ 2500		k ≤ 2500				e ≤ 1320	e ≤ 2500						
	150		150		175	175	150	200	200		175	200		200
Parete prefabbricata F 90-A secondo ABP Osservare la **Fig. 8.12**, altezza max. 5000 mm	3)		3)		3)	3)					3)			
Parete prefabbricata F 90-A DIN 4102-4/Tab. 48, Osservare la **Fig. 8.12**, altezza max. 5000 mm	e ≤ 1320		e ≤ 2500			e ≤ 2750 e k ≤ 2750	e ≤ 1250	e ≤ 2500						
	100		100		100	100	100	125			125	125		125
Parete prefabbricata F 90-B DIN 4102-4/Tab. 49 altezza max. 5000 mm	e ≤ 1250 e k ≤ 2500		e ≤ 2500 e k ≤ 2500											
	4) 100 / 5) 130		4) 100 / 5) 130											
Parete prefabbricata F 30-A	e ≤ 1125 e k ≤ 2125													
	185													
Controsoffitti di gesso VG Orth, P–SAC 02 / III-468, **Fig. 9/A17**	e ≤ 2500													
	100													

Spessori minimi delle pareti

1) Senza elemento superiore **2)** Con elemento superiore **3)** vedere Tab. 1: **4)** Telaio a due strati **5)** Dryfix

- **Protezione antifumo:**
  - Utilizzare guarnizioni a pavimento e dispositivi cuneiformi (vedere la parte illustrata, punto 10.6 e 11).
  - Se il telaio non è riempito con malta, sigillare il collegamento del telaio agli elementi costruttivi adiacenti su entrambi i lati con mastice, senza lasciare fessure.
  - Utilizzare cilindri di chiusura.
- Non esporre le finestrature delle porte antincendio direttamente ai raggi del sole.

3.2 Porte insonorizzanti

- L'insonorizzazione completa dipende dai componenti circostanti. L'abbattimento acustico di parete e porta deve essere specificatamente certificato, poiché non si può dedurre solo dall'indice di isolamento acustico R_w o R della porta valutato.
- Controllare che la / le guarnizione / i aderiscano completamente.
- Il pavimento deve essere liscio per poter garantire la funzione ermetica della guarnizione a pavimento.
- Separare il livello del pavimento nell'area soglia.
- Utilizzare i cunei e la guarnizione a pavimento (vedere la parte illustrata, punto 10.6 e 11).
- Utilizzare cilindri di chiusura.
- Riempire completamente il telaio con malta.
- Incollare gli angoli della guarnizione telaio tagliati obliquamente p. es. con Köratan UC 41.

3.3 Porte antieffrazione

- La porta soddisfa i requisiti antieffrazione solo se il chiavistello è completamente chiuso e la chiave è stata estratta.
- Fissare i battenti di tutte le porte a 2 battenti RC in corrispondenza delle cerniere con 2 viti ciascuno (vedere la parte illustrata, punto 10.2).
- Per RC 3 e RC 4 utilizzare solo telai ad angolo, telai ad angolo con controtelaio e cassaporte avvolgenti.
- Nelle porte RC 2 riempire a compressione il telaio nell'area dei punti di bloccaggio, delle cerniere e dei perni di blocco.
- Nelle porte RC 3 riempire a compressione il telaio nel suo perimetro.
- Montare nelle porte con finestre il telaio fermavetro con listelli di sicurezza verso il lato di chiusura.
- Per la sostituzione della finestratura superiore eseguire il fissaggio con blocchetti nello stesso modo come per il montaggio.
- Per le porte a due battenti misurare la dimensione della fessura dall'incavo del pavimento.
- Nelle porte antipanico rendere più difficile l'intervento con fildiferro, p.es. riducendo lo spiraglio d'aria a livello del suolo oppure utilizzando una soglia piatta circolare.

3.3.1 Requisiti minimi per porte antieffrazione

Classe di resistenza secondo DIN EN V 1627	**RC 2**	**RC 3**
Muratura DIN 1053 parte 1 [mm] resistenza del mattone alla pressione ≥ 12	115	115
Calcestruzzo armato, min. C12 / 15 [mm]	100	120
Pietre in calcestruzzo cellulare classe 4 [mm]	175, 115 [1]	240
Lastre in calcestruzzo cellulare classe 4 [mm]	150	–
Cilindro profilato secondo DIN 18252 [2]	P2BS	P2BS
Cilindro profilato [2] [3]	Classe A	Classe A
Bandella protettiva secondo DIN 18257 [2]	ES1 (ZA)	ES2 (ZA)
Bandella protettiva [2]	Classe A	Classe A
Vetri EN 356 (tagliafuoco)	P5A [4] / P8B [5]	P5A [4]

1) Solo per porte ad un battente, consigliamo spessori di parete a partire da 150 mm
2) Bandella protettiva o cilindro profilato devono essere dotate di protezione antiestrazione (ZA).
3) Non compresa necessariamente nella fornitura
4) Non in vie di fuga e di soccorso
5) In vie di fuga e di soccorso

3.4 Porte funzionali

I telai non devono essere necessariamente riempiti.

3.5 Protezione antincendio ed uso esterno

La protezione antincendio e l'uso esterno richiedono un'omologazione separata. Considerare le istruzioni di montaggio separate, cod. art. 479166

4 Montaggio

4.1 Prima del montaggio

Prima del montaggio chiarire le seguenti domande:

- Quali caratteristiche ha la porta?
- Il tipo di parete è adatto per il montaggio della porta?
- Il livello del pavimento è noto (tracciato metrico)?
- In quale direzione si deve aprire la porta?
- Ci sono norme edilizie da rispettare?
- Nella parete deve essere praticato un foro nella zona della cassetta di protezione muro?

4.2 Dimensioni secondo EN 12519

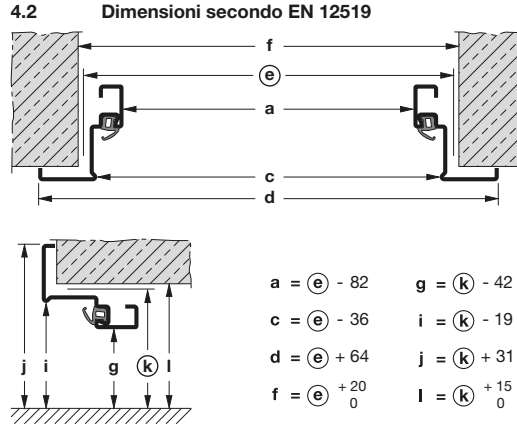


Fig. 4: Dimensioni

a/g larghezza / altezza foro muratura
c/i larghezza / altezza foro battente
d/j larghezza / altezza esterna telaio
e/k altezza / larghezza nominale
f/l larghezza / altezza netta costruzione (EN 18100)

4.3 Durante il montaggio

- Seguire le istruzioni di montaggio allegate nei pacchi accessori.
- Se il materiale di fissaggio è in dotazione, come ad es. patte per tassellaggio, tasselli ad espansione o viti, utilizzare solo questo.

- Utilizzare i tasselli indicati al punto 8.
- In combinazione con telaio ad angolo e mattoni forati o pietre da gesso utilizzare il tassello FUR 10 × 80 / 100 mm e osservare il punto 8 delle istruzioni per il montaggio.
- Trapanare mattoni forati e cavi senza percussione.
- Rispettare la distanza minima dai bordi di 50 mm in presenza di fori orizzontali e verticali e la direzione di espansione dei tasselli.
- Osservare che nei telai senza incasso l'angolare di montaggio inferiore deve essere rimosso prima del montaggio.

4.4 Note relativa alla parte illustrata

Vedere il punto	Descrizione
8	Possibilità di montaggio e forme dei telai
8.1a	A filo muro
8.1b	Battuta sottile
8.1c	Battuta prominente
8.2a / 8.2b	Quantità punti di fissaggio
8.2c	Procedura di montaggio
8.3a	Smontaggio della porta standard
8.3b	Smontaggio della porta di sicurezza
8.4	Montaggio del telaio ad angolo
8.5	Incavo nel pavimento e angolare di montaggio
8.6	Elementi di fissaggio
8.7	Distanza minima dal bordo e direzione di espansione del tassello
8.8	Montaggio profili con scanalatura
8.9	Canaline vuote nel telaio
8.10	Apriporta elettrico
8.11	Cassetta di protezione muratura nelle pareti in GKF
8.12	Montaggio pareti con ignilastre GKF
9.0	Possibilità di montaggio
10.1a	Montaggio con cerniere standard
10.1b	Montaggio con cerniere 3D
10.2	Montaggio della porta di sicurezza
10.3	Regolazione dell'interstizio
10.4	Rimozione degli angolari a pavimento in presenza di telai senza incasso a pavimento
10.5	Montaggio della con trotelaio
10.6	Fissare le guarnizioni cuneiformi con il silicone
10.7	Montaggio della guarnizione per telaio
10.8	Sollevare la porta
10.9	Mettere sotto carico la cerniera a molla
10.10	Verifica aggancio dello scrocco
10.11	Trasformazione telaio portavetro
10.12	Trasformazione della griglia di aerazione
10.13	Rivestimento di materiale isolante per protezione antincendio e antifumo
10.14	Rivestimento di materiale isolante sui perni di sicurezza
10.15	Contrassegno grandi superfici vetrate
10.16	Porte antipanico e RC
10.17	Montaggio serratura con antifurto con bloccaggio multipunto
11	Guarnizioni a pavimento
12	Chiudiporta
13.1	Togliere la chiave nelle porte antipanico
13.2	Evitare un uso errato della serratura

5 Manutenzione e cura

5.1 Lavori di manutenzione annuali

- ▶ Controllare che il battente della porta, il telaio ed il fissaggio non presentino danni meccanici e da corrosione.
- ▶ Controllare il funzionamento della settatura ed ingrassare eventualmente lo scrocco.
- ▶ Lubrificare i lucchetti cilindrici con Teflon spray.
- ▶ Controllare il fissaggio dei componenti montati, come p. es. maniglia, serratura, chiudiporta, cerniere etc.
- ▶ Ingrassare i perni della cerniera e gli anelli di rotolamento.
- ▶ Controllare le dimensioni della fessura.
- ▶ Controllare la visibilità del contrassegno.

⚠ PERICOLO

Pericolo di morte dovuto al rivestimento di materiale isolante staccato

La chiusura antincendio perde la sua funzione a causa del rivestimento di materiale isolante staccato.

- ▶ Sostituire il rivestimento di materiale isolante staccato, vedere la parte illustrata, punto 10.13.

- ▶ Sostituire le parti difettose.
- ▶ Utilizzare esclusivamente ricambi originali del costruttore.

Se si riscontrano difetti che non possono essere corretti di propria iniziativa, incaricare una ditta specializzata.

5.2 Messa in funzione e manutenzione delle serrature antipanico

www.hoermann.de/dokumentation/zulassungsbescheide-fuer-feuerschutzabschluesse/

(Vedere il punto 9)

5.3 Necessario trattamento superfici per elementi con mano di fondo

La superficie dello sportello e del telaio è già trattata con mano di fondo a polveri a resina epossidica a base di polistere.

1. Rimuovere la / le guarnizione / i.
2. Levigare tutte le superfici da verniciare, tranne il rivestimento di materiale isolante.
3. Pulire a fondo le superfici.
4. Per il trattamento finale del battente, del telaio e del rivestimento di materiale isolante seguire la sequenza qui riportata:
   - Mano di fondo con primer epossidico a 2 componenti e mano finale con comuni vernici per l'edilizia oppure
   - Mano di fondo e di finitura con vernice poliuretanica a 2 componenti.

   Agenti atmosferici come la radiazione solare possono portare a deformazioni temporanee del battente. Le tinte scure rafforzano questo effetto che non costituisce però motivo di reclamo. Consigliamo tinte chiare e / o riflettenti. Attenersi alla scheda tecnica n. 24 BFS (della Commissione federale pitture e protezione dei beni), seguire le istruzioni del produttore della vernice ed eseguire una prova di aderenza.
   Provvedere al trattamento finale entro tre mesi dal montaggio per evitare danni causati dalla corrosione.
5. Applicare di nuovo la / le guarnizione / i dopo che il colore è asciutto.

5.4 Pulizia

- Pulire le superfici con acqua pulita o un detergente per superfici laccate reperibile in commercio.

5.5 Pulizia di componenti in acciaio

- Pulire regolarmente i componenti in acciaio con l'apposito prodotto Edel Glanz di Hörmann, servendosi di un panno morbido.

6 Etichette e contrassegno

L'etichetta dei **tipi di portone D65-1, D65-2, D65-1 OD, D65-2 OD** è dotata del contrassegno di conformità CE sulla base della disposizione (UE) n° 305/2011. La norma prodotto europea armonizzata applicata e consultata è la EN 14351-1:2006 + A1:2010 "Finestre e porte – Norma di prodotto, caratteristiche prestazionali – Parte 1: Finestre e porte esterne pedonali senza caratteristiche di resistenza al fuoco e/o di tenuta al fumo". Il numero del contrassegno CE corrispondente e della dichiarazione di prestazione è riportato nella zona della battuta della porta sull'etichetta sopra citata, tra il logo del produttore ed il contrassegno di conformità CE.

Porte sulla cui etichetta non è riportato alcun contrassegno di conformità CE non rientrano nel campo d'impiego della norma prodotto europea armonizzata sopra citata e quindi non presentano un contrassegno CE né dichiarazione di prestazione.

7 Generalità

La messa in funzione della porta è vietata fino a quando non sia stato accertato che questa è stata montata secondo le nostre direttive e verificato il corretto funzionamento della stessa. Modifiche apportate al prodotto invalidano la dichiarazione di prestazione.

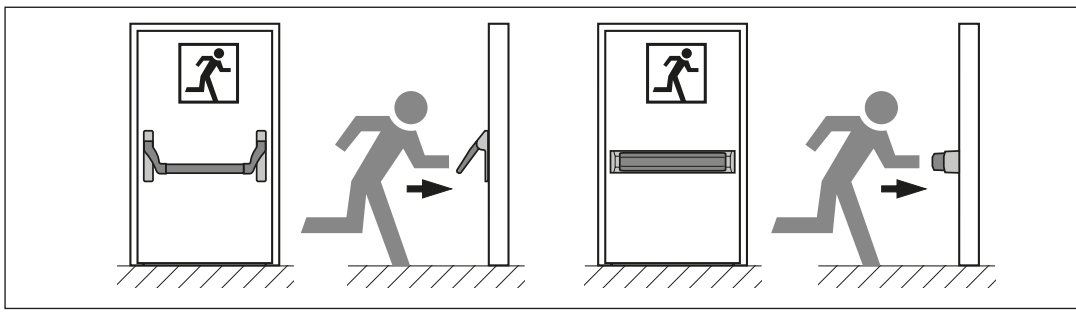
8 Dichiarazione di prestazione

Dichiarazione di prestazione Vedere il punto **8.3**:
www.hoermann.com/dop

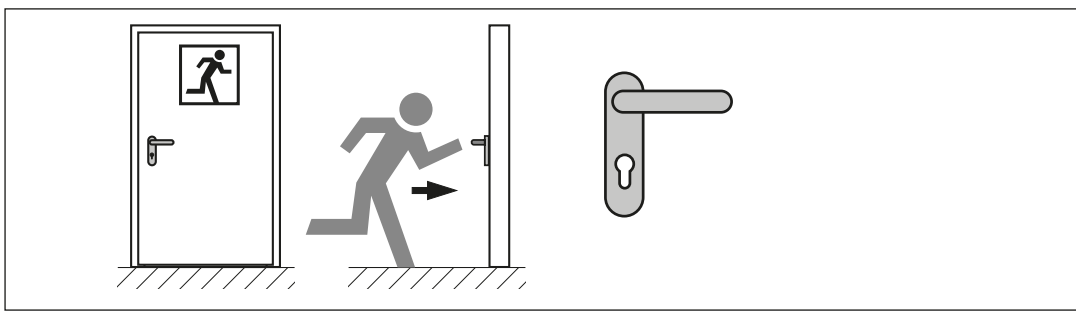
9 Manutenzione delle serrature antipanico

	Messa in funzione	
N° cliente:	Cliente:	
Data:	Montatore:	
Indirizzo:		
Prodotto:	Serratura antipanico secondo EN 1125	☐
	Uscita d'emergenza secondo EN 179	☐

Serratura antipanico secondo EN 1125



Uscita d‘emergenza secondo EN 179



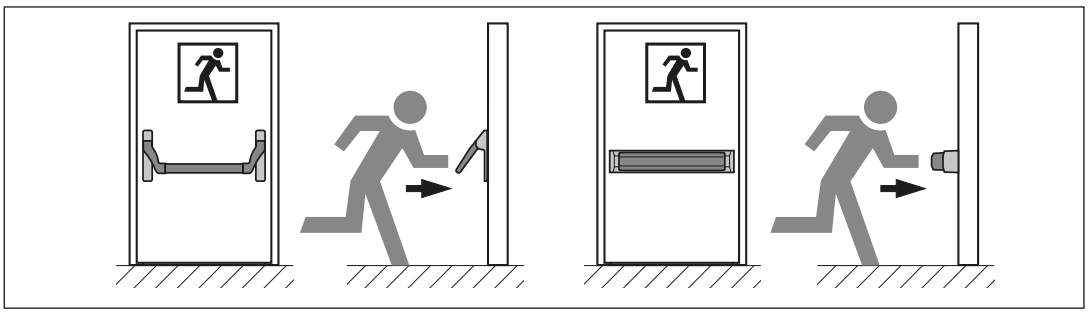
Check list:

È stato controllato che le controparti del blocco, come le cavità della base, siano prive di sporco ed event. pulite	☐
È stato verificato che l'esecuzione del montaggio sia stata eseguita secondo le istruzioni di montaggio	☐
È stato appurato che la serratura sia stata lubrificata sulla base delle istruzioni del produttore	☐
Non sono state riscontrate modifiche successive, come ad es. integrazione a posteriori di dispositivi di bloccaggio supplementari	☐
Tutti i componenti dell'impianto corrispondono all'elenco dei componenti consegnati e autorizzati	☐
Non si riscontrano viti di fissaggio allentate sui rivestimenti	☐
È stato controllato che, all'azionamento della serratura e a chiavistello chiuso, lo scrocco e il chiavistello vengano completamente tirati indietro	☐

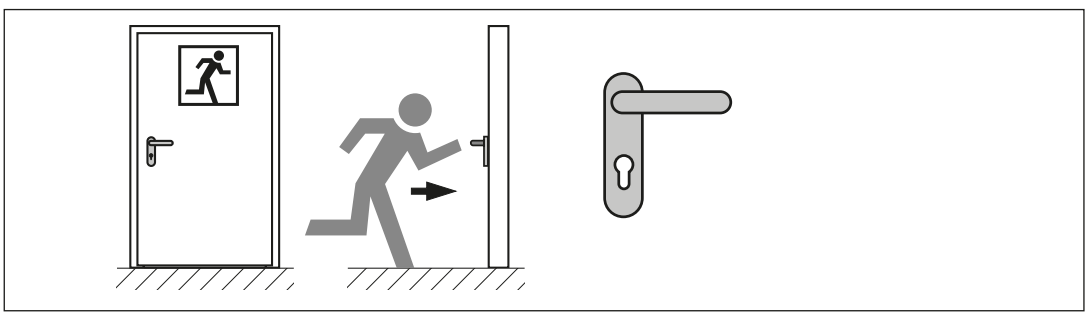
9 Manutenzione delle serrature antipanico, modello di copia

N° cliente:	Cliente:	
Data:	Montatore:	
Indirizzo:		
Prodotto:	Serratura antipanico secondo EN 1125	☐
	Uscita d'emergenza secondo EN 179	☐

Serratura antipanico secondo EN 1125

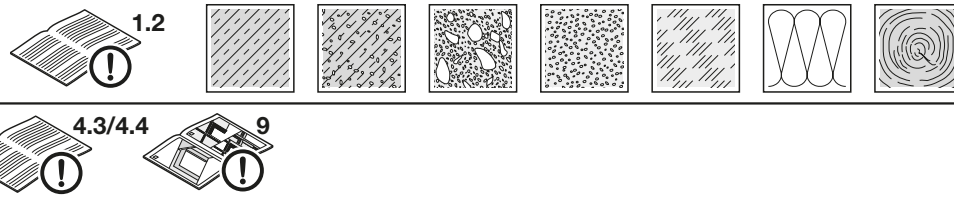


Uscita d‘emergenza secondo EN 179



Check list:

È stato controllato che le controparti del blocco, come le cavità della base, siano prive di sporco ed event. pulite	☐
È stato verificato che l'esecuzione del montaggio sia stata eseguita secondo le istruzioni di montaggio	☐
È stato appurato che la serratura sia stata lubrificata sulla base delle istruzioni del produttore	☐
Non sono state riscontrate modifiche successive, come ad es. integrazione a posteriori di dispositivi di bloccaggio supplementari	☐
Tutti i componenti dell'impianto corrispondono all'elenco dei componenti consegnati e autorizzati	☐
Non si riscontrano viti di fissaggio allentate sui rivestimenti	☐
È stato controllato che, all'azionamento della serratura e a chiavistello chiuso, lo scrocco e il chiavistello vengano completamente tirati indietro	☐


1.2
8
4.3/4.4
9
A
B
A1
1)
A2
6)
2)
A15
3)
B1
3)/4)
B2
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A3
1)
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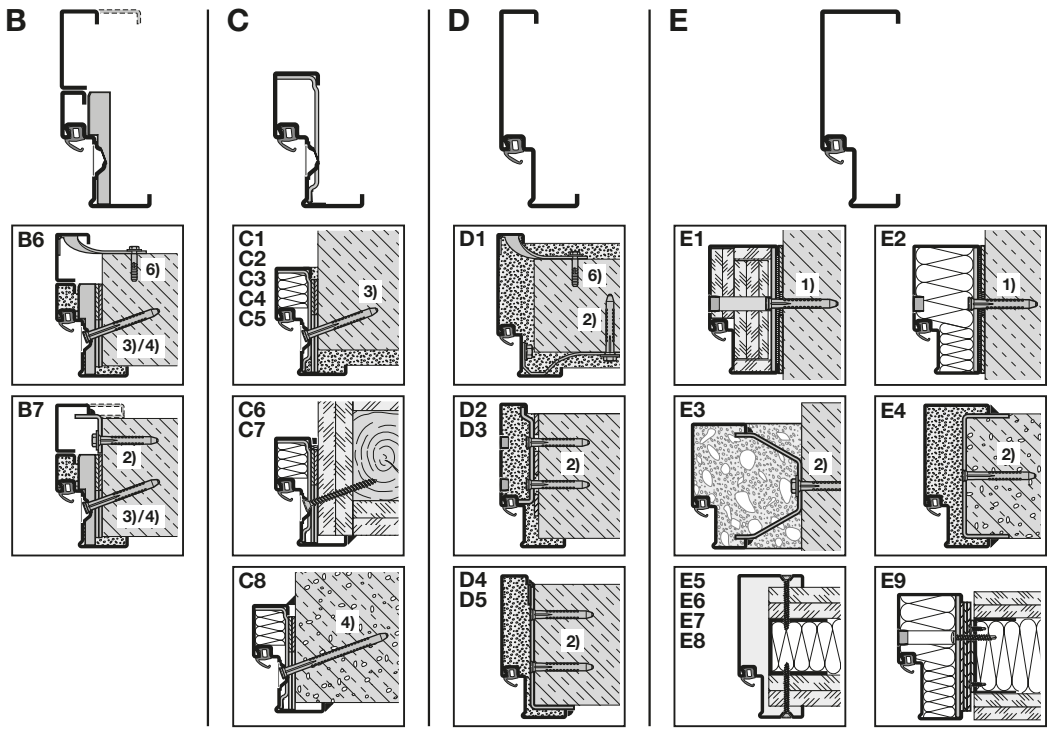
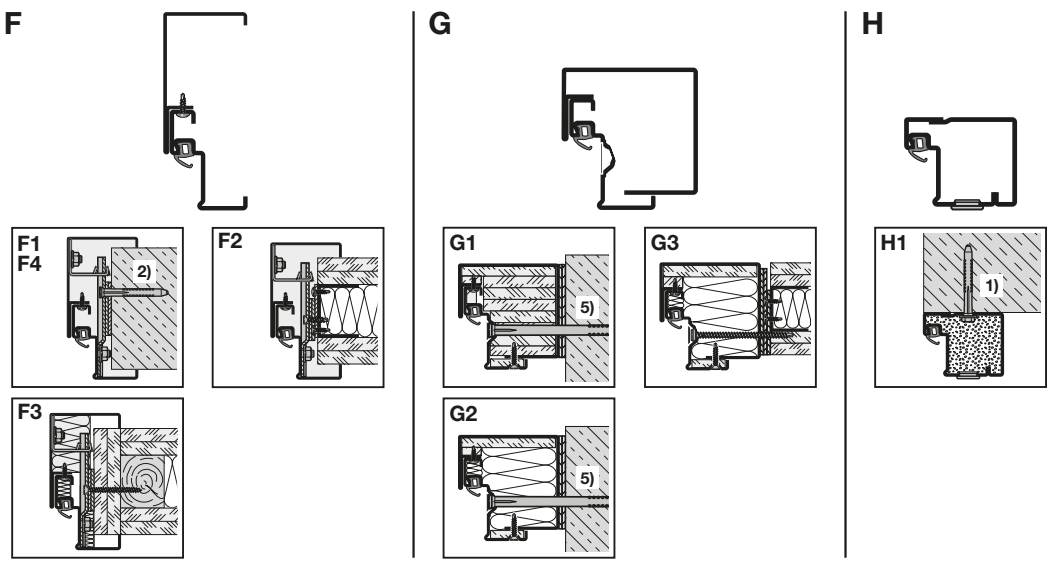




1) Fischer: FUR 10 × 80/100

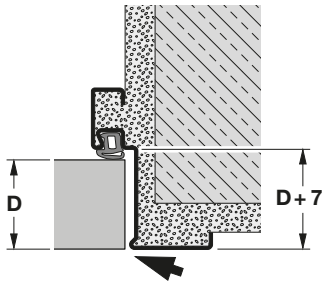
Fischer: SXS 10 × 80/100 →
Hilti: HRD 10 × 80/100 →
MEA: MFR 10 × 80/100 →
Würth: W-UR 10 × 80/100 →

2) Fischer: FUR 10 × 80/100/115
Fischer: SXS 10 × 80/100/120
Hilti: HRD 10 × 80/100
MEA: MFR 10 × 80/100/115
Würth: W-UR 10 × 80/100/115

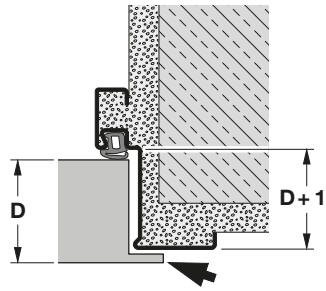
3) Fischer: FUR 10 × 100
4) Fischer: FUR 10 × 160
5) Fischer: FUR 10 × 200
6) 8 × 40

7)

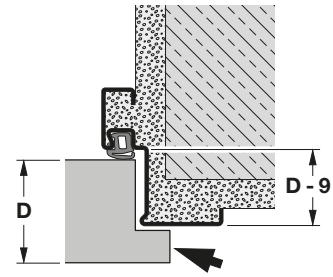
8.1a



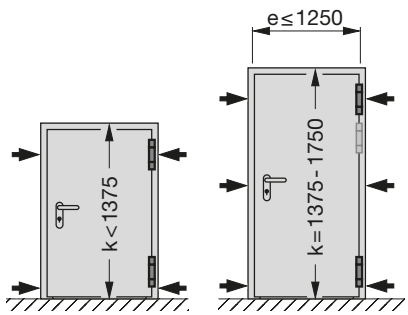
8.1b



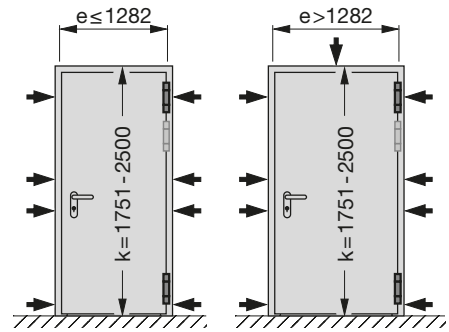
8.1c



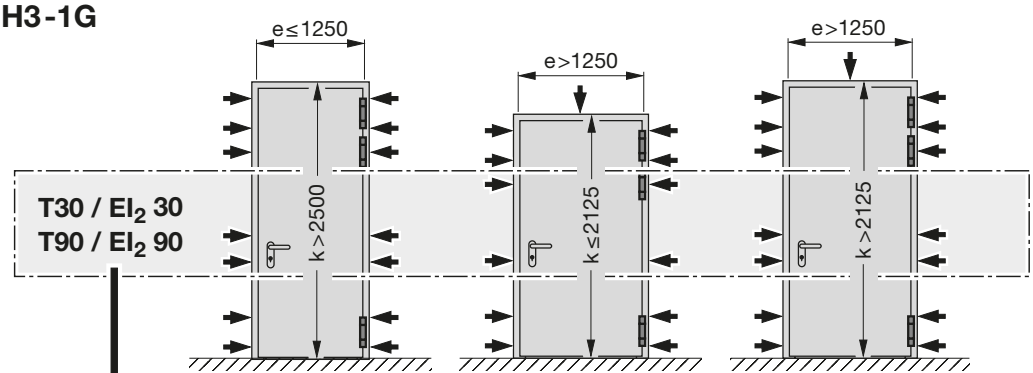
8.2a 4.2/4.3



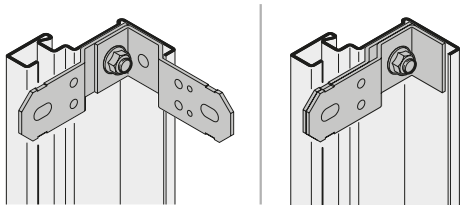
H16-S1
H16-1 OD
HS75



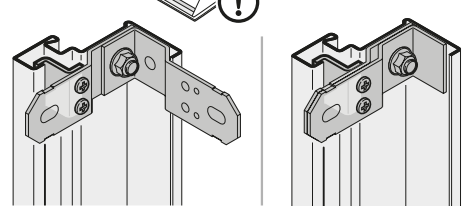
H16-1G
H3-1G



T30 / EI$_2$ 30

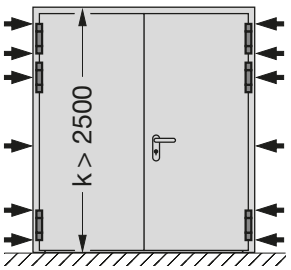


T90 / EI$_2$ 90 8.6a 8.6b

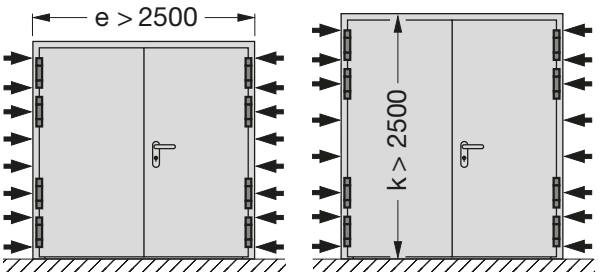


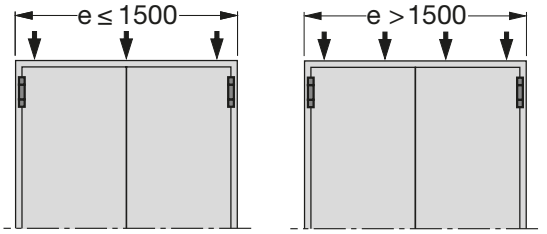
8.2b 4.2/4.3

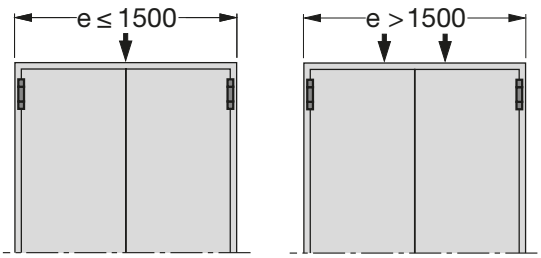
H3-2 VM

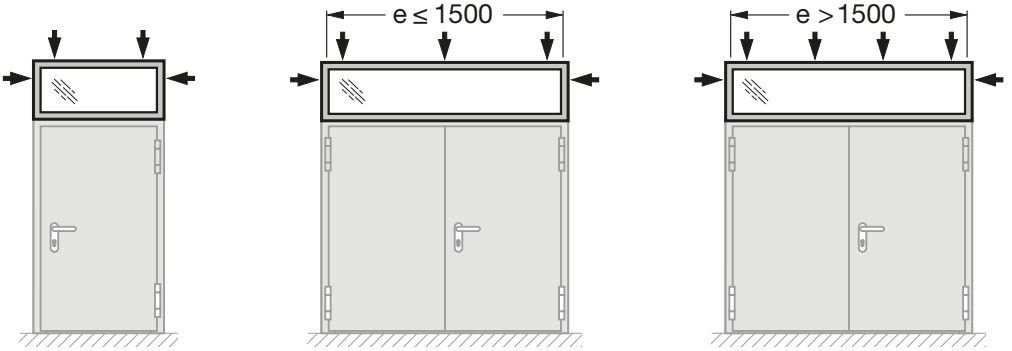


H16-2 G
H_90 F2

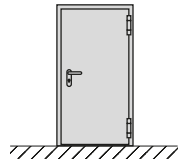








8.2c



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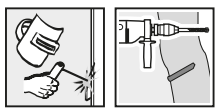

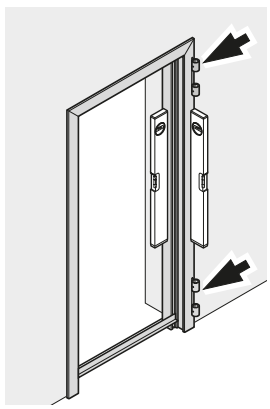

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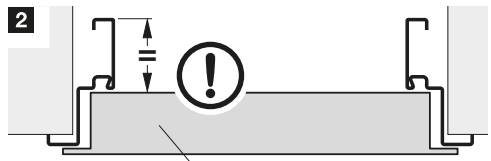

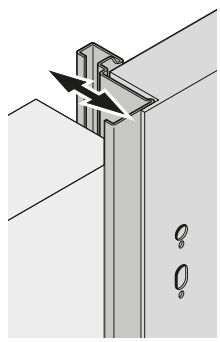

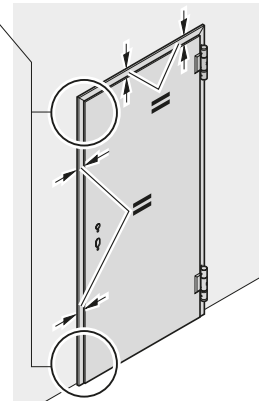

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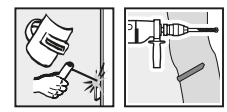
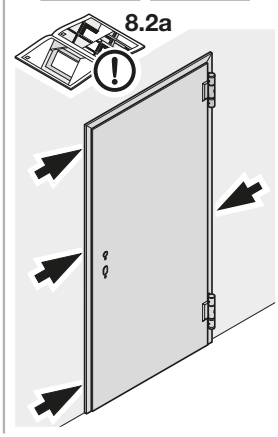
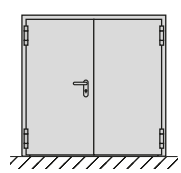


8.2a





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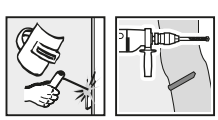

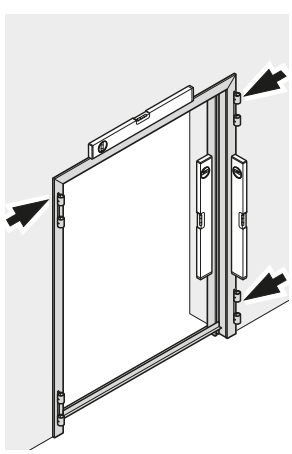

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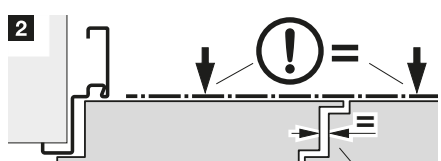
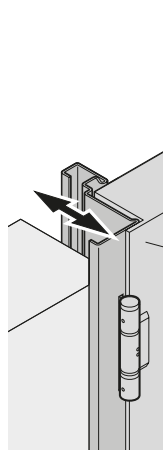
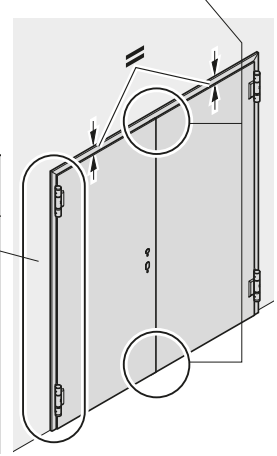
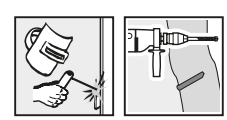


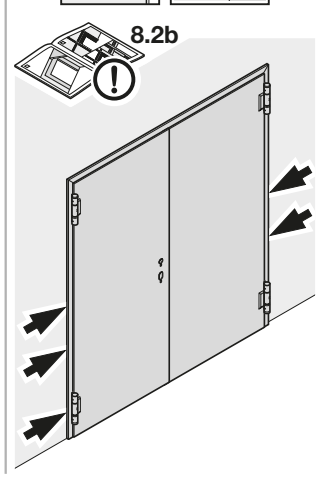


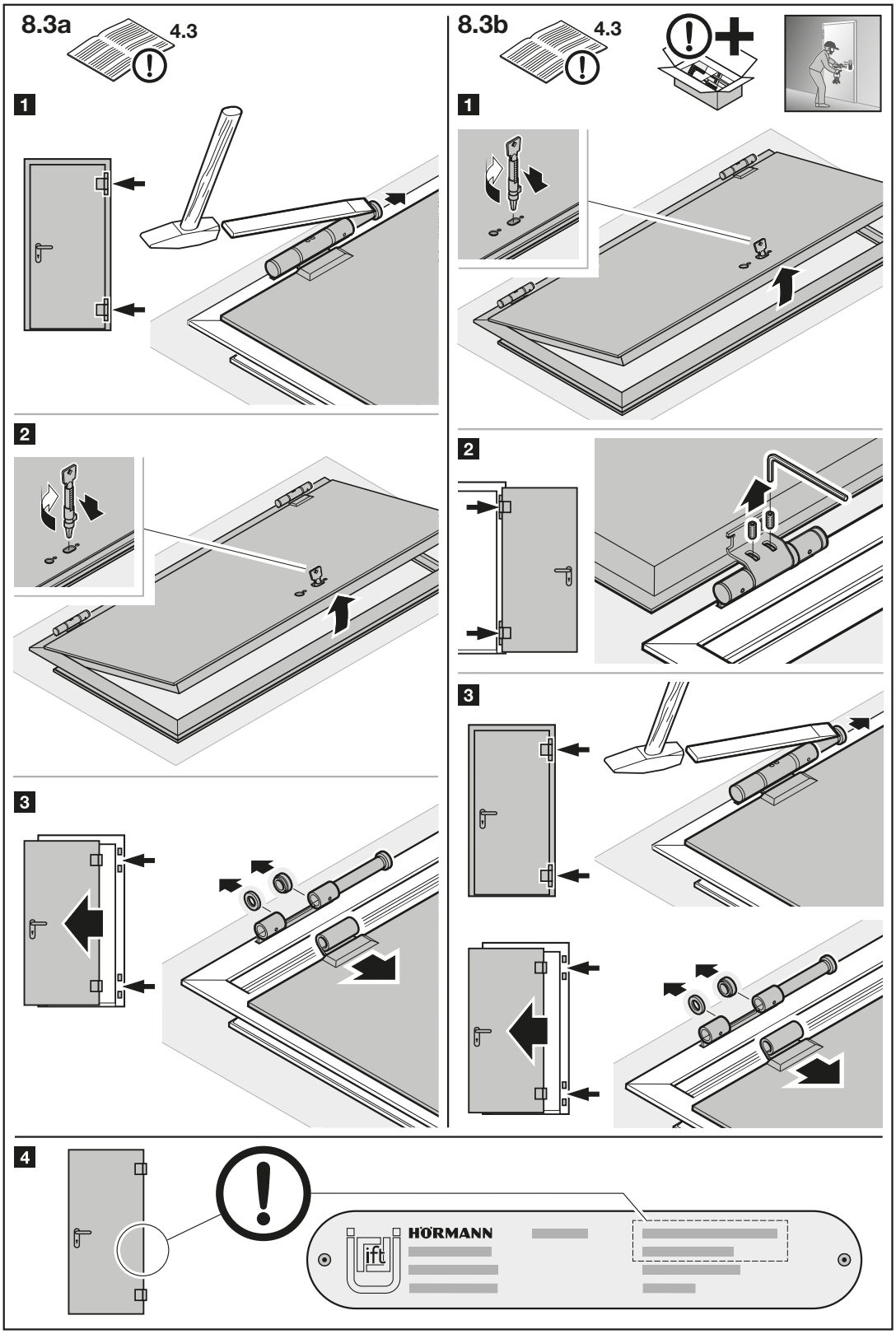


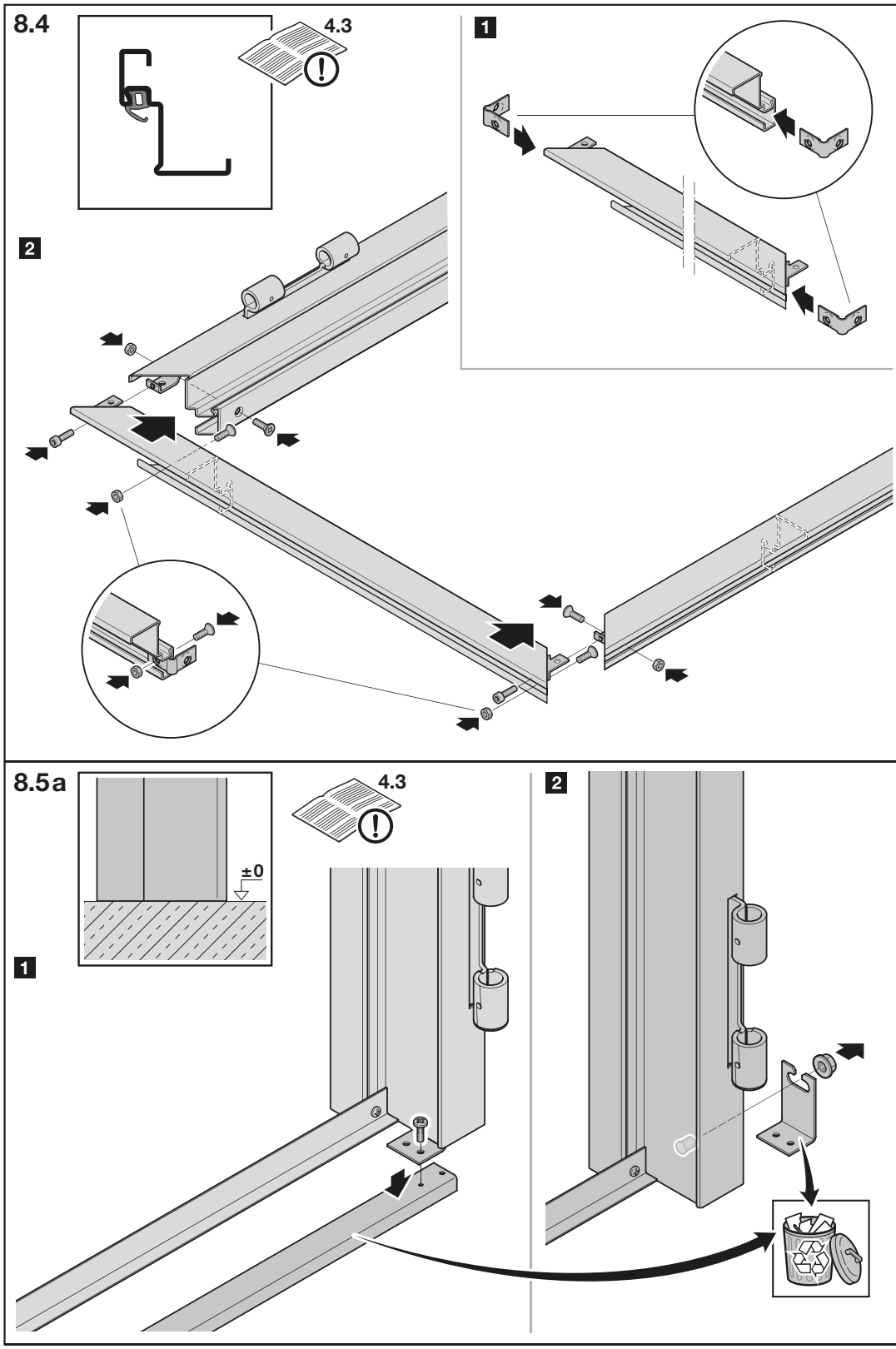
3

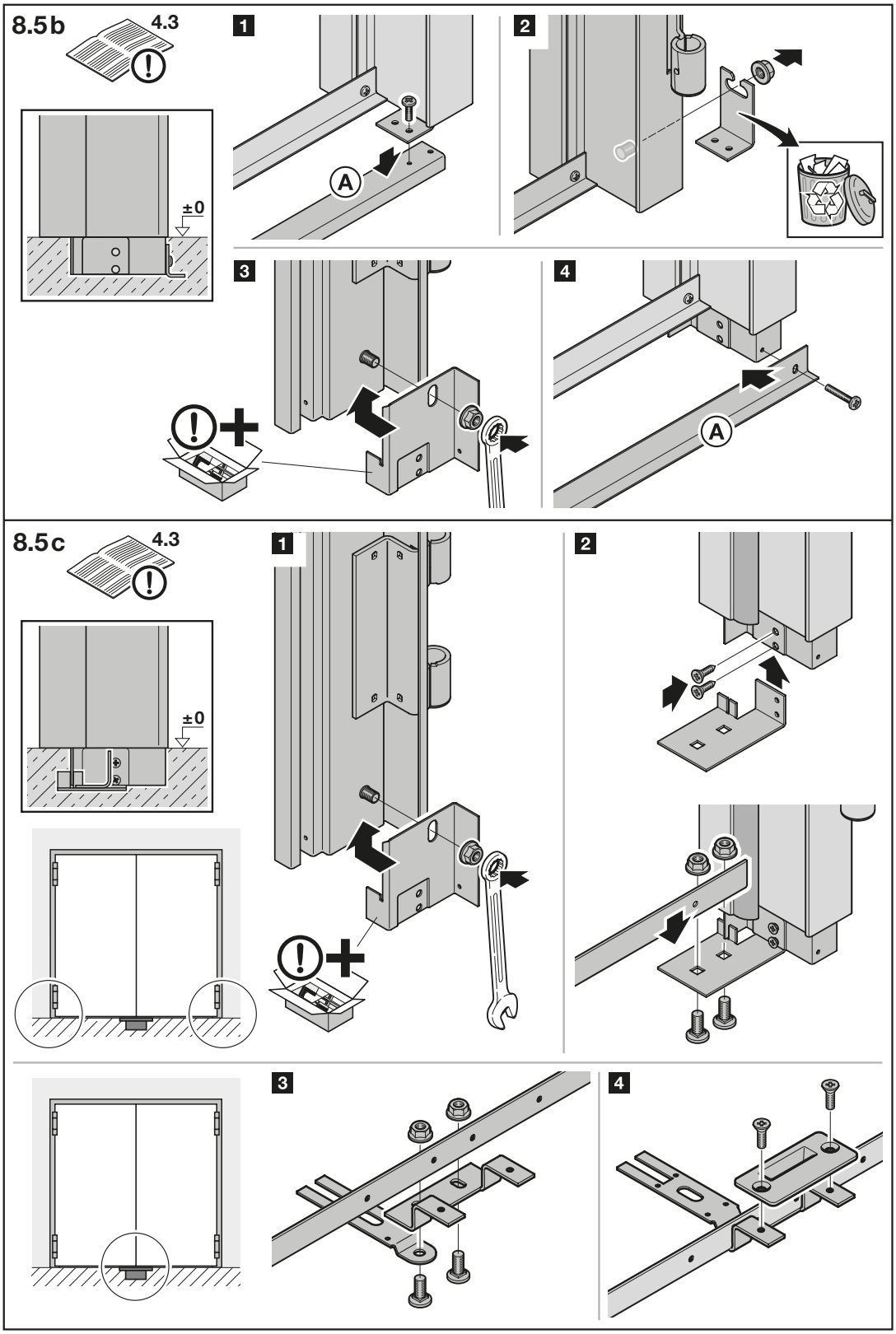


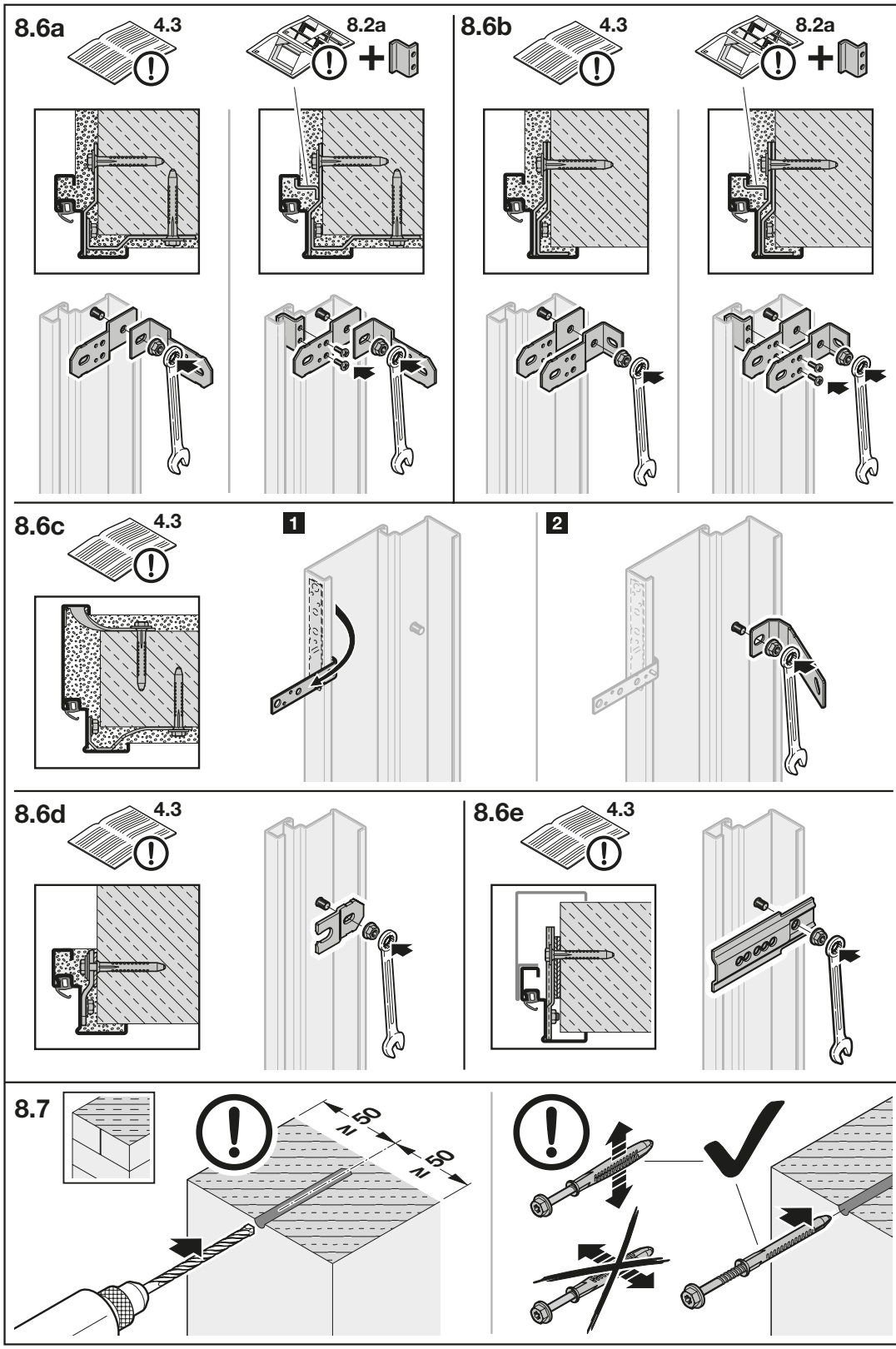
8.2b




8.3a
4.3
1
2
3
8.3b
4.3
1
2
3
4
HÖRMANN
ift


8.4
4.3
1
2
8.5a
4.3
±0
1
2


8.5b
4.3
±0
1
A
2
3
4
A
8.5c
4.3
±0
1
2
3
4


8.6a
4.3
8.2a
8.6b
4.3
8.2a
8.6c
4.3
1
2
8.6d
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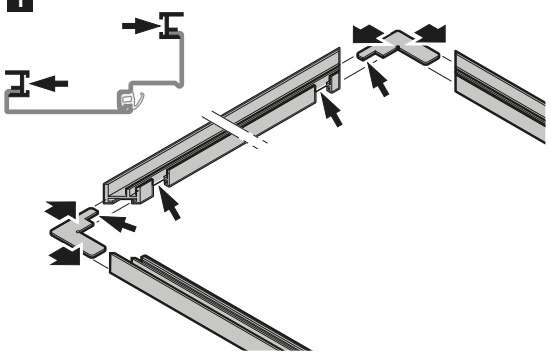
8.6e
4.3
8.7
50
50

8.8

1



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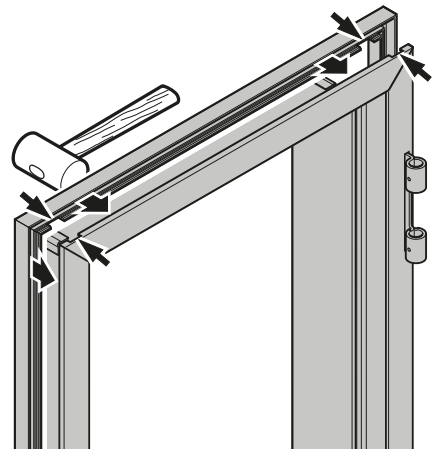
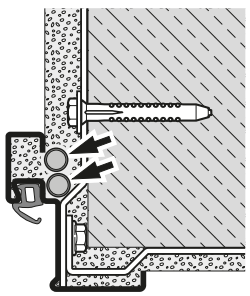
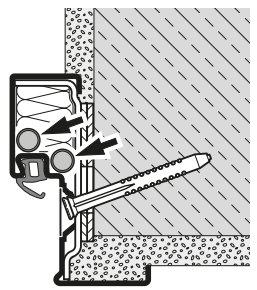
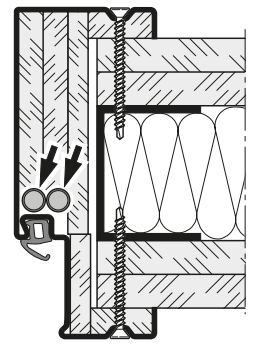
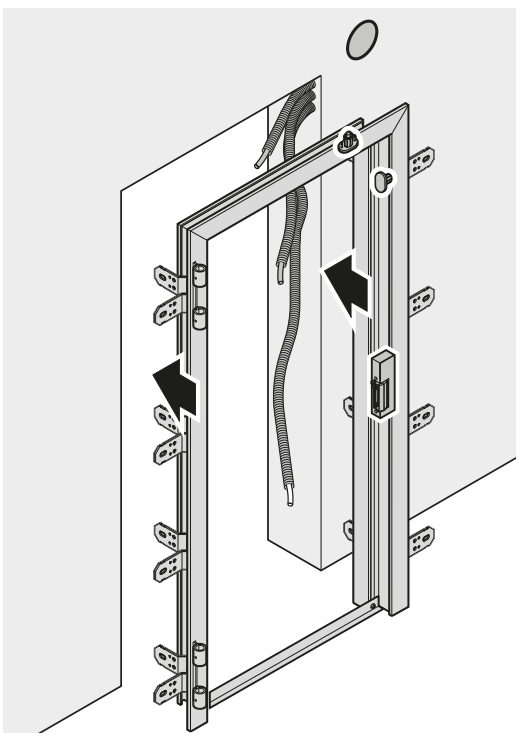


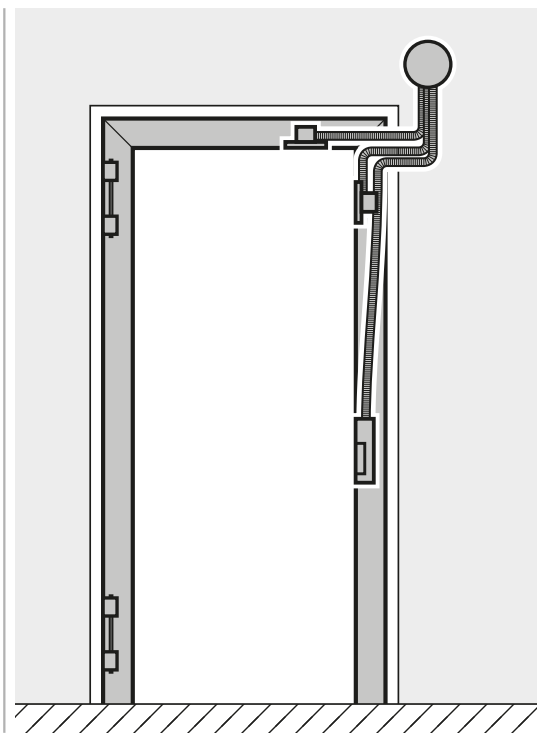
8.9



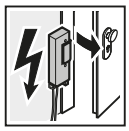








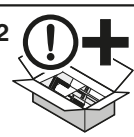
8.10

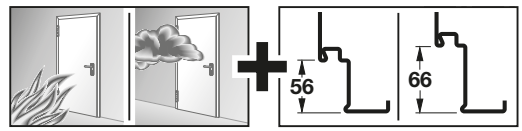


		AC ~	DC ⎓					
I.S.T. Systems	**FT200/FT201**	×				×	×	×
effeff	**142 UF**	×		×	×	×	×	×
	143	×	×	×	×	×	×	×
	14/34	×				×	×	×
Dorma	**Basic**		×			×	×	×
	Lucky Basic 448		×			×	×	×
	Smoke		×		×	×	×	×
	Lucky Smoke 448		×		×	×	×	×

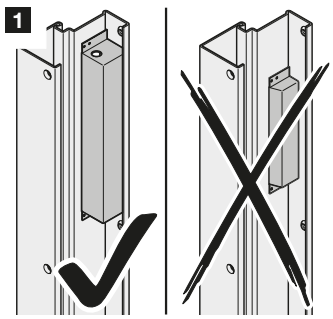
8.11

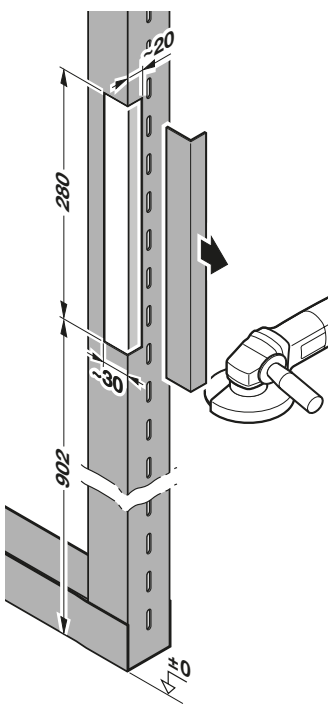
8.12



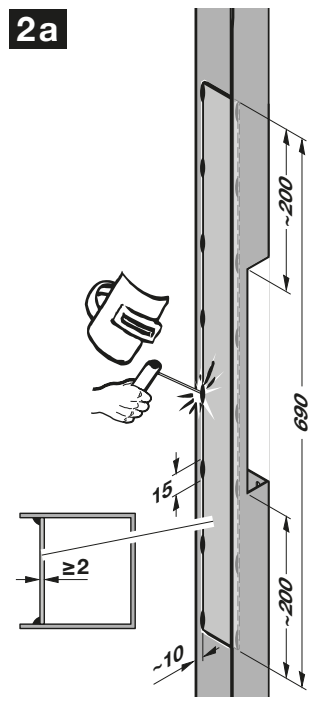


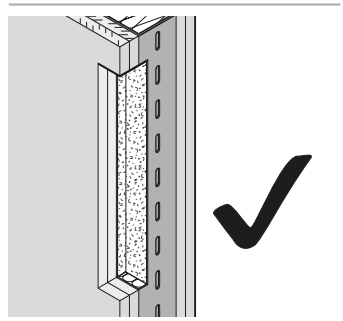
1



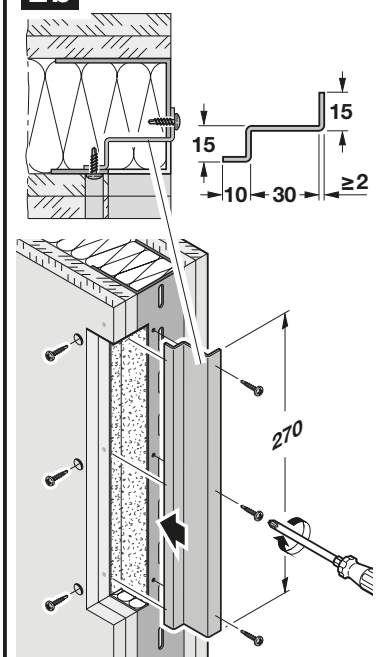


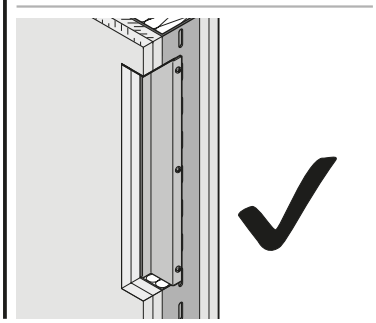
2a



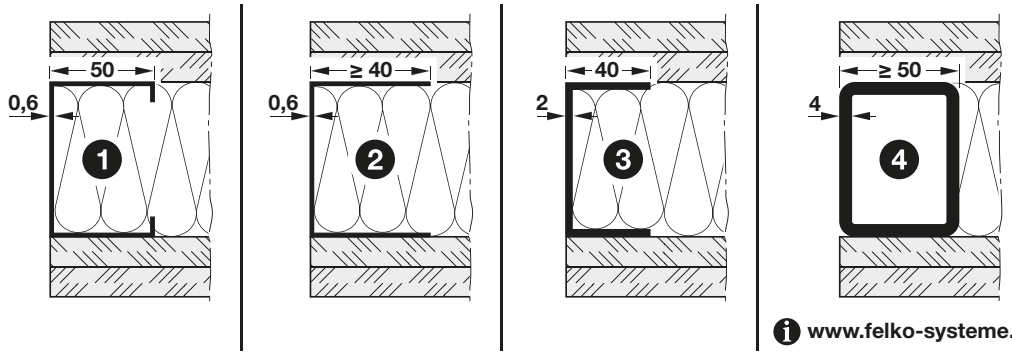


2b

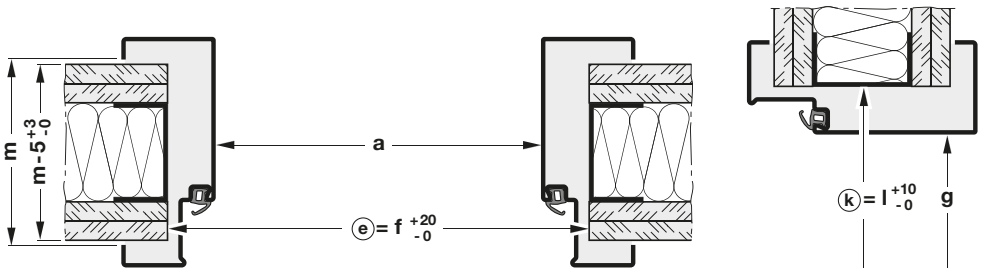




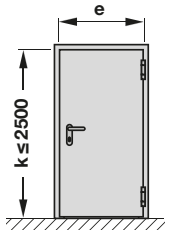
8.12 4.2 8.10



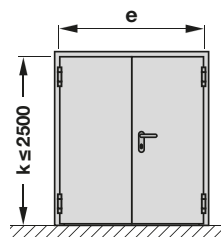
www.felko-systeme.de



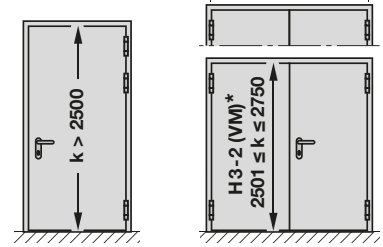
e ≤ 1320 (max. T90/EI$_2$90)
e ≤ 1500 (max. T30/EI$_2$30)



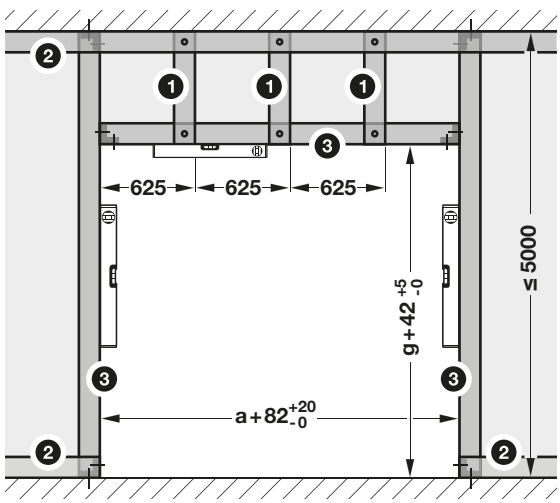
e ≤ 2500 (max. T90/EI$_2$90)
e ≤ 3000 (max. T30/EI$_2$30)

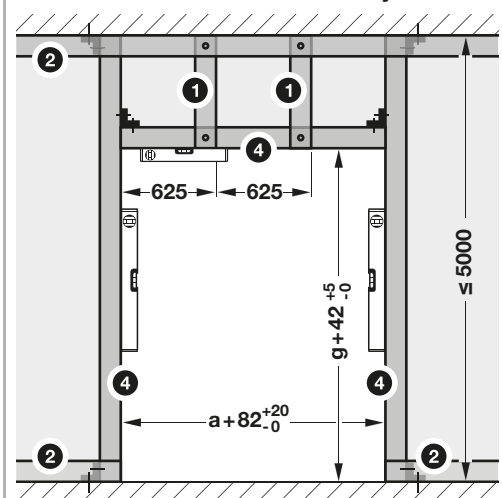


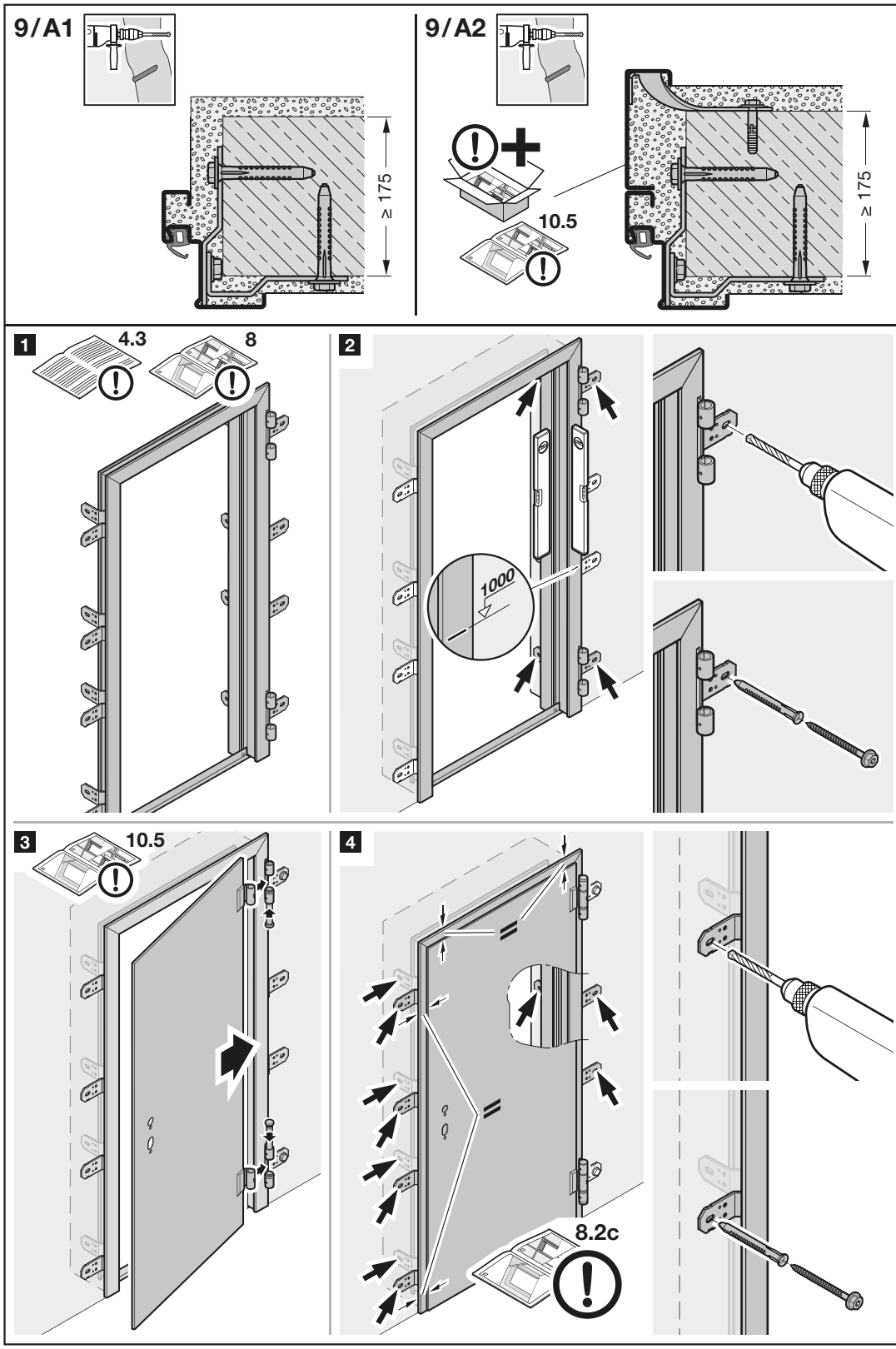
H3-2 (VM)*
2501 ≤ e ≤ 2750

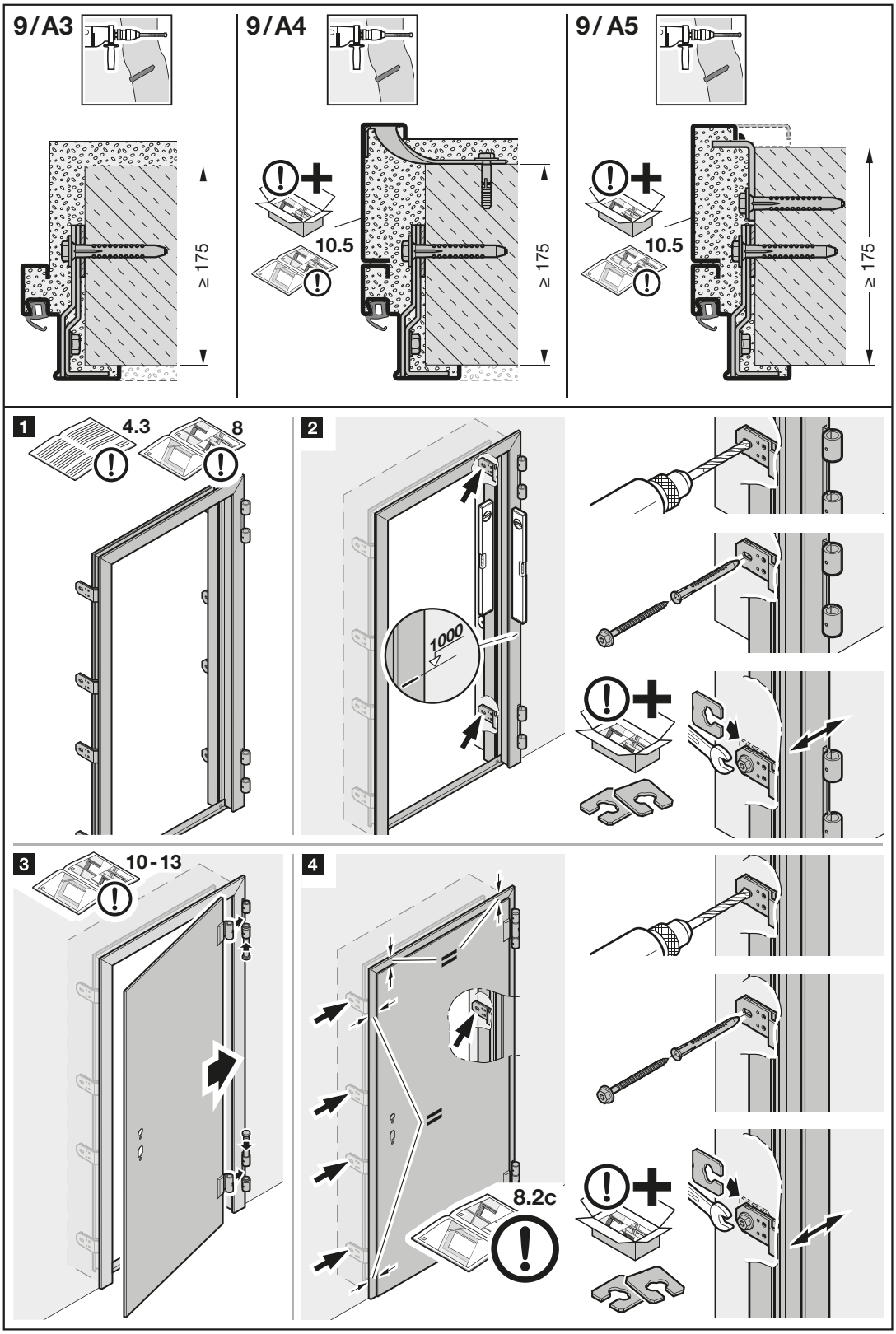


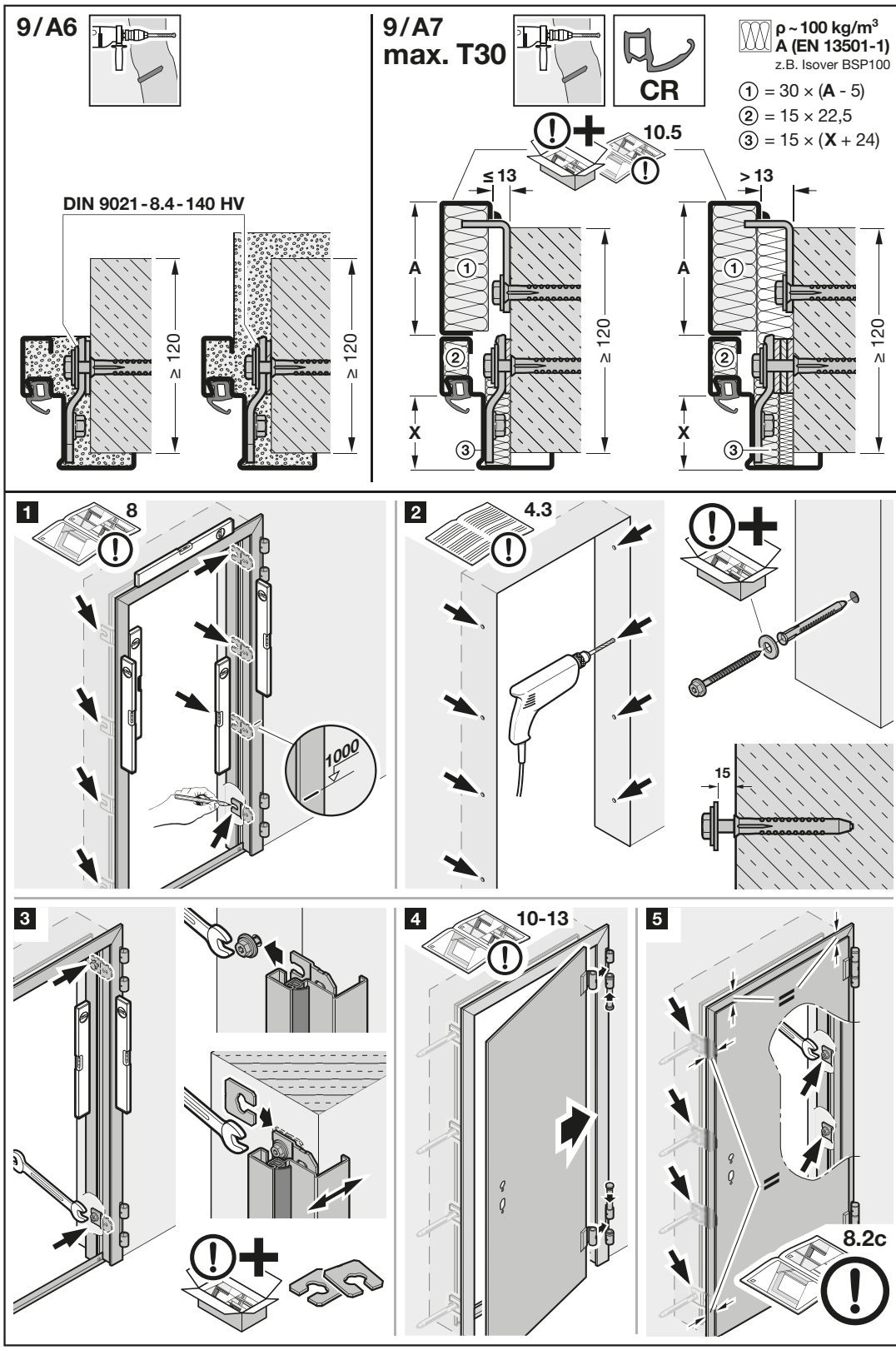
*www.felko-systeme.de

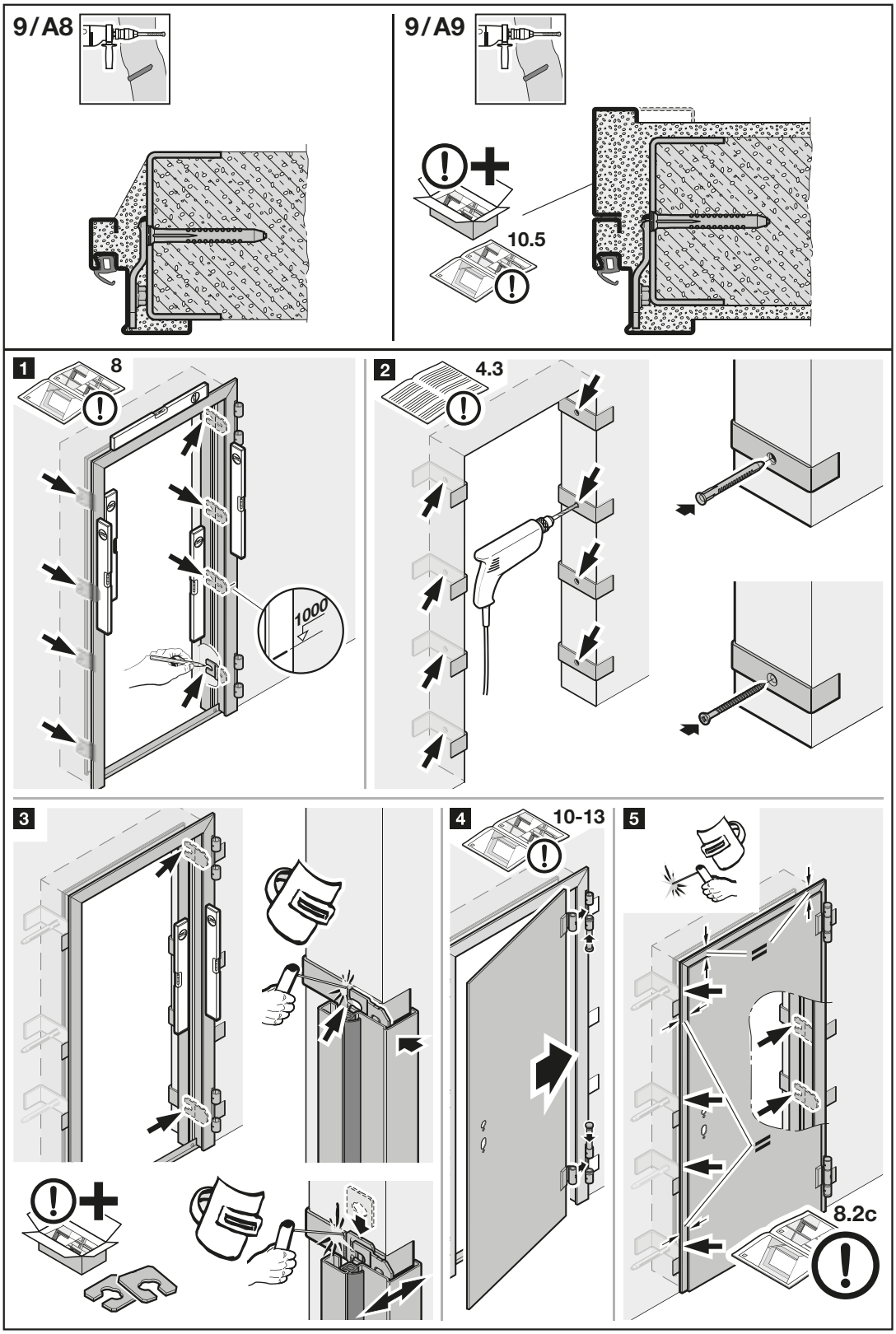





9/A1
≥ 175
9/A2
10.5
≥ 175
1
4.3
8
2
1000
3
10.5
4
8.2c

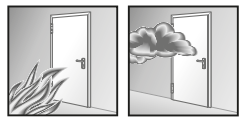

9/A3
9/A4
9/A5
≥ 175
10.5
1
4.3
8
2
1000
3
10-13
4
8.2c

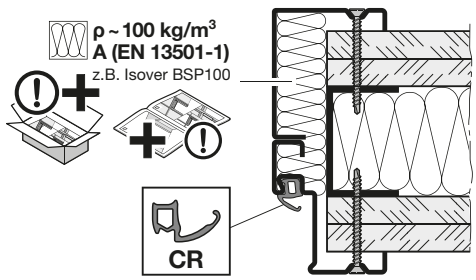

9/A6
DIN 9021-8.4-140 HV
≥ 120
≥ 120
9/A7
max. T30
CR
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
① = 30 × (A - 5)
② = 15 × 22,5
③ = 15 × (X + 24)
10.5
≤ 13
> 13
A
X
≥ 120
1
8
1000
2
4.3
15
3
4
10-13
5
8.2c

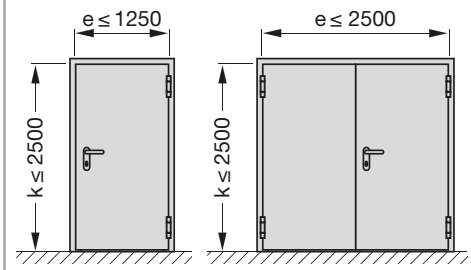

9/A8
9/A9
10.5
1
8
1000
2
4.3
3
4
10-13
5
8.2c

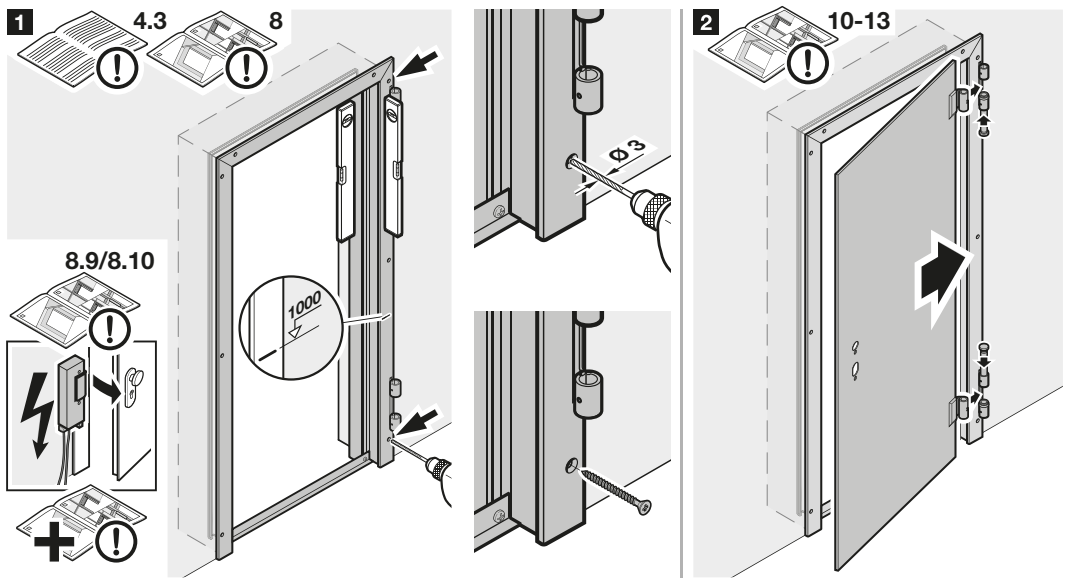
9/A10

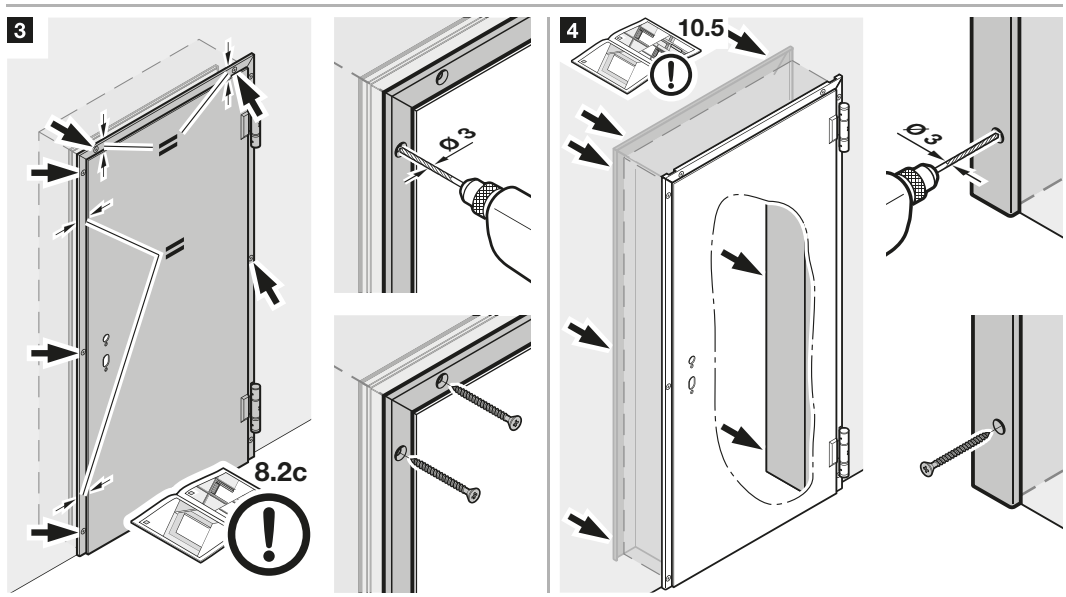
max. T30/
$EI_2$30

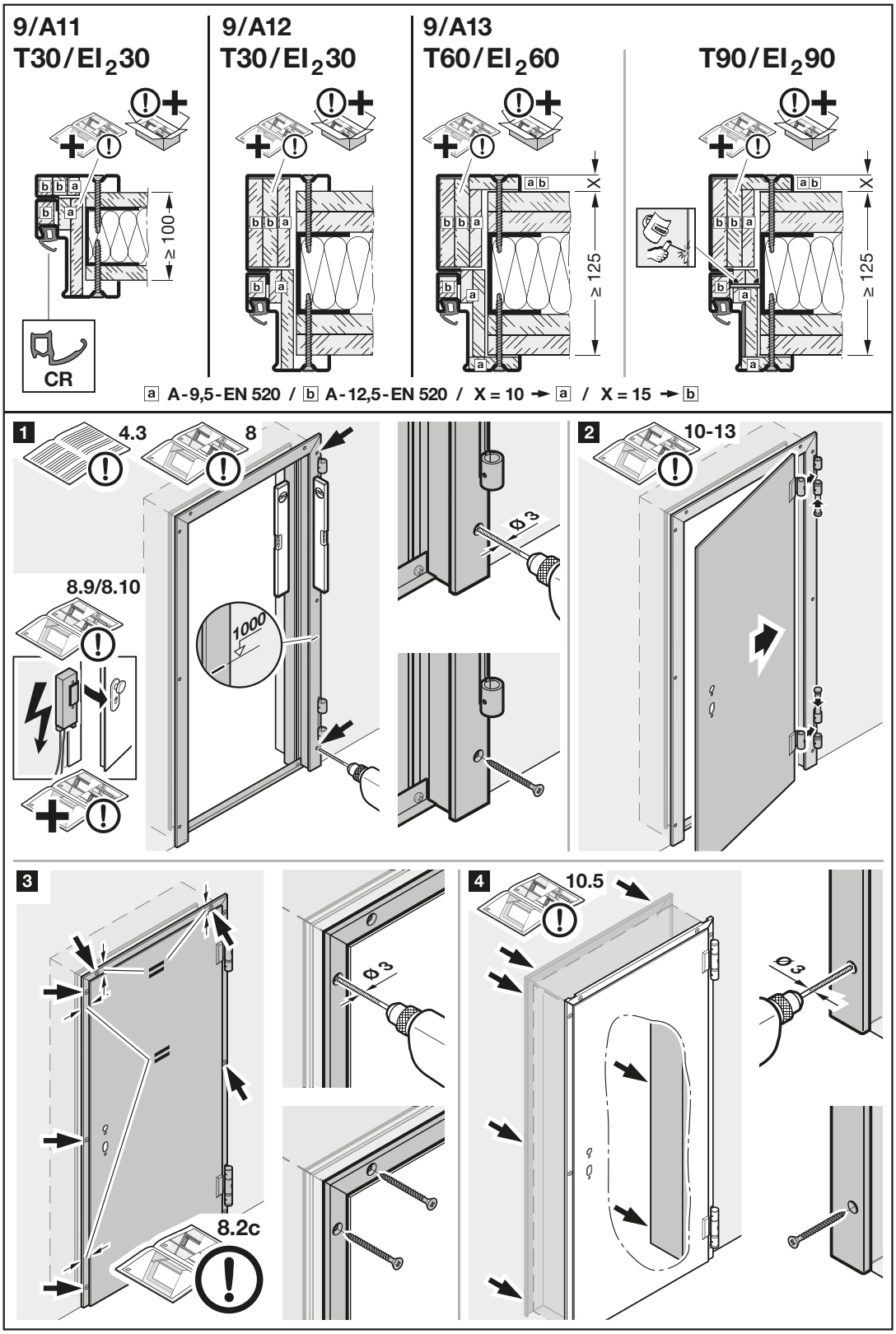


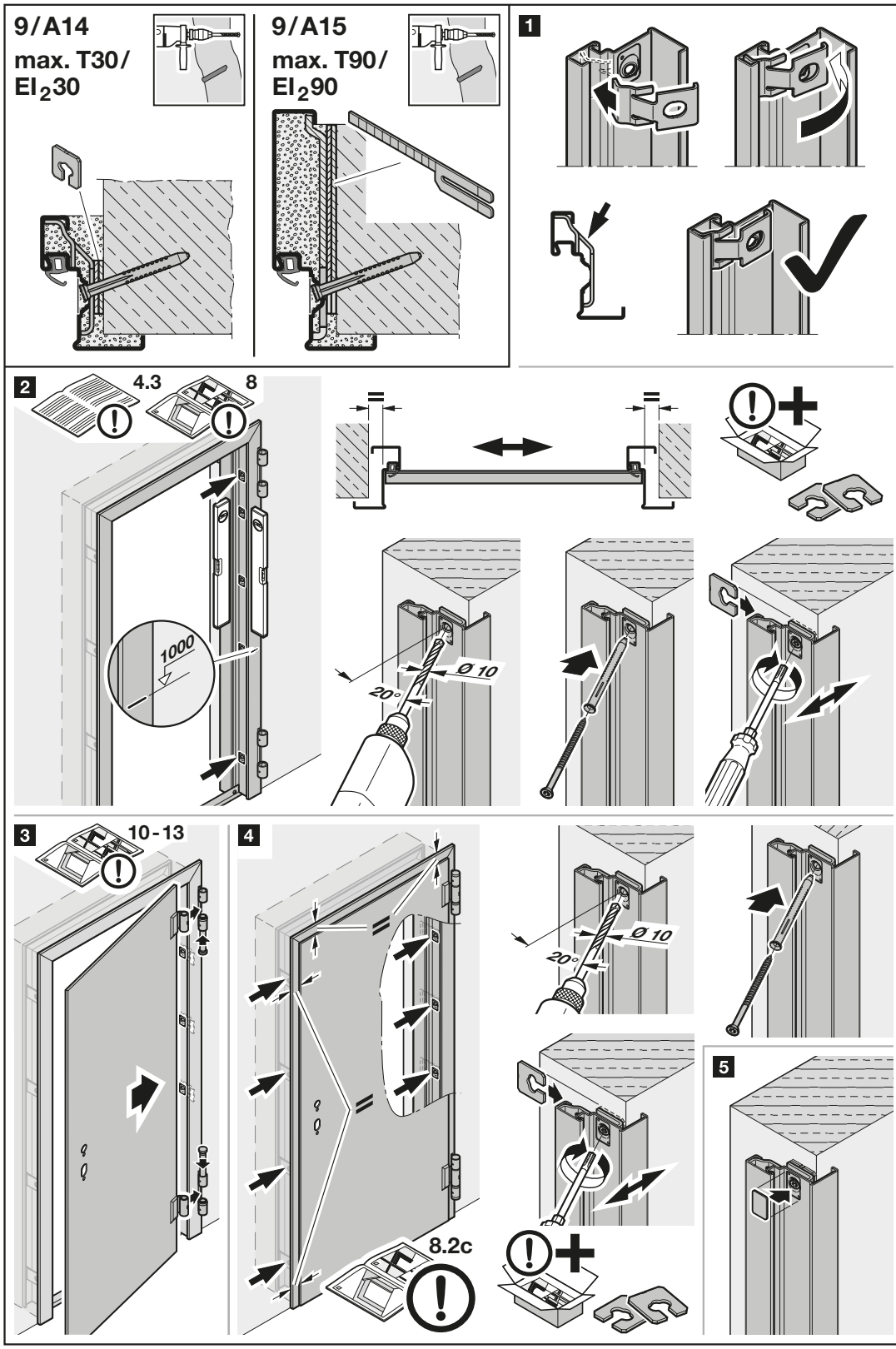


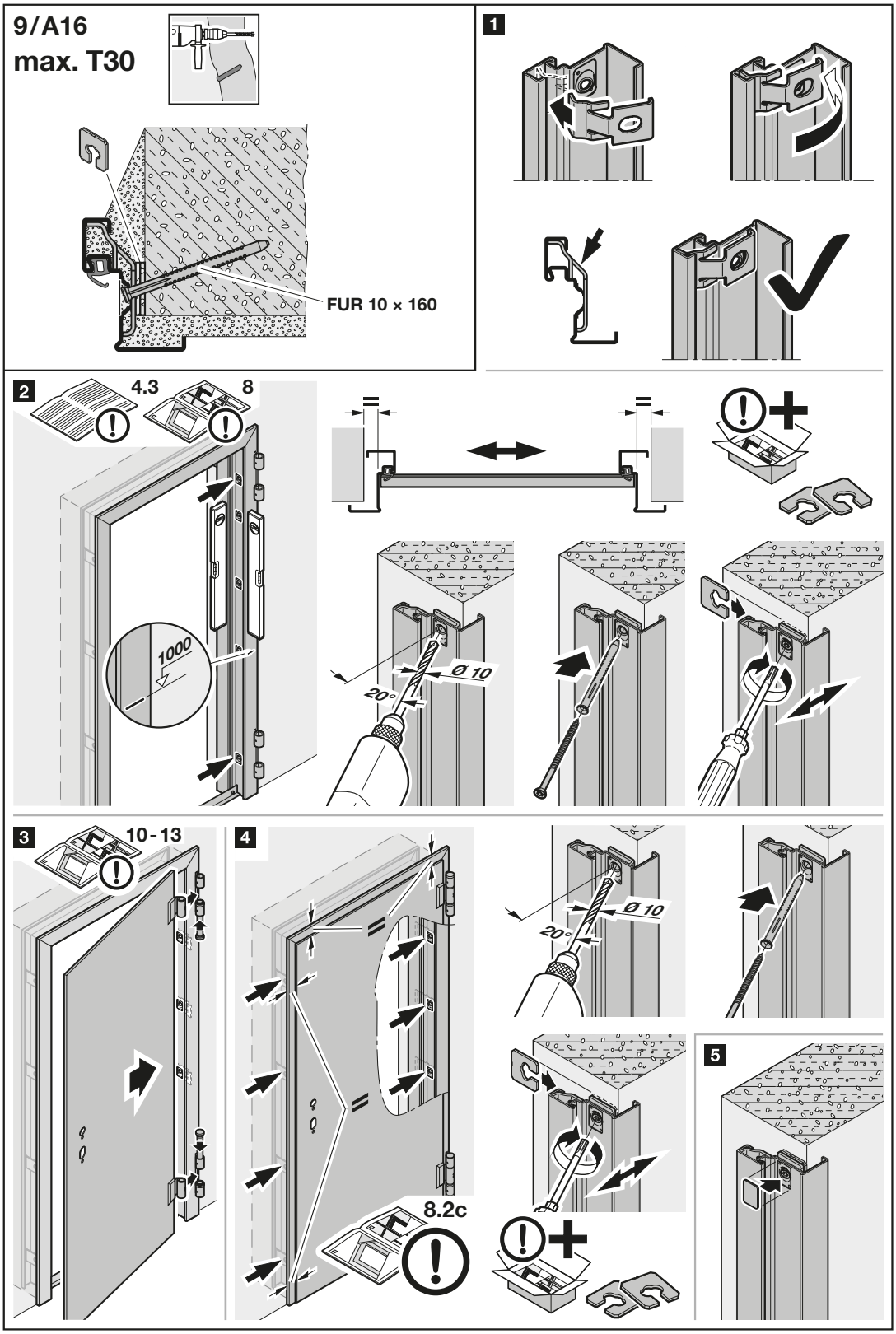




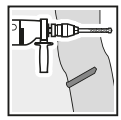


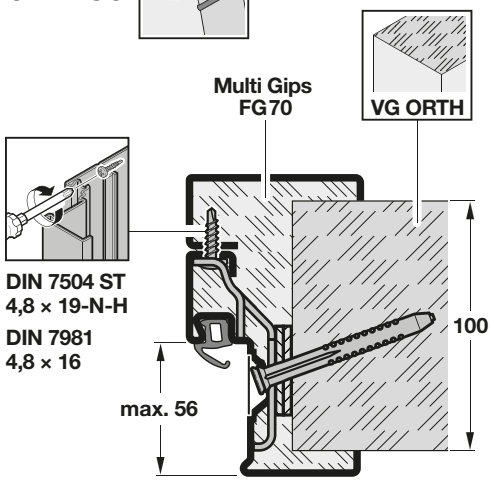

9/A11
T30/EI2 30
9/A12
T30/EI2 30
9/A13
T60/EI2 60
T90/EI2 90
≥ 100
≥ 125
X
CR
a A-9,5-EN 520 / b A-12,5-EN 520 / X = 10 ➙ a / X = 15 ➙ b
1
4.3
8
8.9/8.10
1000
Ø3
2
10-13
3
8.2c
4
10.5

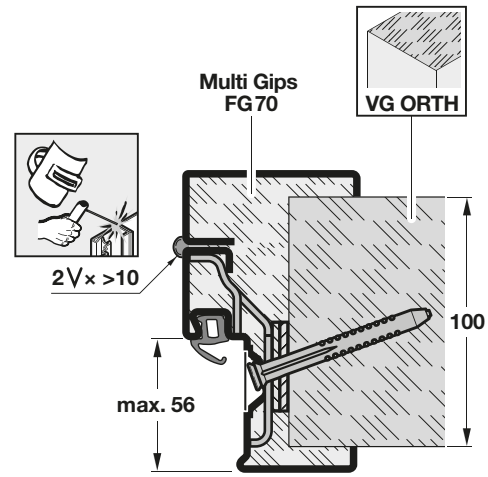

9/A14
max. T30/
EI230
9/A15
max. T90/
EI290
1
2
4.3
8
1000
Ø 10
20°
3
10-13
4
Ø 10
20°
8.2c
5


9/A16
max. T30
FUR 10 × 160
1
2
4.3
8
1000
Ø 10
20°
3
10-13
4
8.2c
5

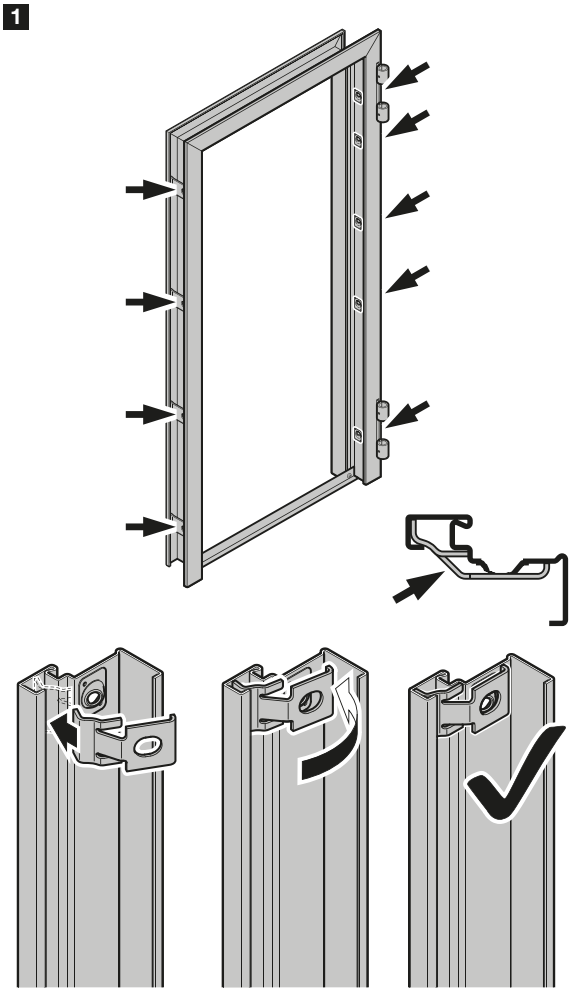
9/A17
max. T30



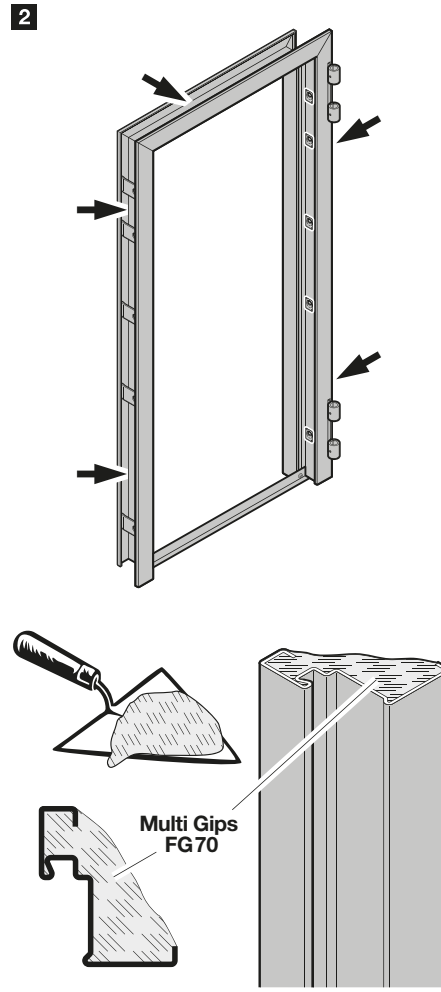


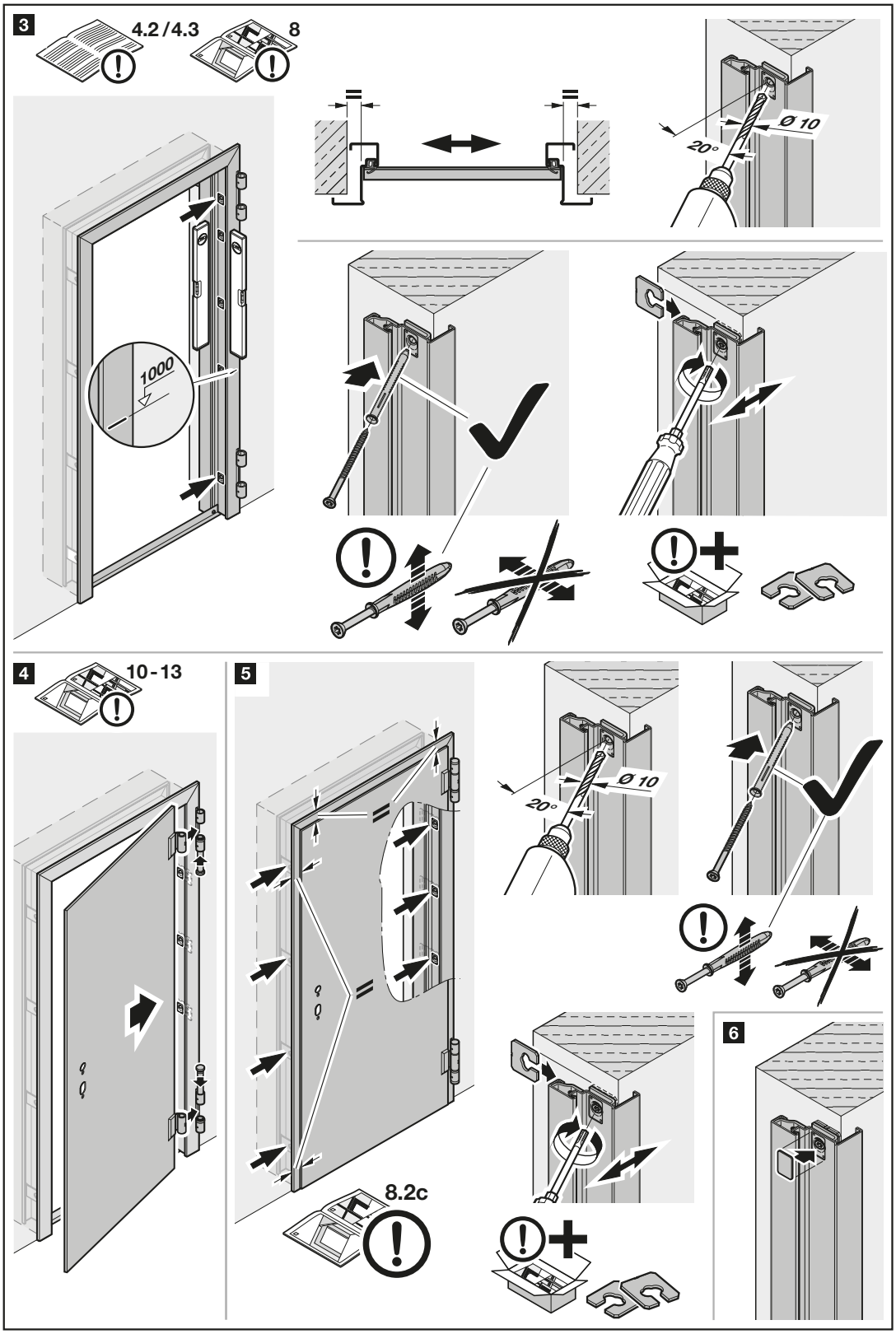


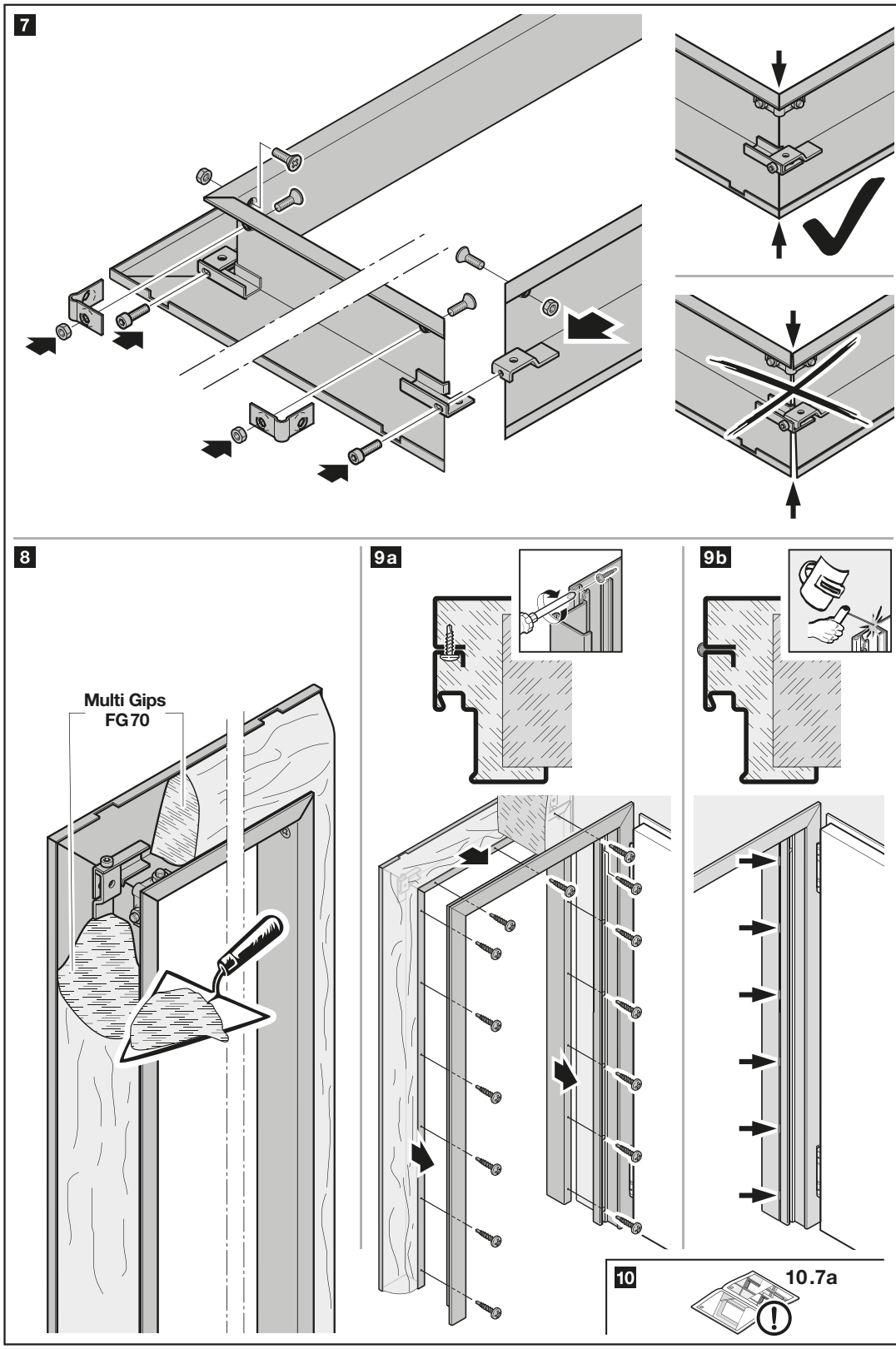
1



2

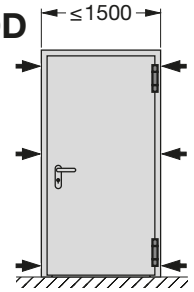



3
4.2 / 4.3
8
1000
Ø 10
20°
4
10 - 13
5
Ø 10
20°
8.2c
6

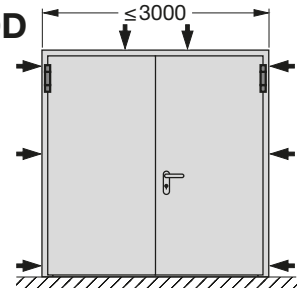

7
8
Multi Gips
FG70
9a
9b
10
10.7a

9/B1-B16

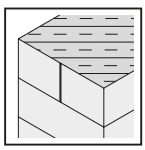
D65-1 OD

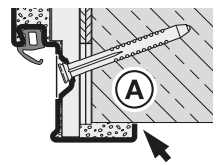


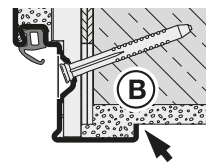
D65-2 OD



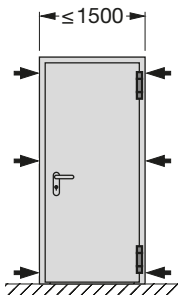
➔ **Fischer:** FUR 10 × 100



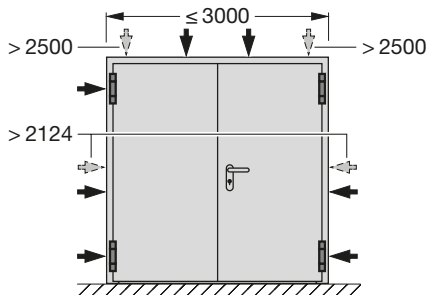




H3-1 OD

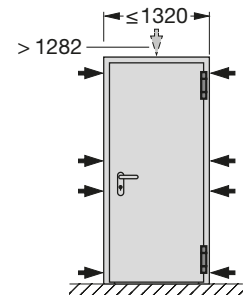


H3-2 OD



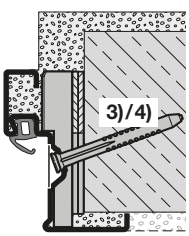
BRB ≤ 2500 ➔ **3) Fischer:** FUR 10 × 100
BRB > 2500 ➔ **4) Fischer:** FUR 10 × 160

H6-1 OD
H16-1 OD

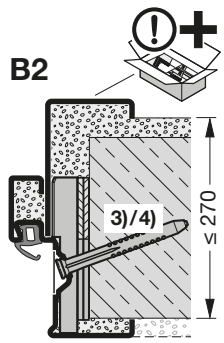


➔ **4) Fischer:** FUR 10 × 160

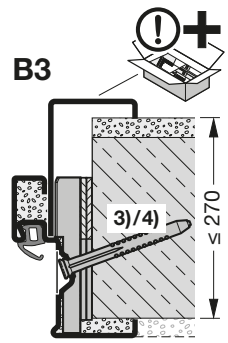
B1



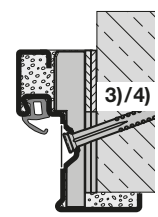
B2



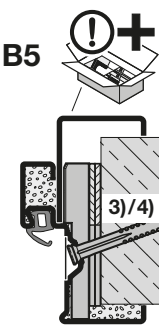
B3



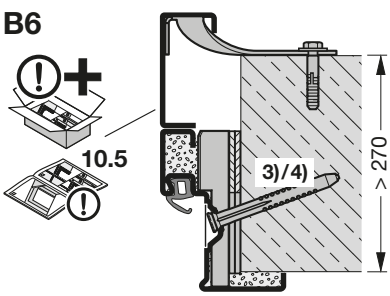
B4



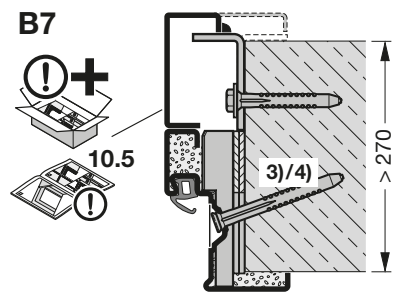
B5



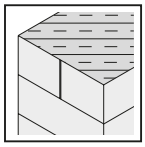
B6



B7



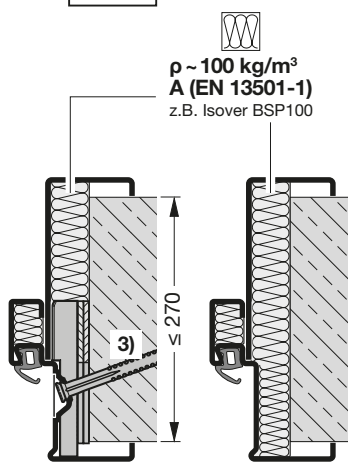
➔ 1 2 3a 4 ...



max. T30 / EI$_2$30

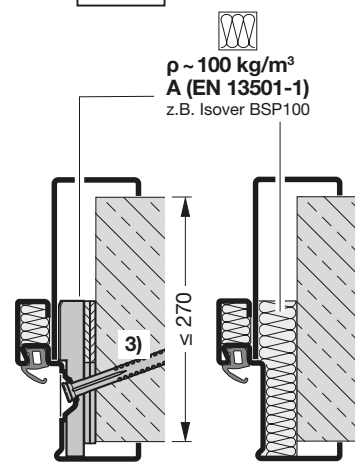
B8

CR

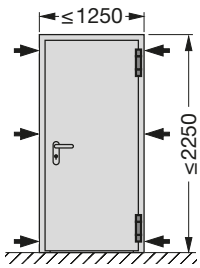


B9

CR

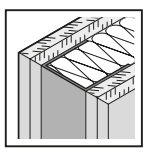


H3-1 OD



→ **3) Fischer:** FUR 10 × 100

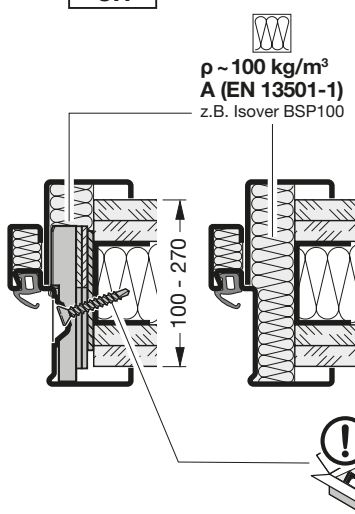
→ 1 2 3a 4 ...



max. T30 / EI$_2$30

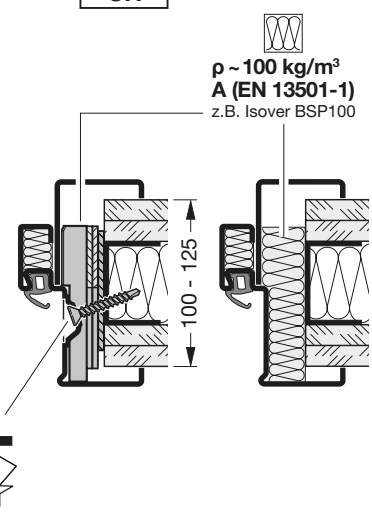
B10

CR

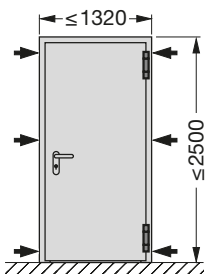


B11

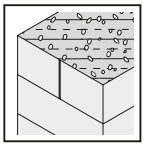
CR



H3-1 OD

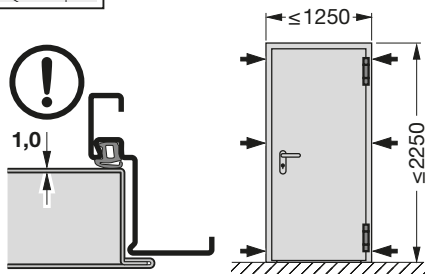


→ 1 2 3b 4 ...



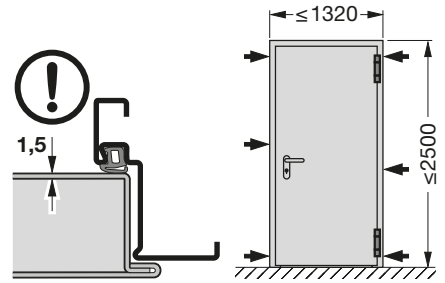
max. T30/EI$_2$30

H3-1 OD



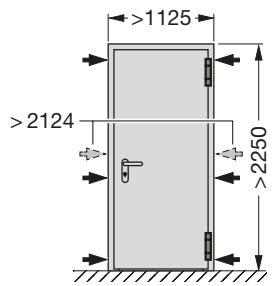
→ **4) Fischer:** FUR 10 × 160

H3-1 OD



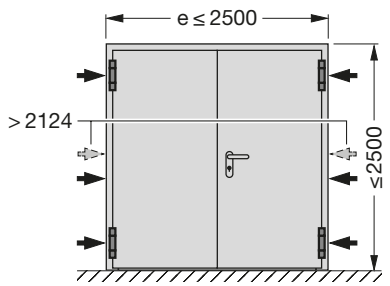
→ **4) Fischer:** FUR 10 × 160

H3-1 OD



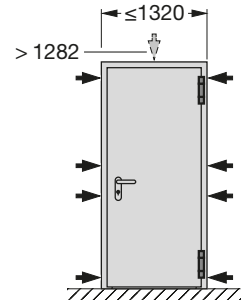
→ **4) Fischer:** FUR 10 × 160

H3-2 OD



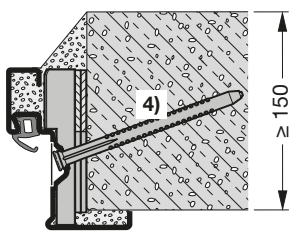
→ **4) Fischer:** FUR 10 × 160

H16-1 OD

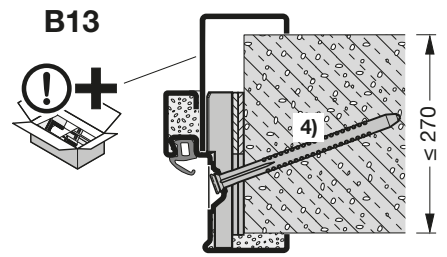


→ **4) Fischer:** FUR 10 × 160

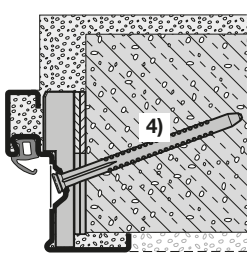
B12



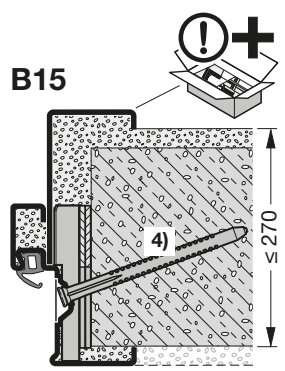
B13



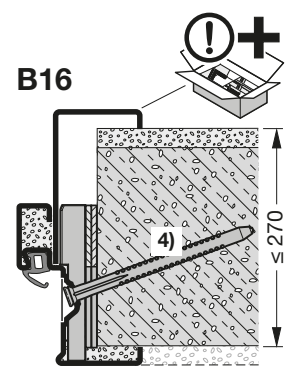
B14



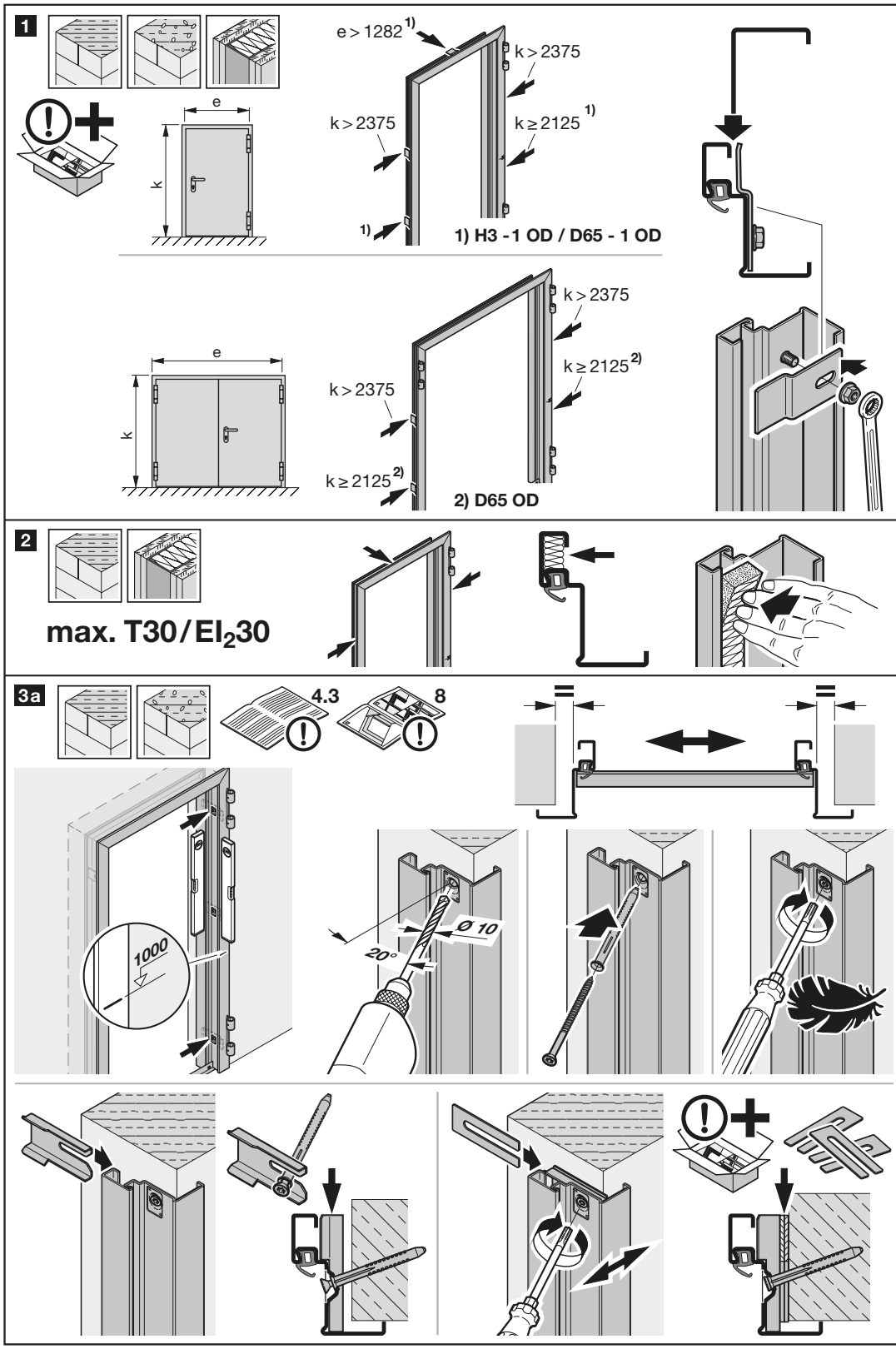
B15

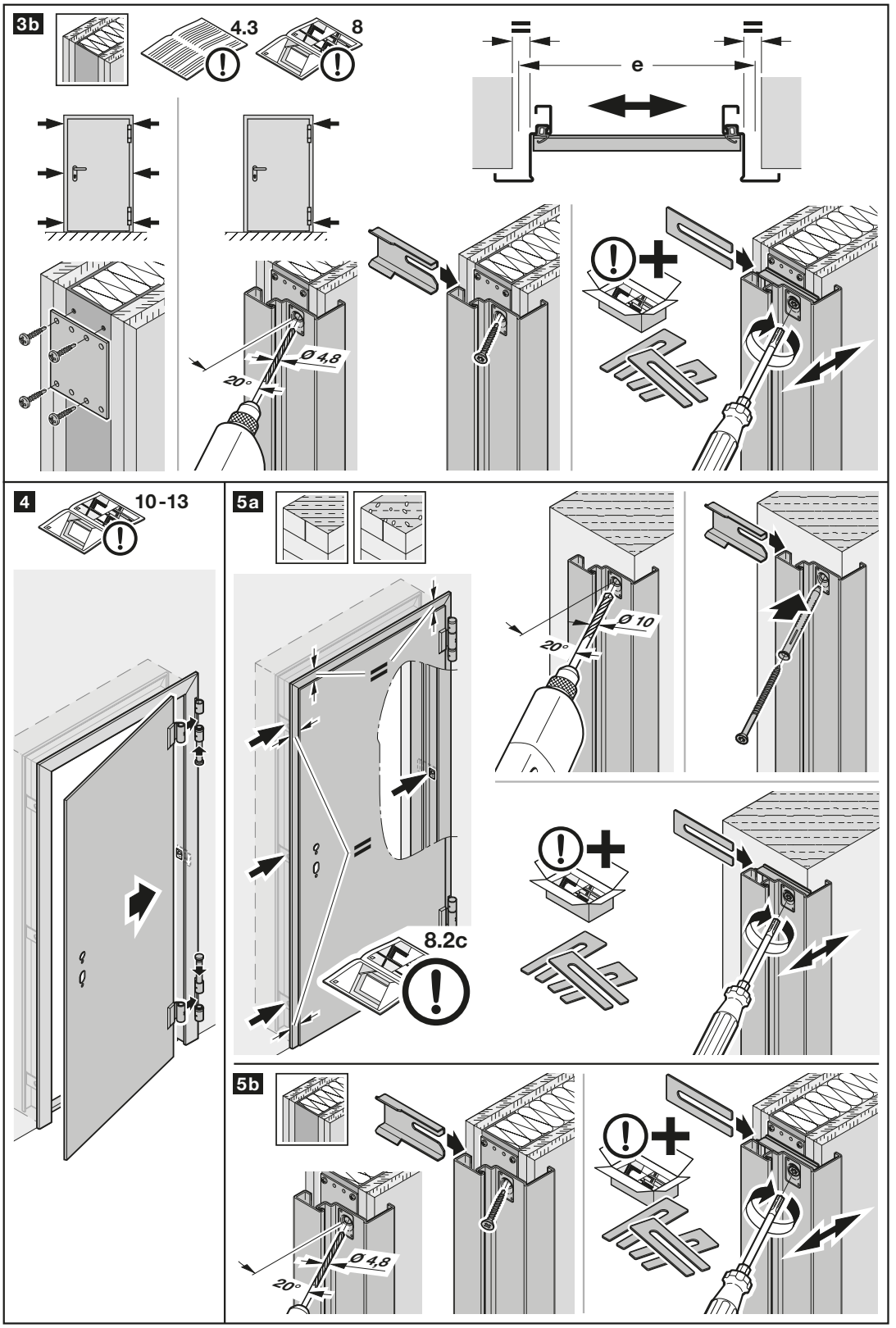


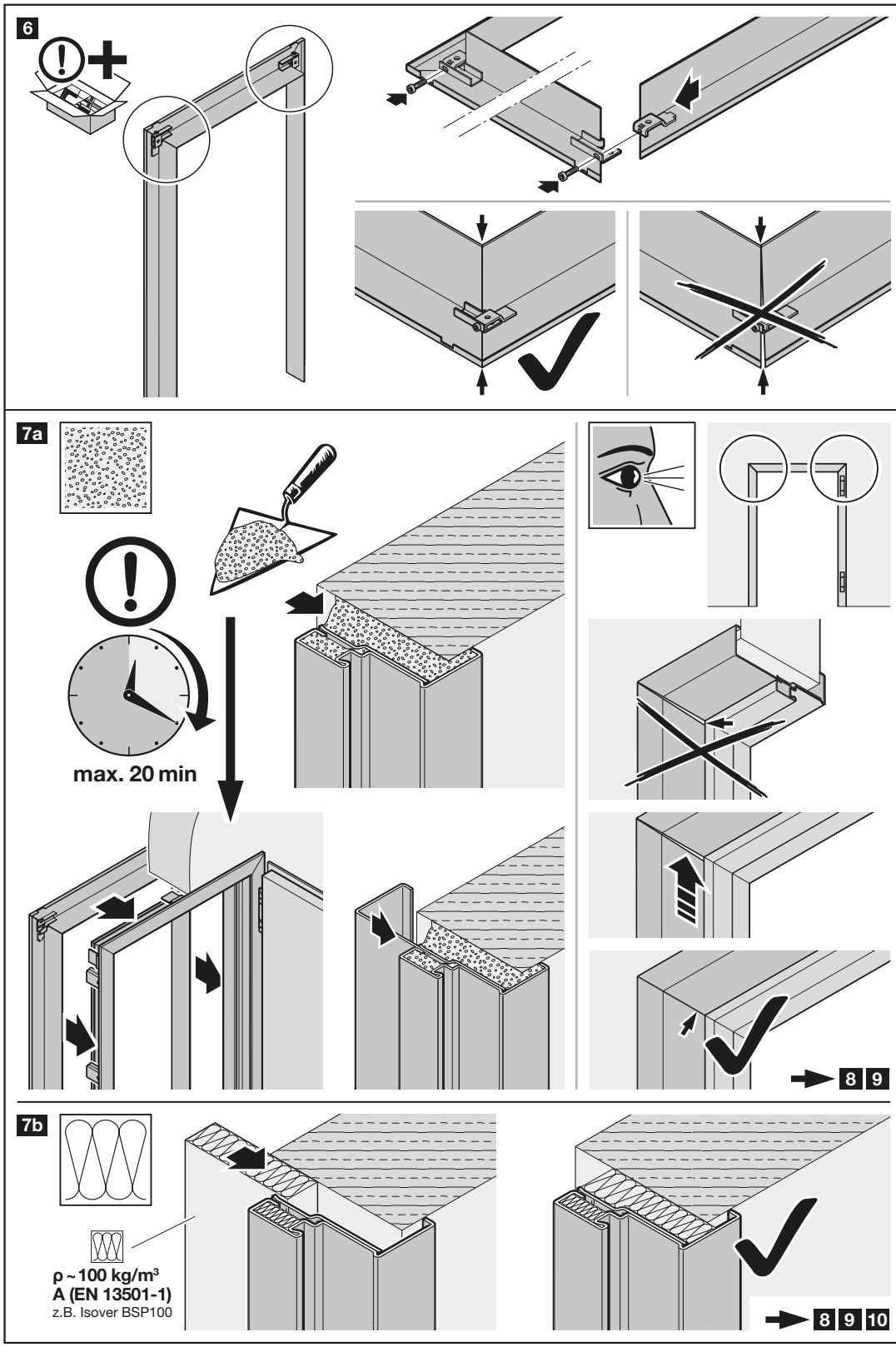
B16

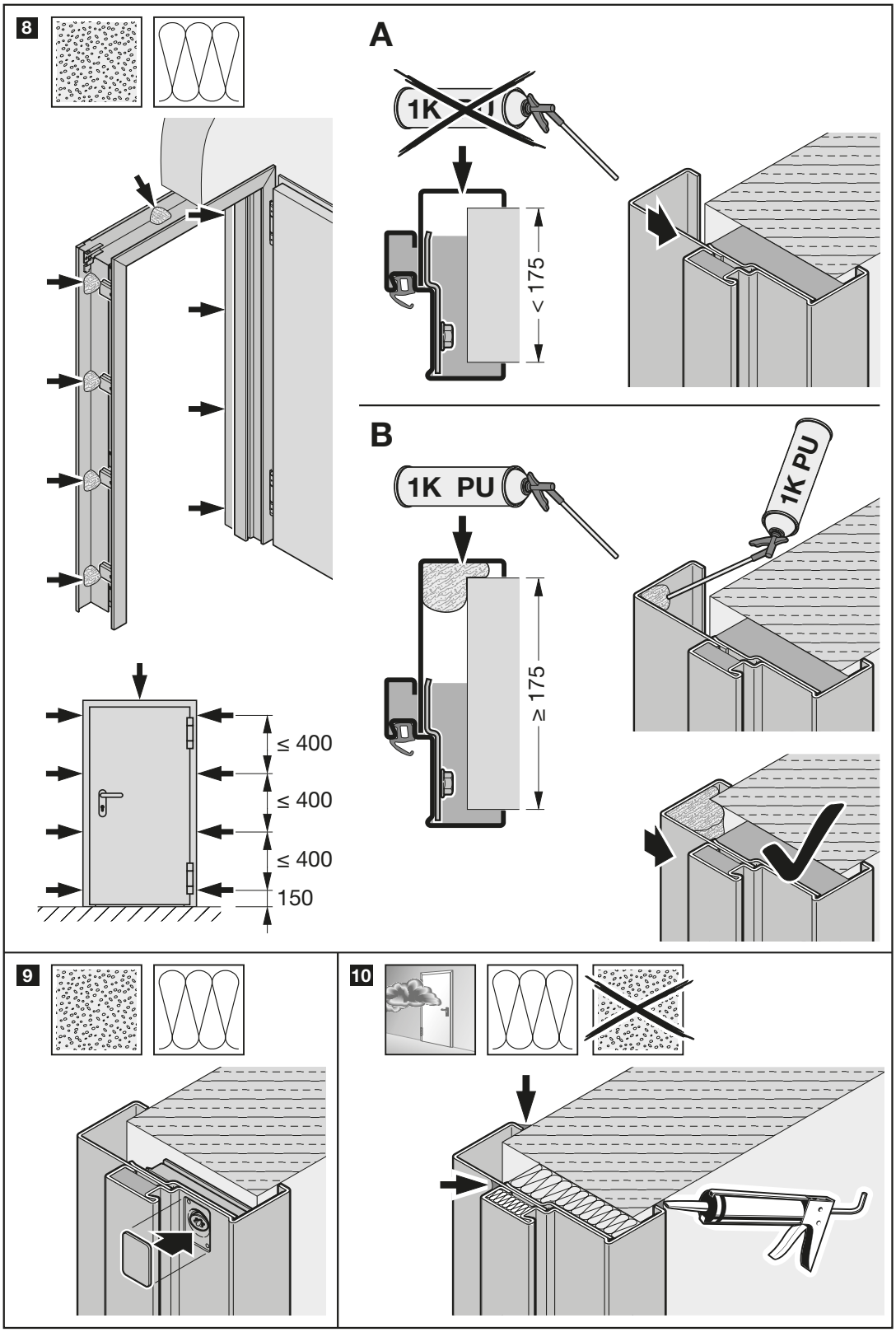


→ **1** **2** **3a** **4** ...


1
e > 1282 1)
k > 2375
k > 2375
k ≥ 2125 1)
1)
1) H3 -1 OD / D65 - 1 OD
e
k
k > 2375
k ≥ 2125 2)
k > 2375
k ≥ 2125 2)
2) D65 OD
2
max. T30/EI2 30
3a
4.3
8
1000
Ø 10
20°

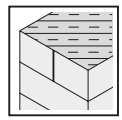

3b
4.3
8
e
Ø 4,8
20°
4
10-13
5a
Ø 10
20°
8.2c
5b
Ø 4,8
20°

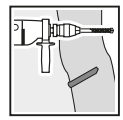

6
7a
max. 20 min
8 9
7b
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
8 9 10


8
A
1K
< 175
B
1K PU
1K PU
≥ 175
≤ 400
≤ 400
≤ 400
150
9
10

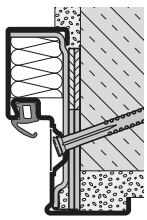
9/C1-C8
max. T30/ $EI_2$30

CR

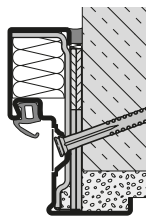




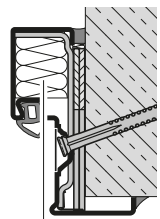
C1



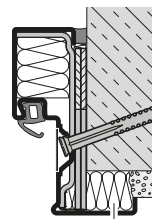
C2



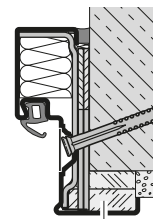
C3



C4



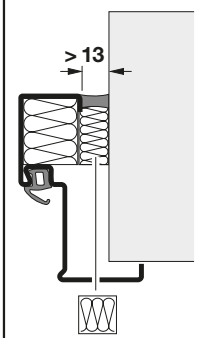
C5



ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100

A-EN 520

→ 1a 2 ...

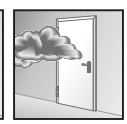


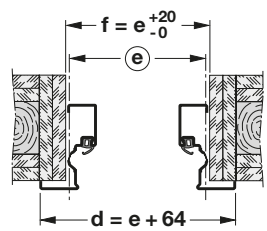
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100

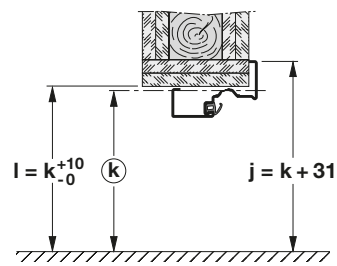
→ 6

max. T30/ $EI_2$30

CR

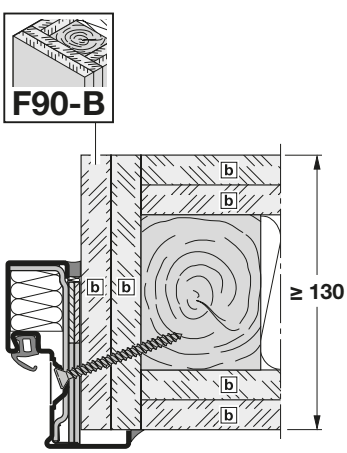


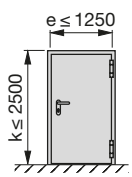


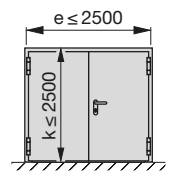


C6 F90B DIN 4102-4 Tab. 49

F90-B

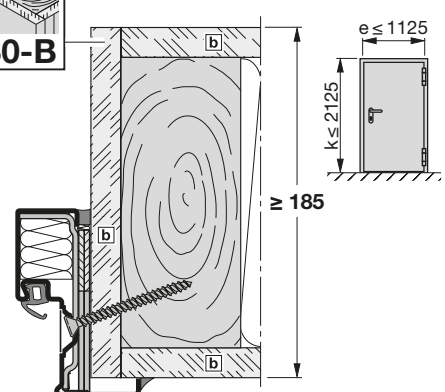






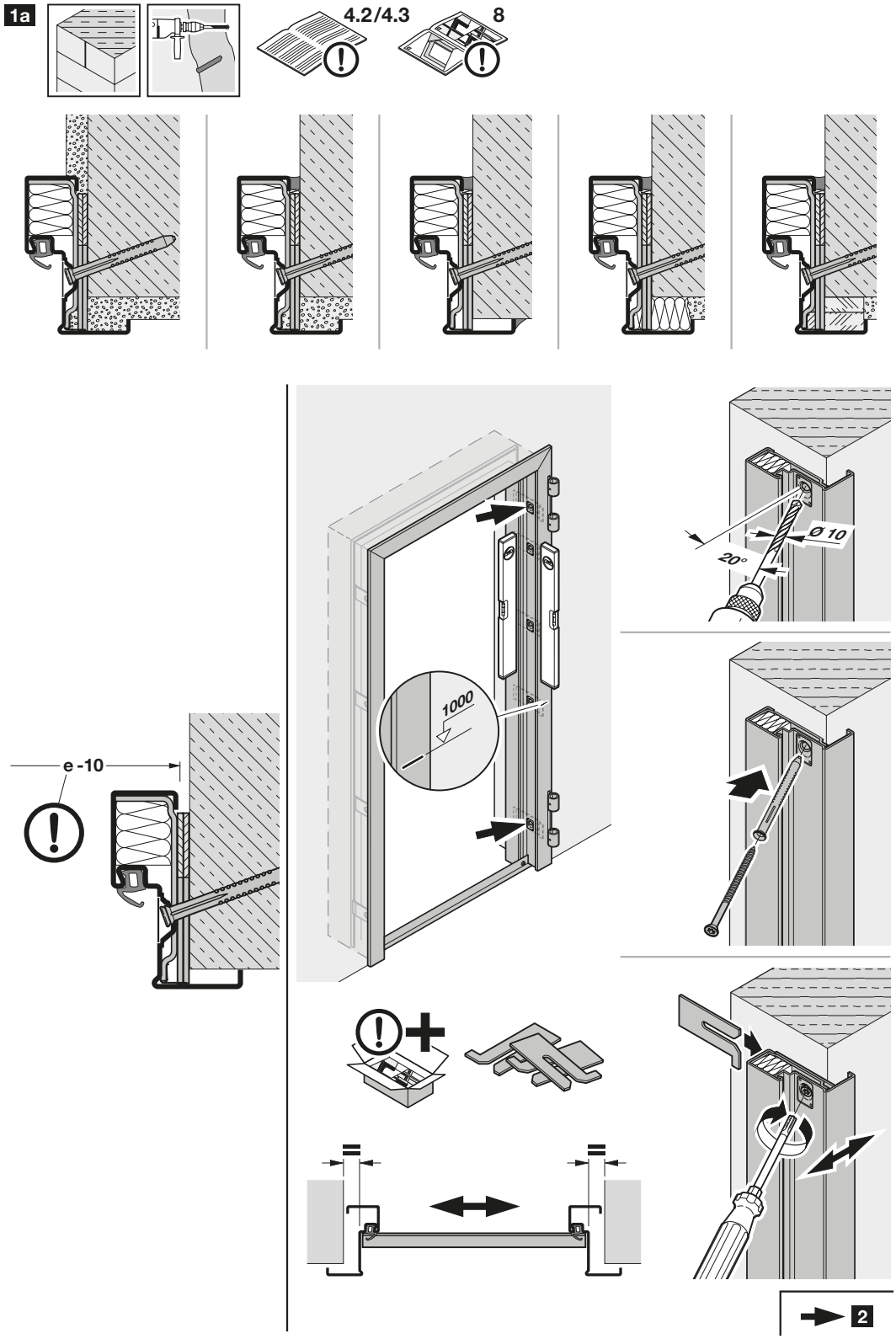
C7 F30B DIN 4102-4 Tab. 49

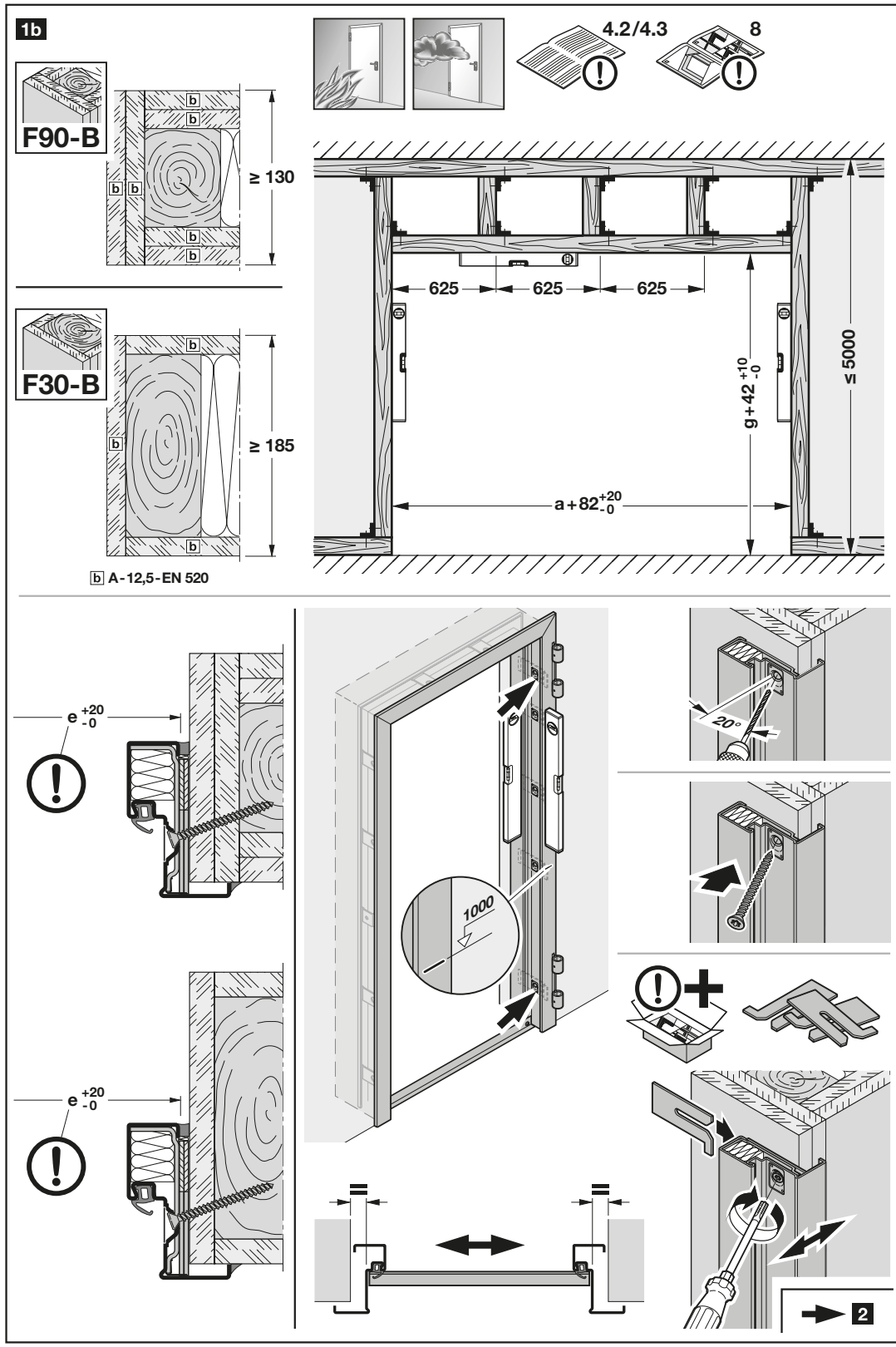
F30-B

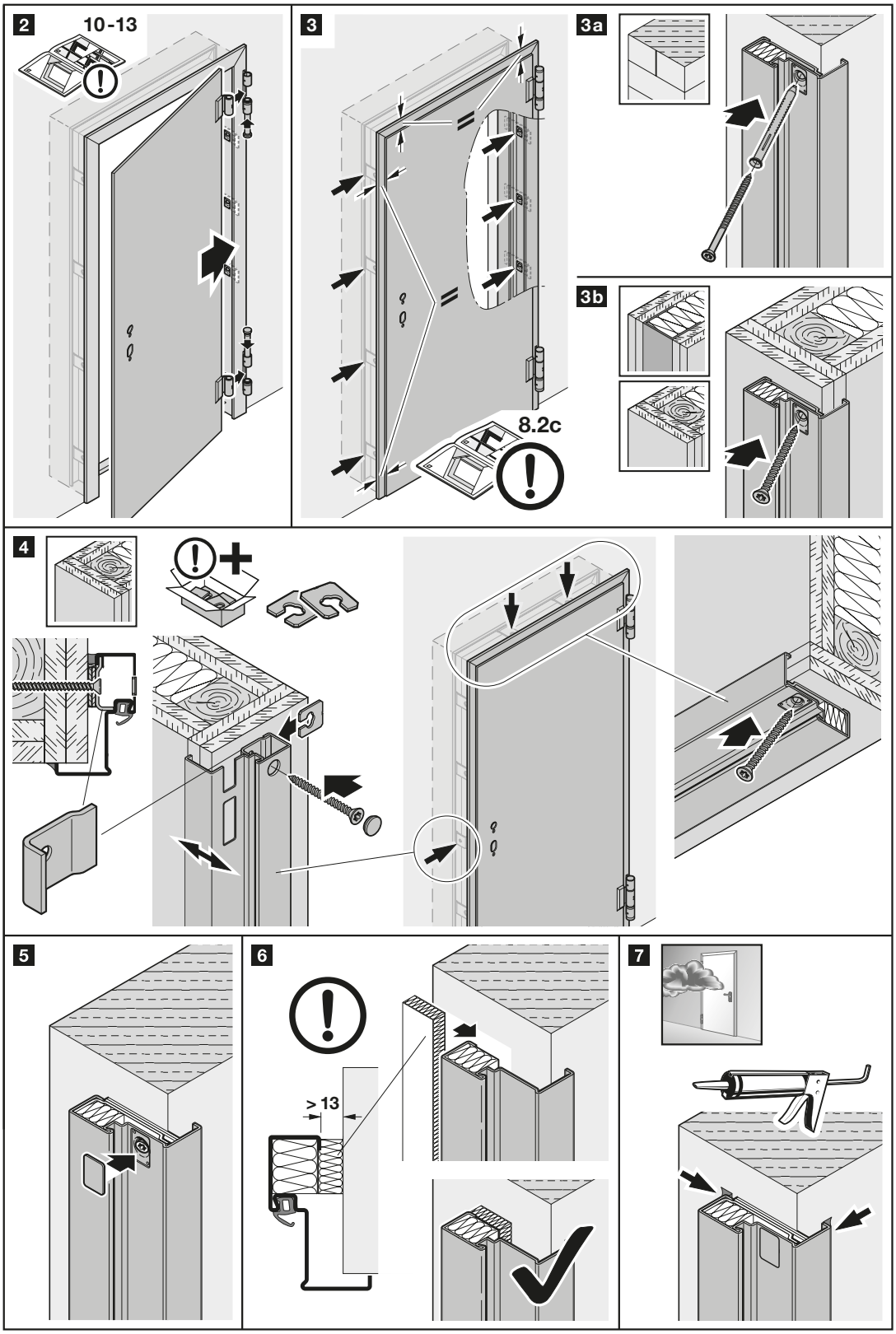


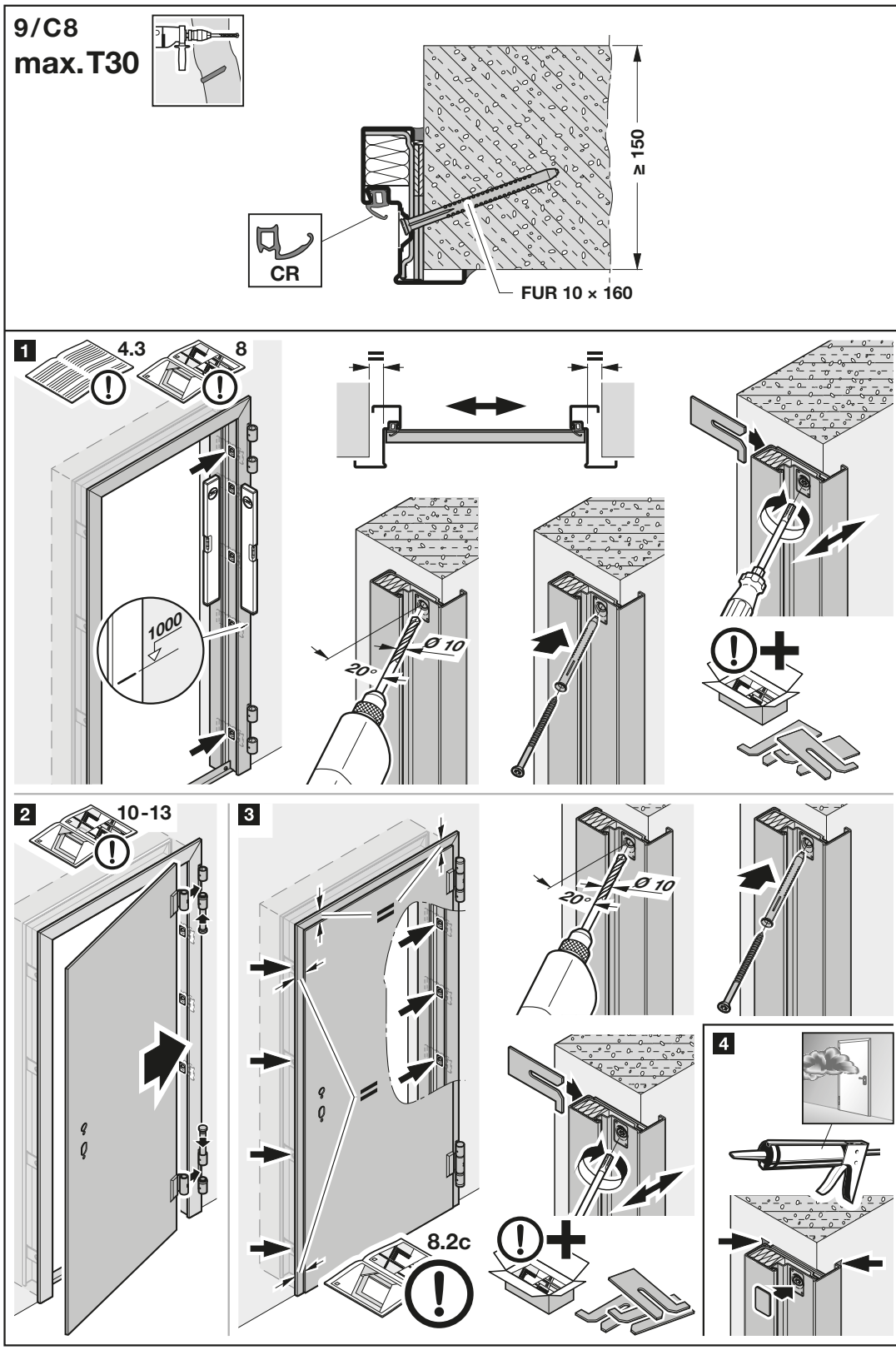
b A-12,5-EN 520

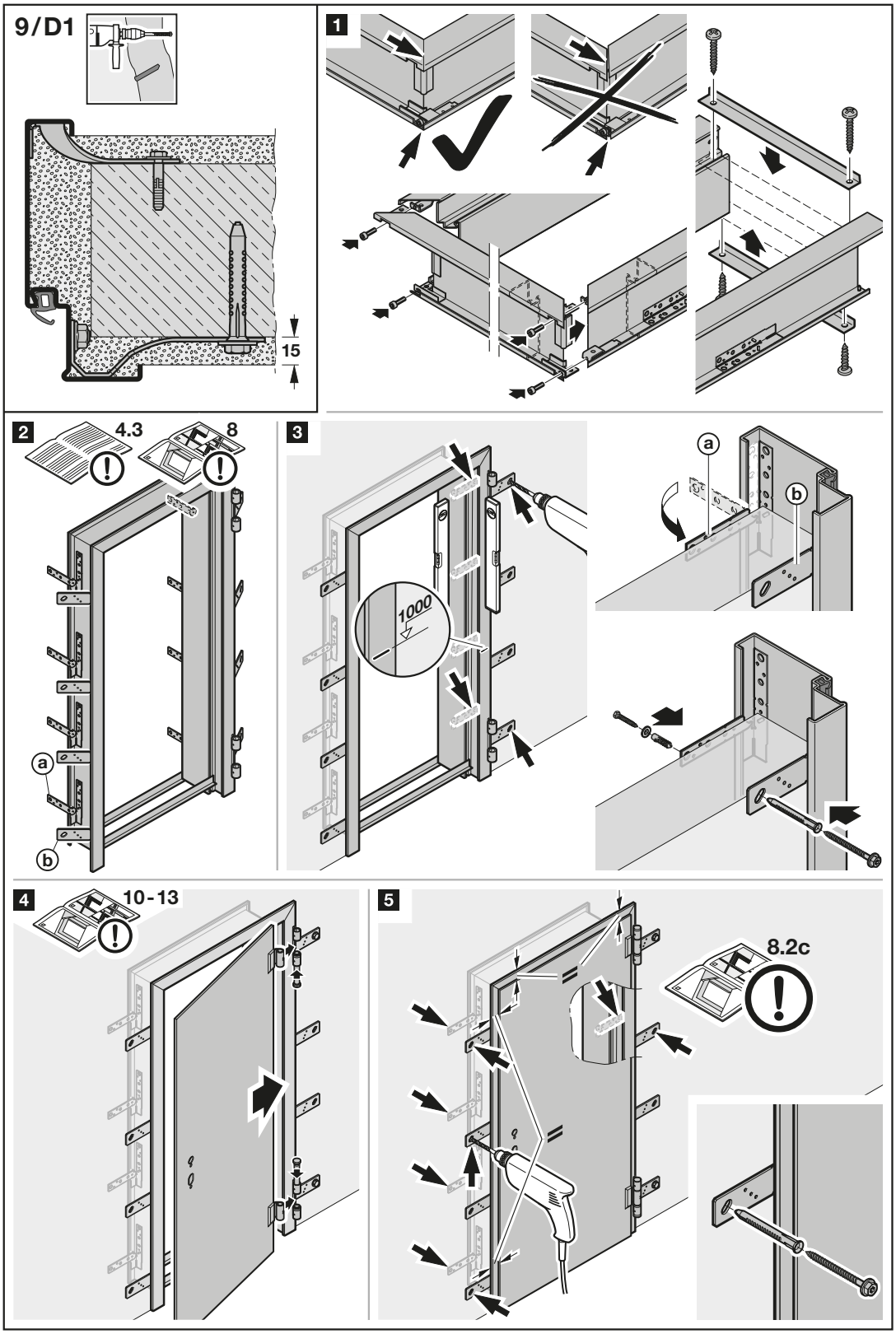
→ 1b 2 ...

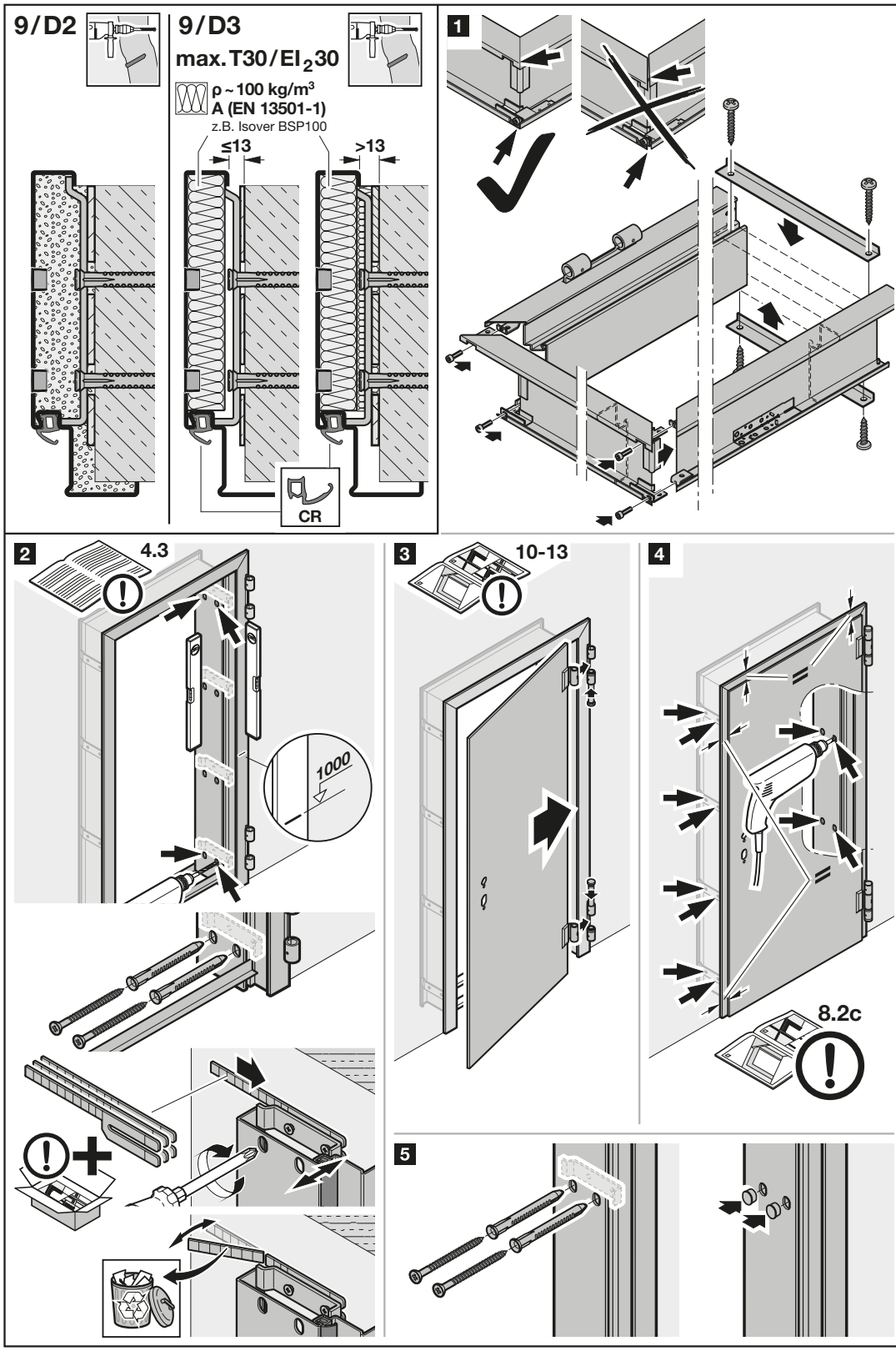

1a
4.2/4.3
8
e -10
1000
Ø 10
20°
2

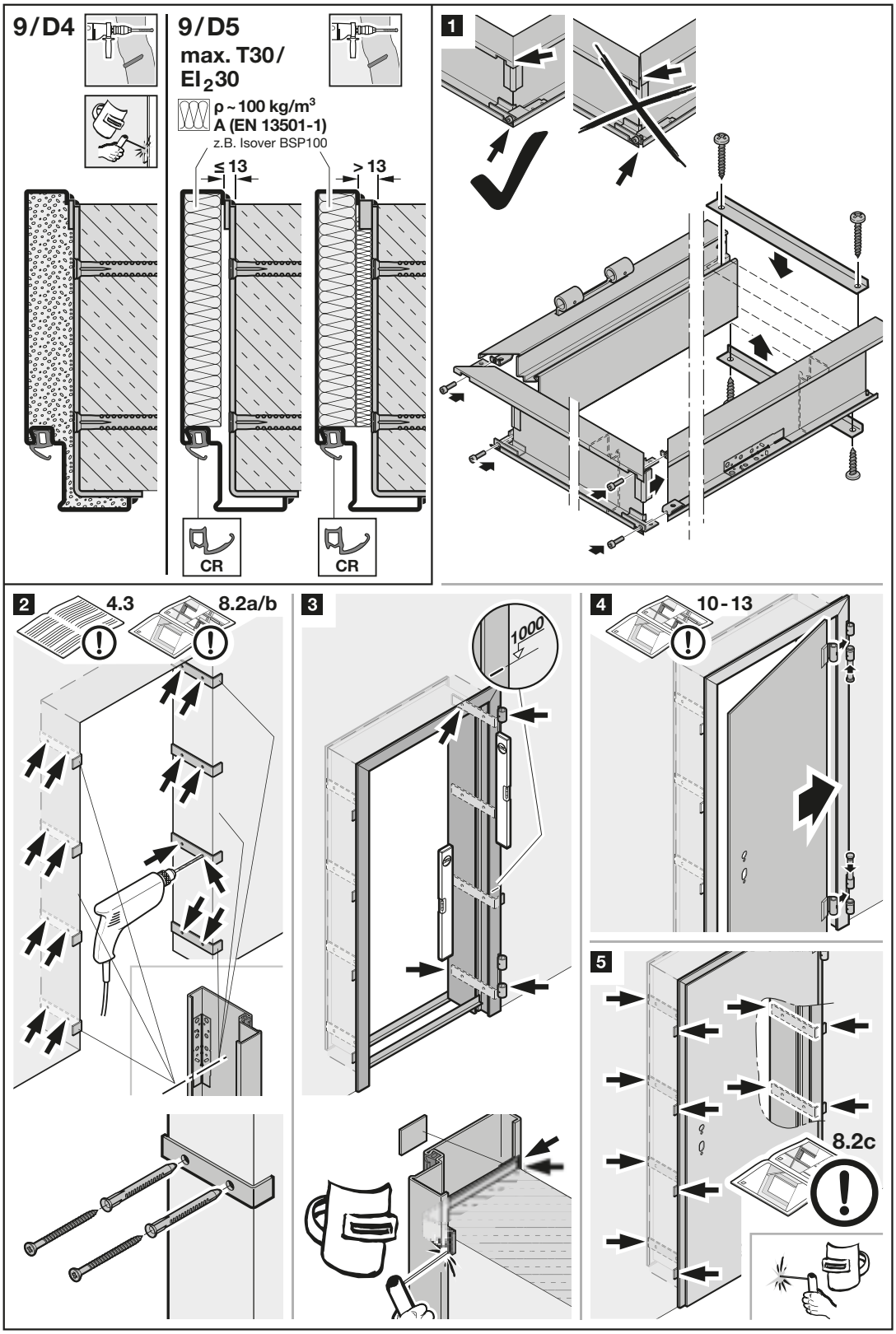

1b
F90-B
≥ 130
F30-B
≥ 185
b A-12,5-EN 520
4.2/4.3
8
625
625
625
g+42 +10 -0
≤ 5000
a+82 +20 -0
e +20 -0
e +20 -0
1000
20°
2

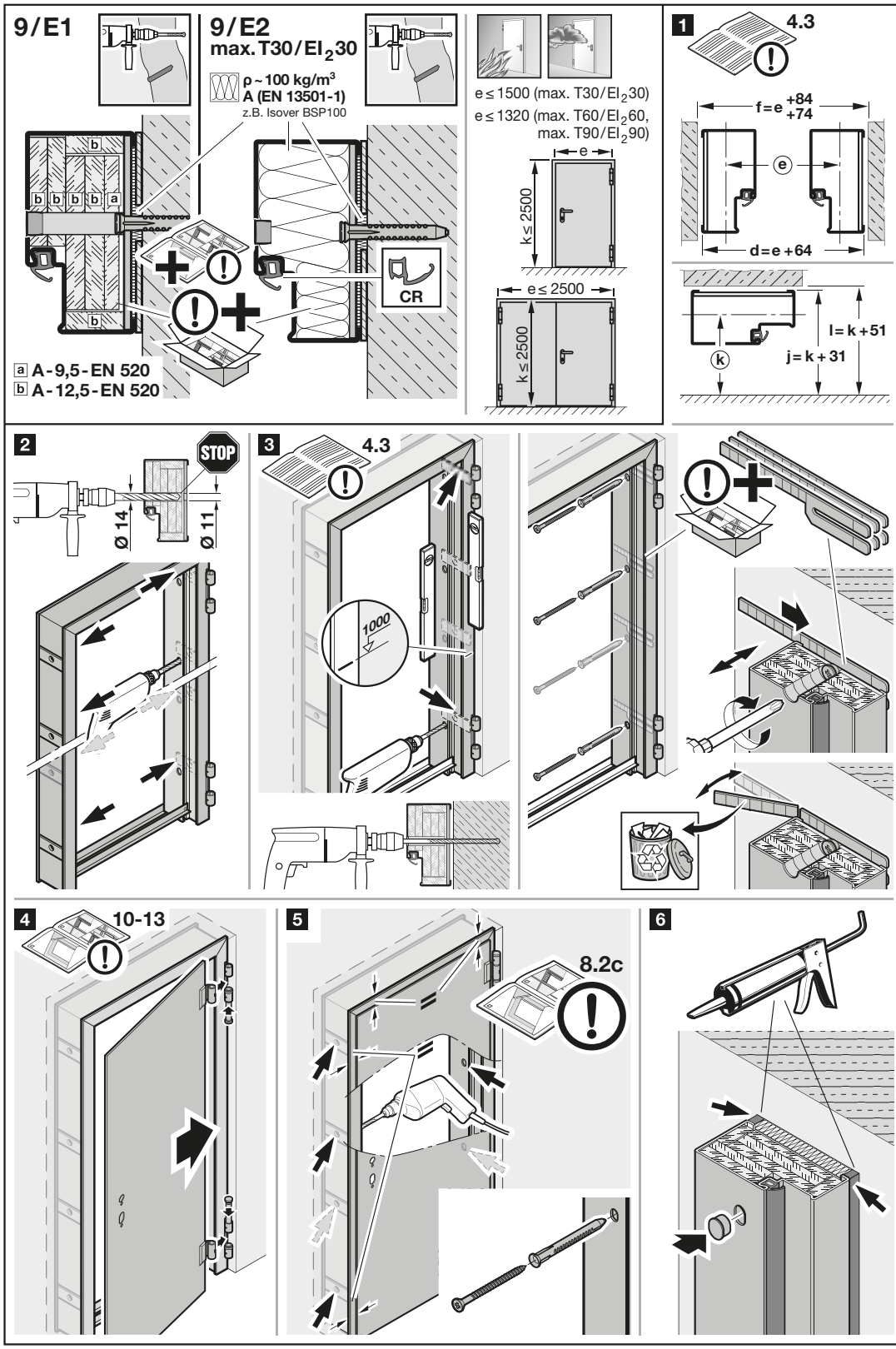

2
10-13
3
8.2c
3a
3b
4
5
6
> 13
7

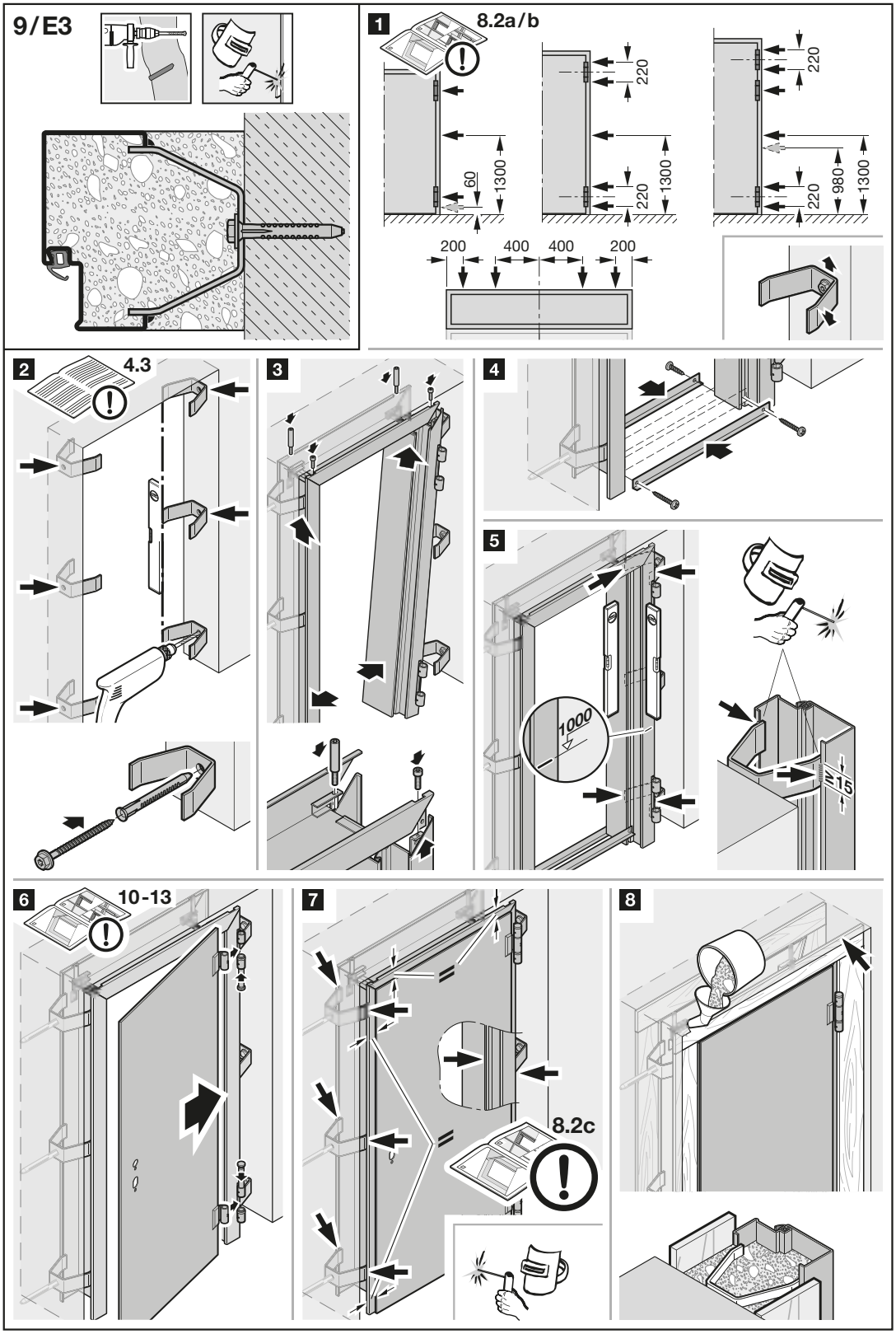

9/C8
max.T30
CR
≥ 150
FUR 10 × 160
1
4.3
8
1000
Ø 10
20°
2
10-13
3
Ø 10
20°
8.2c
4

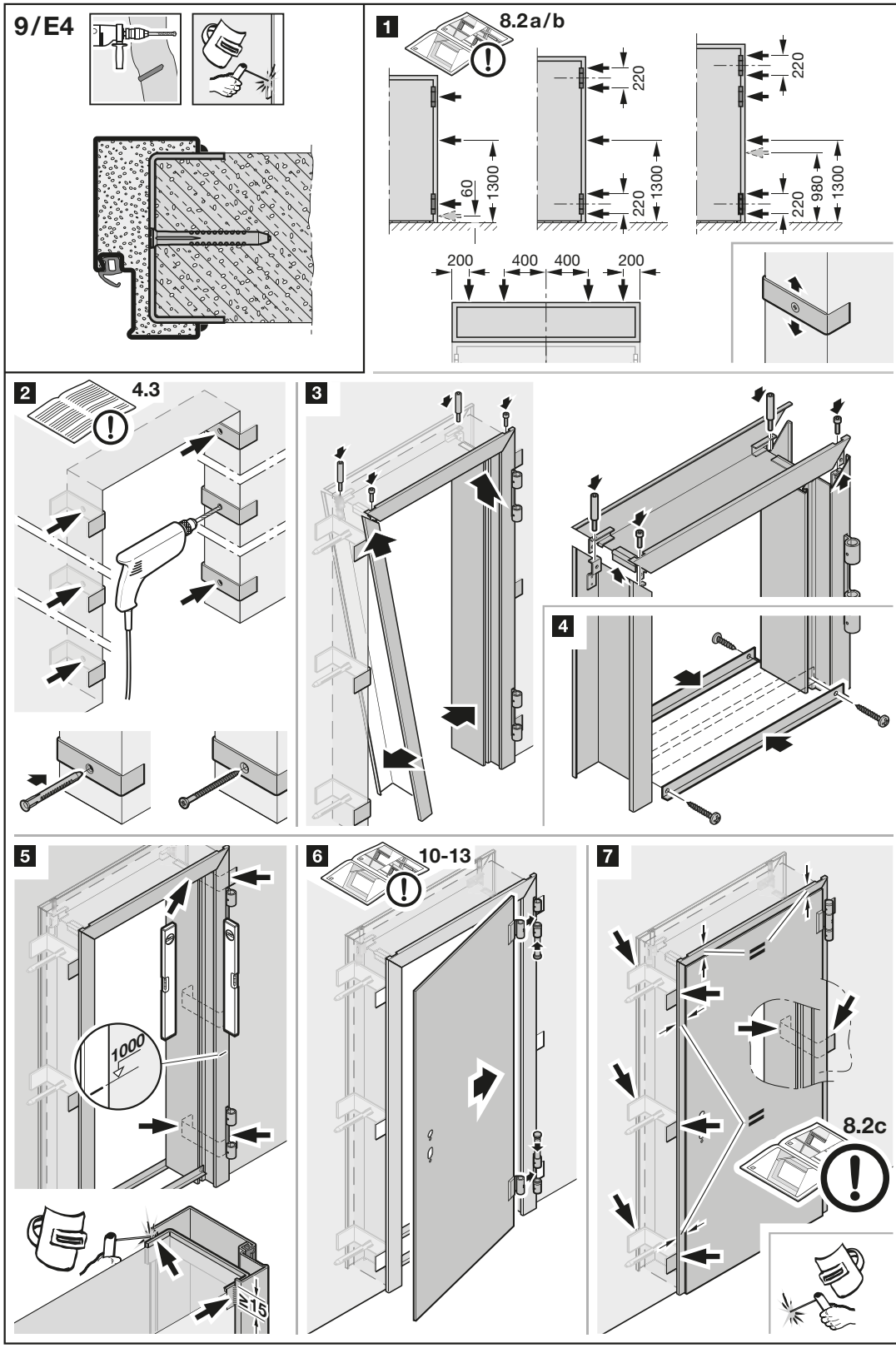

9/D1
15
1
2
4.3
8
a
b
3
1000
a
b
4
10-13
5
8.2c


9/D2
9/D3
max. T30/EI 230
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
≤13
>13
CR
1
2
4.3
1000
3
10-13
4
8.2c
5


9/D4
9/D5
max. T30/
EI 230
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
≤ 13
> 13
CR
CR
1
2
4.3
8.2a/b
3
1000
4
10-13
5
8.2c

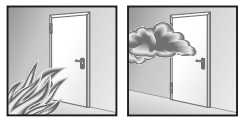

9/E1
9/E2
max. T30/EI2 30
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
a A-9,5-EN 520
b A-12,5-EN 520
CR
e ≤ 1500 (max. T30/EI2 30)
e ≤ 1320 (max. T60/EI2 60, max. T90/EI2 90)
e
k ≤ 2500
e ≤ 2500
k ≤ 2500
1
4.3
f = e +84 +74
e
d = e +64
l = k +51
k
j = k + 31
2
STOP
Ø 14
Ø 11
3
4.3
1000
4
10-13
5
8.2c
6

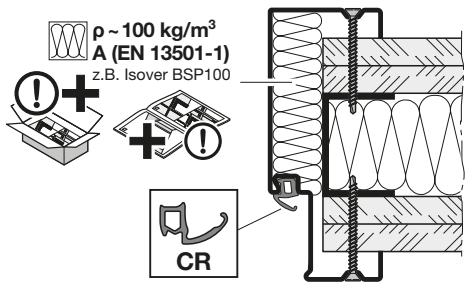

9/E3
1
8.2a/b
220
60
1300
980
200
400
2
4.3
3
4
5
1000
≥ 15
6
10-13
7
8.2c
8

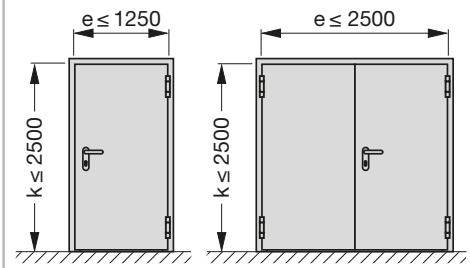

9/E4
1
8.2a/b
220
60
1300
980
200
400
2
4.3
3
4
5
1000
15
6
10-13
7
8.2c

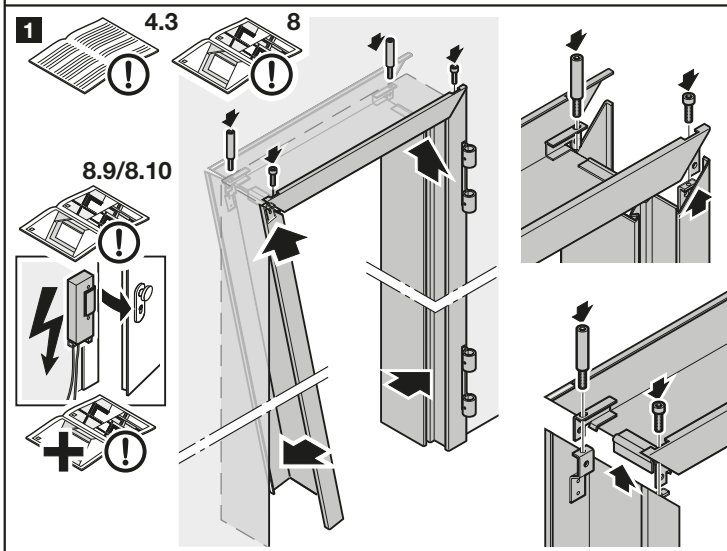
9/E5

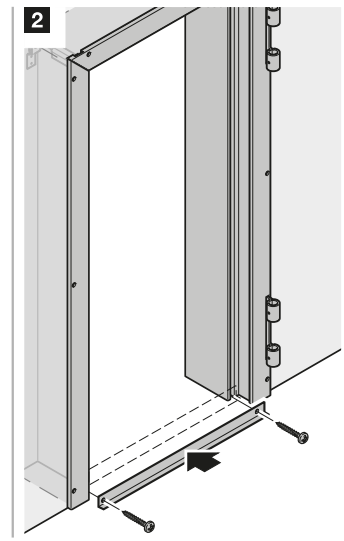
max. T30/ $EI_2$30

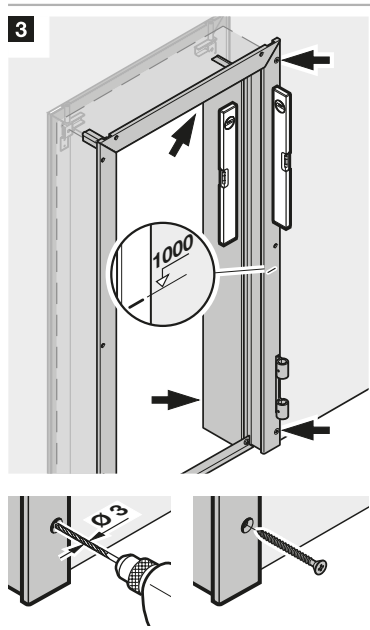


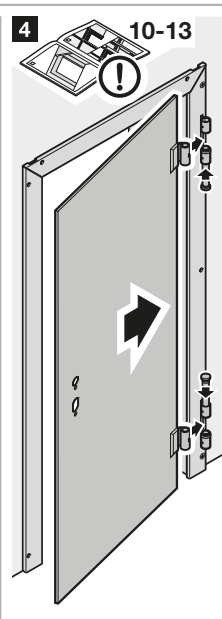


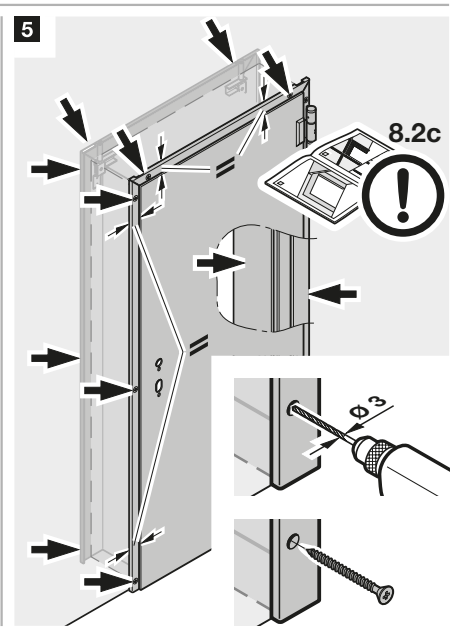


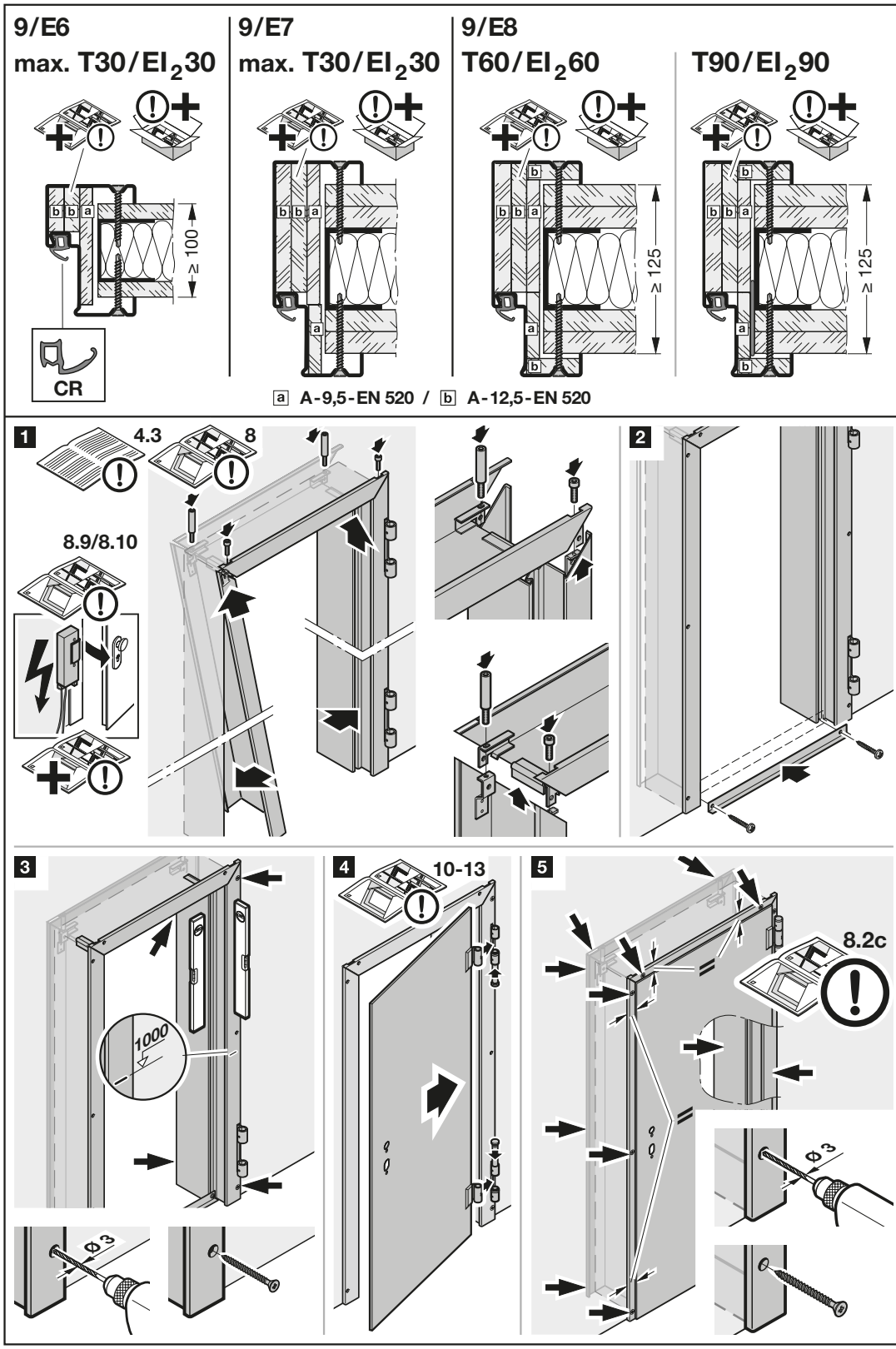


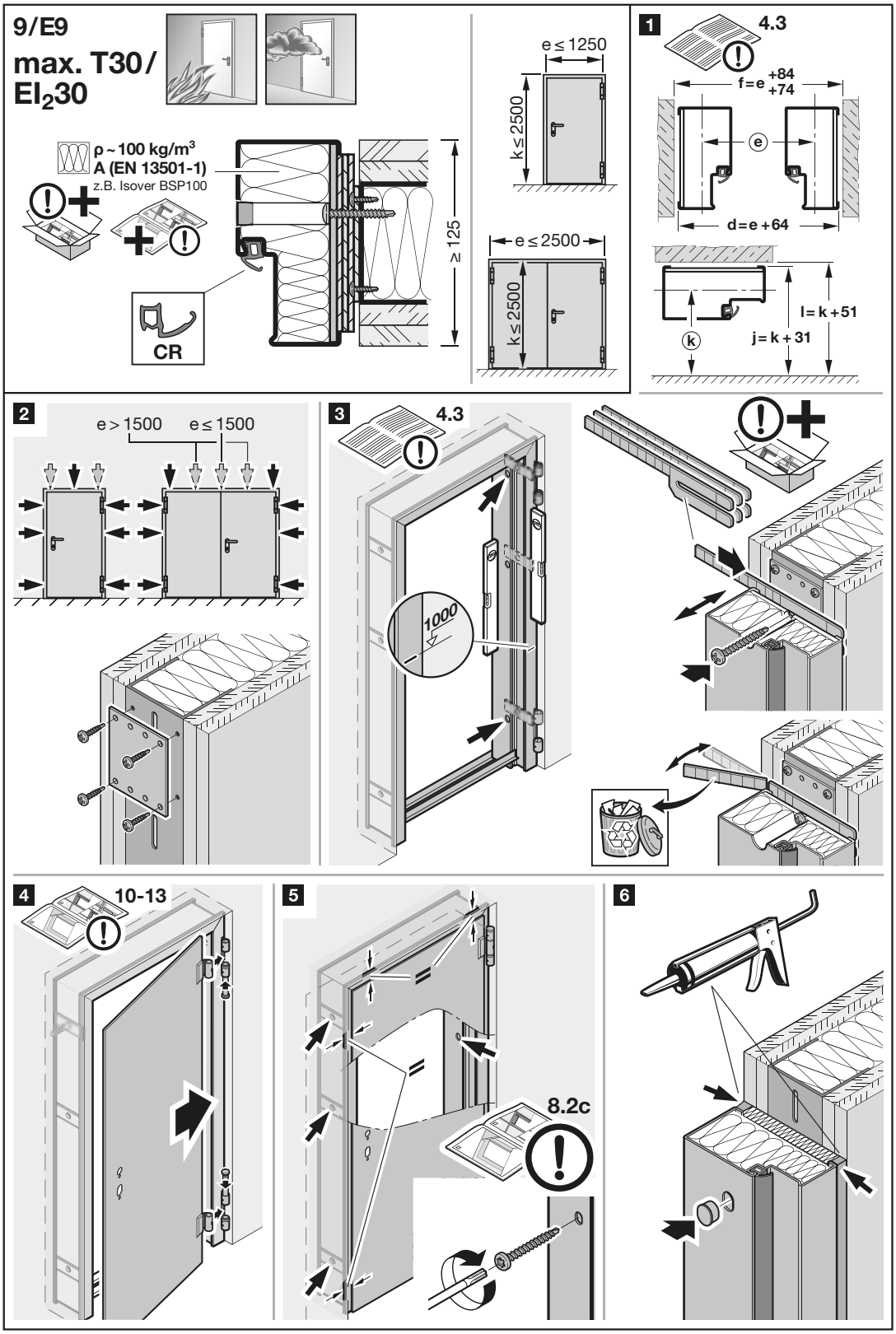






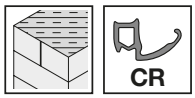


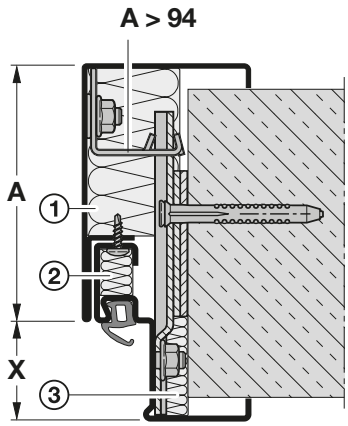

9/E6
max. T30/EI2 30
9/E7
max. T30/EI2 30
9/E8
T60/EI2 60
T90/EI2 90
≥ 100
≥ 125
≥ 125
CR
a A-9,5-EN 520 / b A-12,5-EN 520
1
4.3
8
8.9/8.10
2
3
1000
Ø3
4
10-13
5
8.2c
Ø3


9/E9
max. T30/
EI230
ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100
CR
≥ 125
e ≤ 1250
k ≤ 2500
e ≤ 2500
k ≤ 2500
1
4.3
f = e +84 +74
e
d = e + 64
l = k + 51
k
j = k + 31
2
e > 1500
e ≤ 1500
3
4.3
1000
4
10-13
5
8.2c
6

9/F1

max. T30/ $EI_2$30

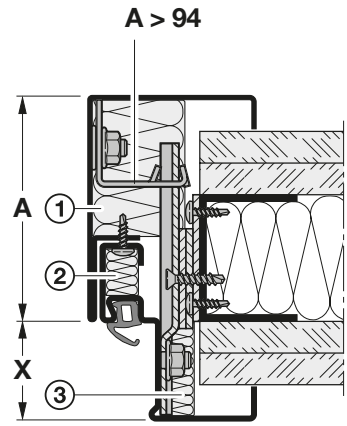




→ 1 2a 2b 3 ...

9/F2

max. T30/ $EI_2$30



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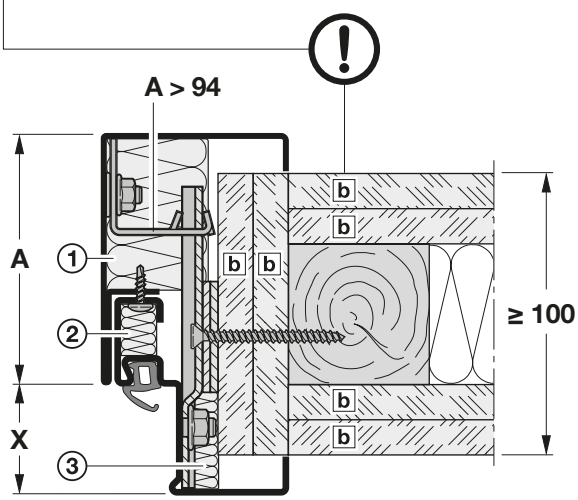
→ 1 2c 3 ...

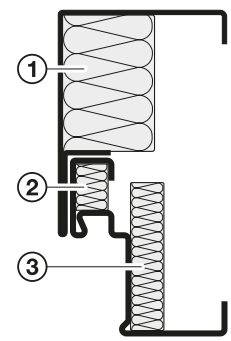
9/F3

max. T30/ $EI_2$30



F90B DIN 4102-4 Tab. 49 b A-12,5-EN 520

→ 1 2d 3 ...

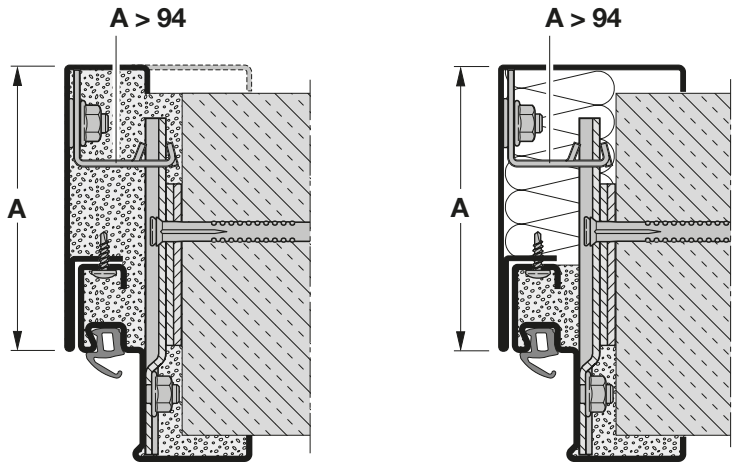


ρ ~ 100 kg/m³
A (EN 13501-1)
z.B. Isover BSP100

① = 40 × (**A** - 42)
② = 15 × 22,5
③ = 15 × (**X** + 24)

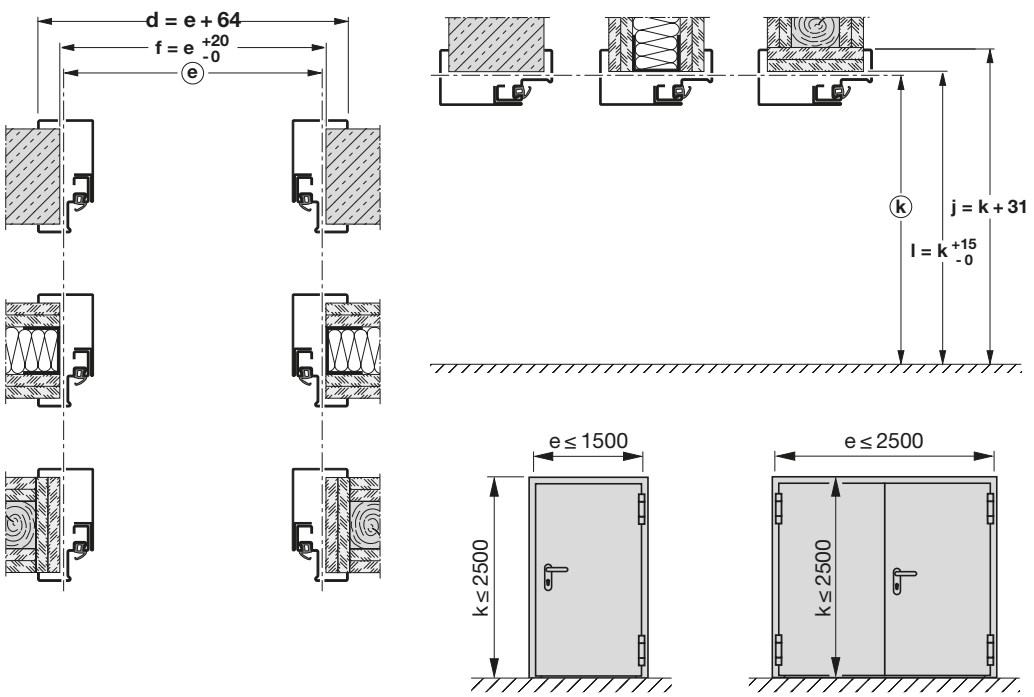
9/F4

max. T90 / $EI_2$90

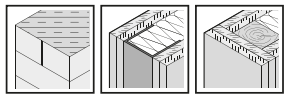


2a 2b 3 ...

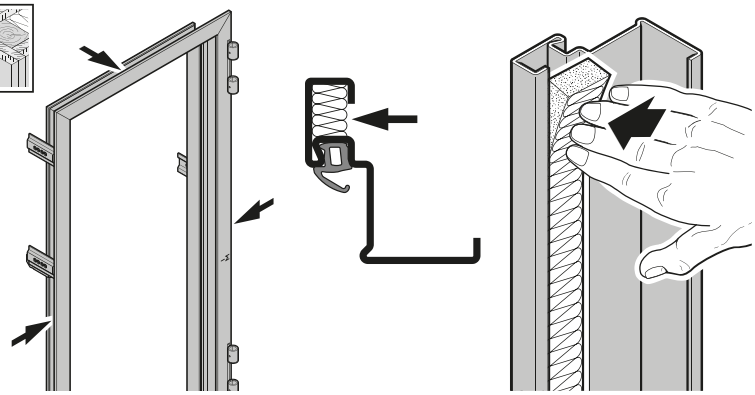
9/F1 - 9/F4



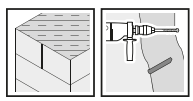
1

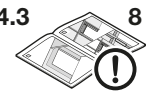


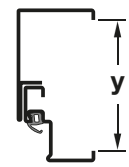
max. T30 / EI$_2$30

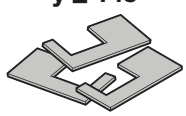


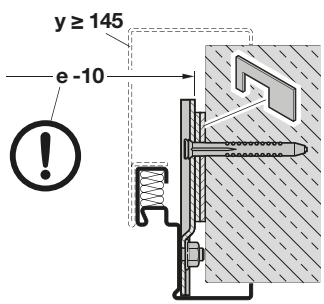
2a



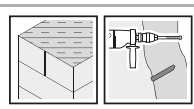


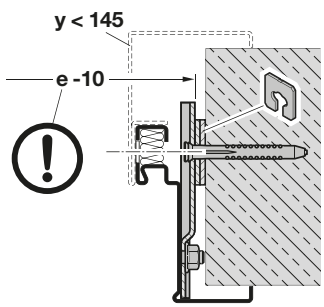


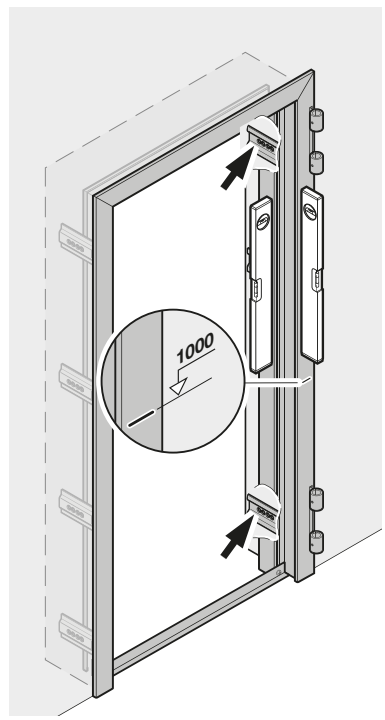


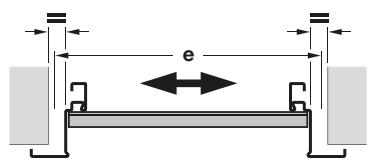


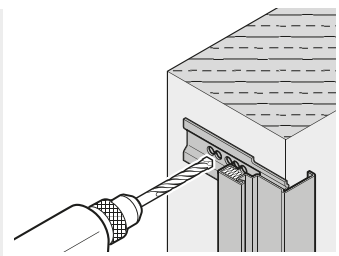
2b

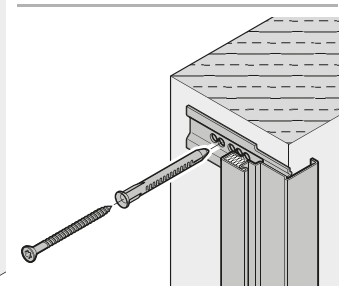


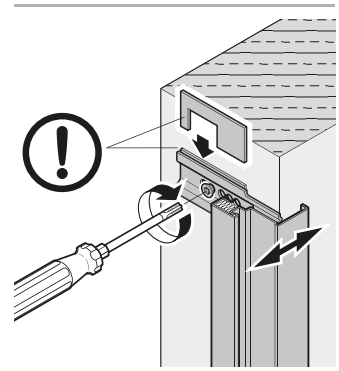






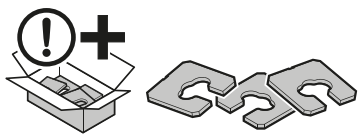


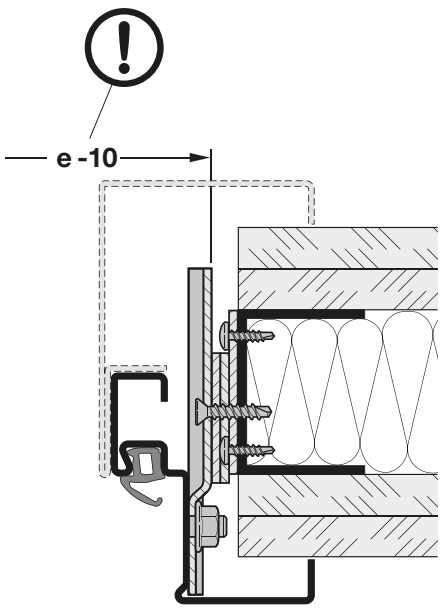


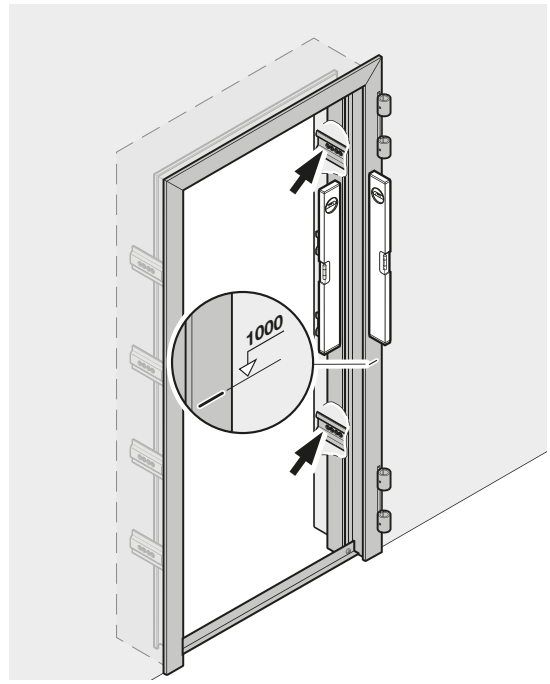


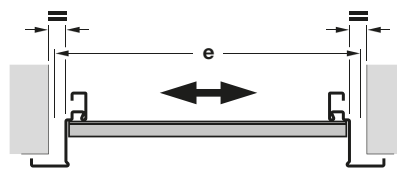
→ 3

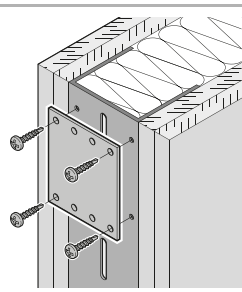
2c



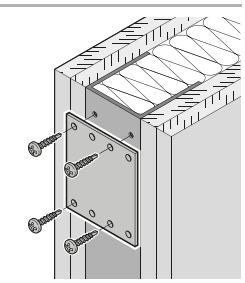




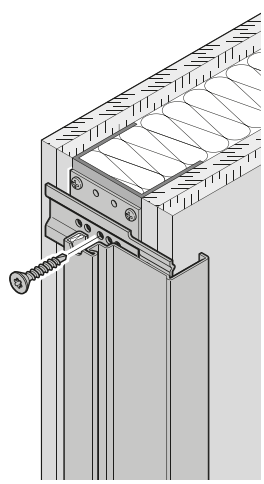


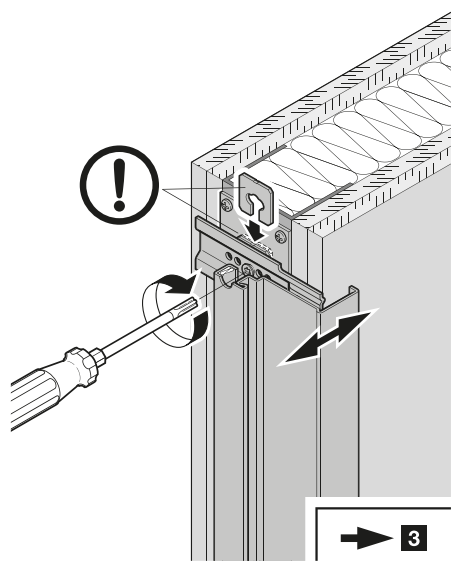


A



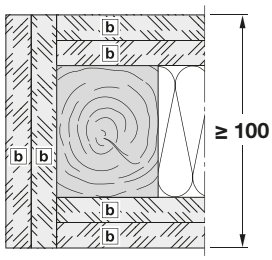
B



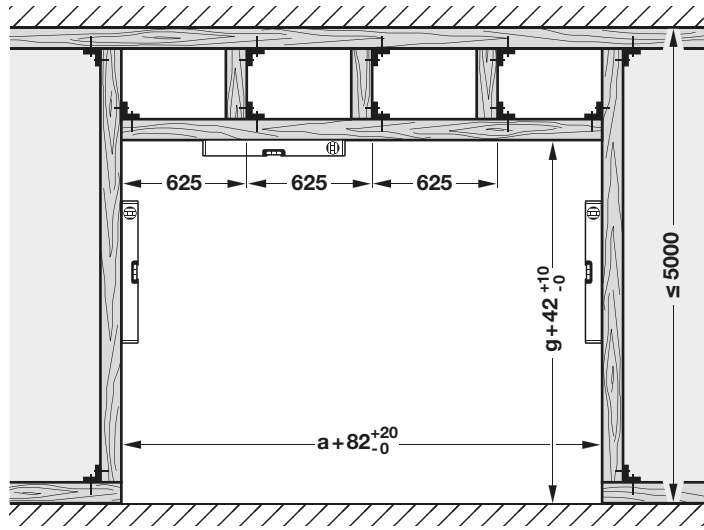


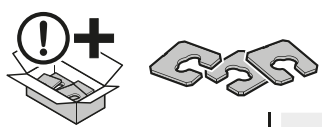
→ 3

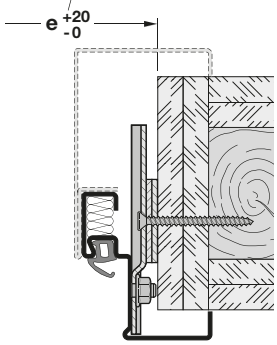
2d

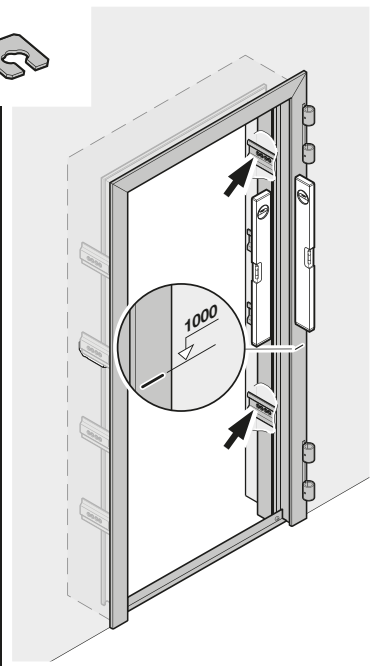


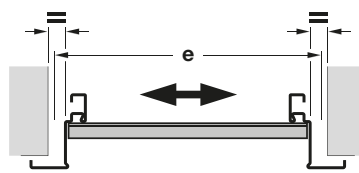
b A-12,5-EN 520

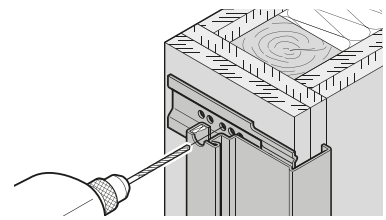


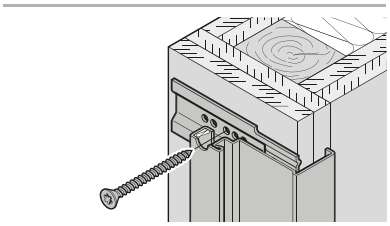


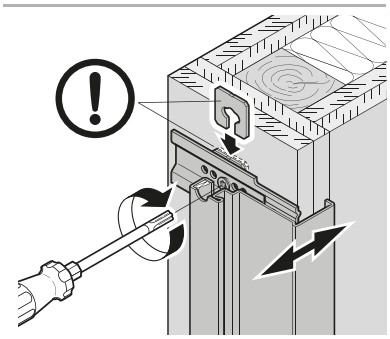




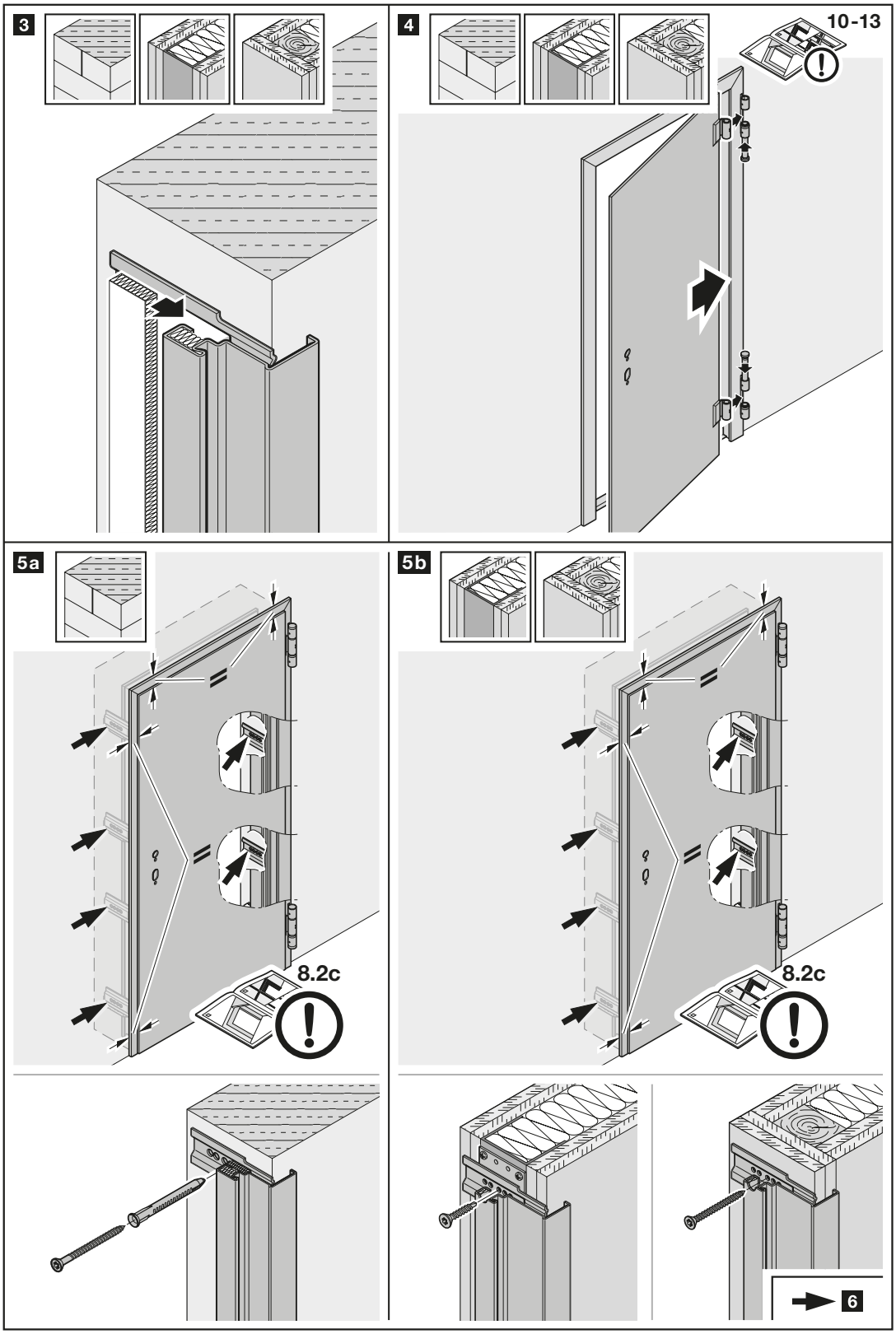


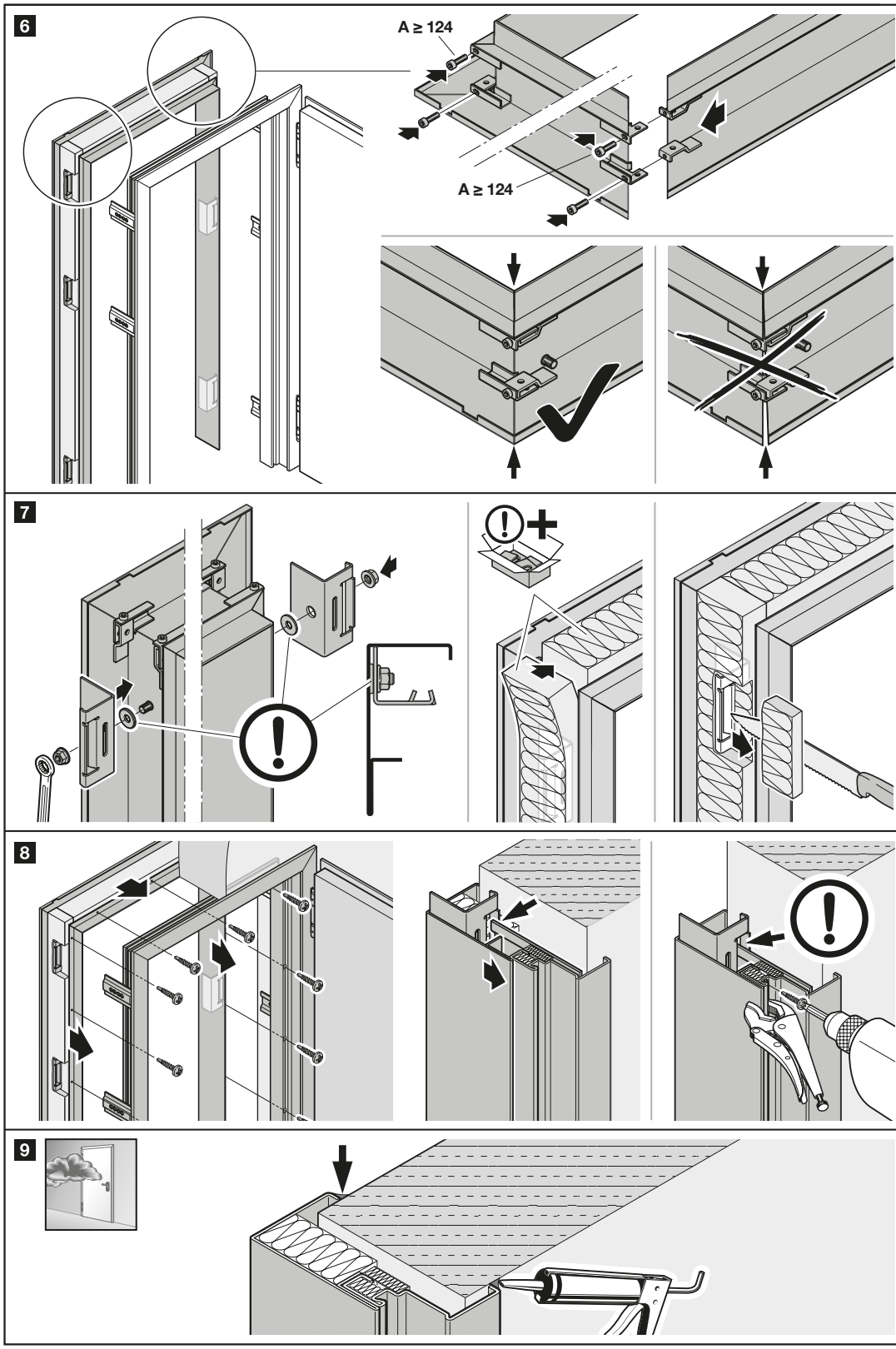


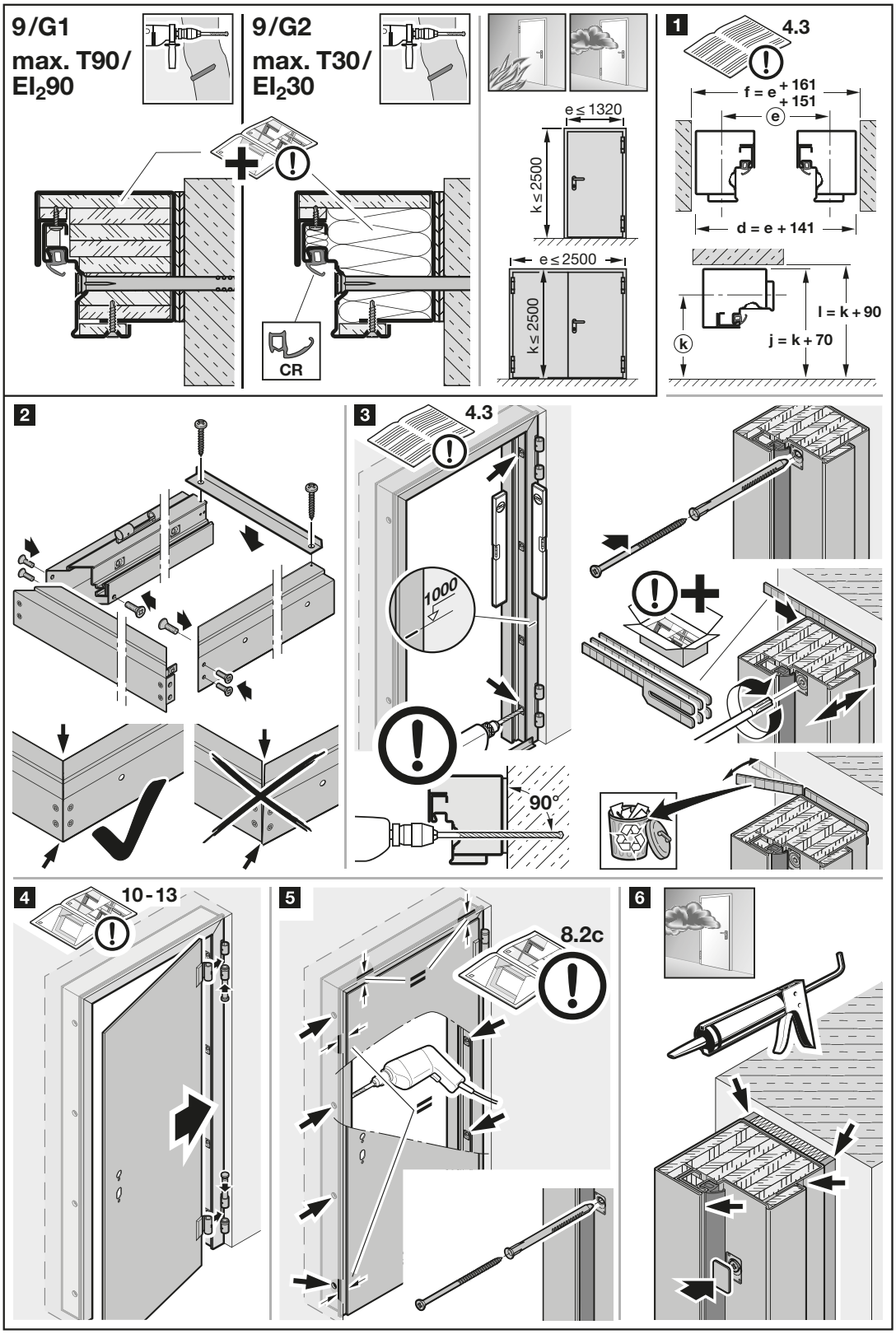




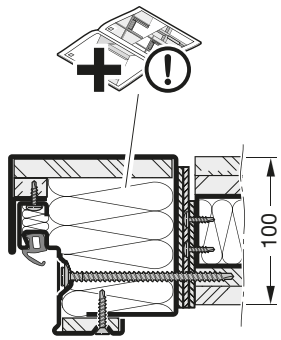
→ 3


3
4
10-13
5a
8.2c
5b
8.2c
6

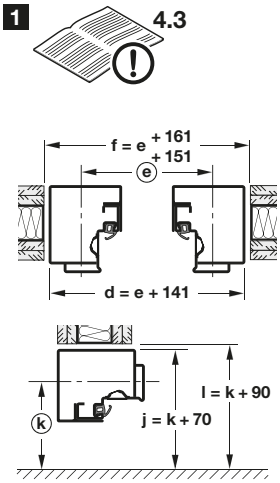

6
A ≥ 124
A ≥ 124
7
8
9


9/G1
max. T90/
EI2 90
9/G2
max. T30/
EI2 30
CR
e ≤ 1320
k ≤ 2500
e ≤ 2500
k ≤ 2500
1
4.3
f = e + 161
+ 151
e
d = e + 141
l = k + 90
k
j = k + 70
2
3
4.3
1000
90°
4
10 - 13
5
8.2c
6

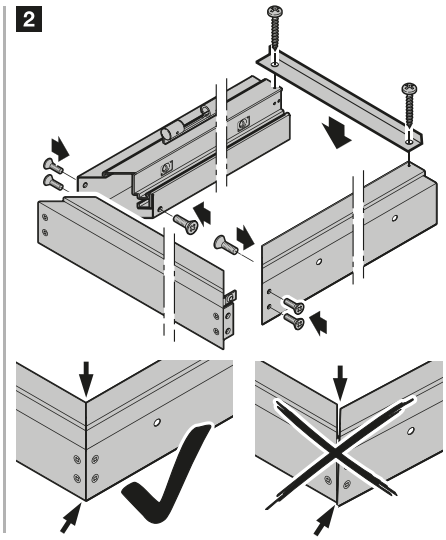
9/G3
max. T30/EI$_2$30



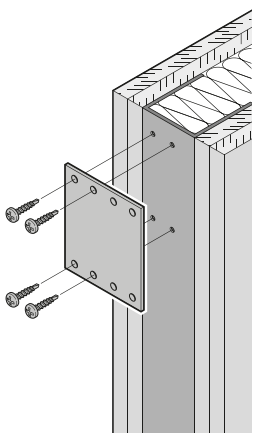
1



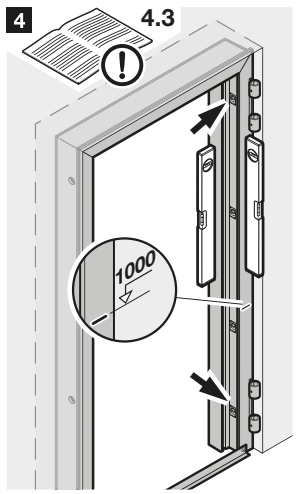
2

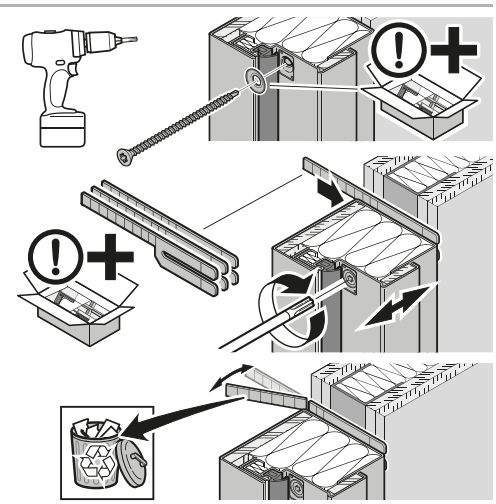


3

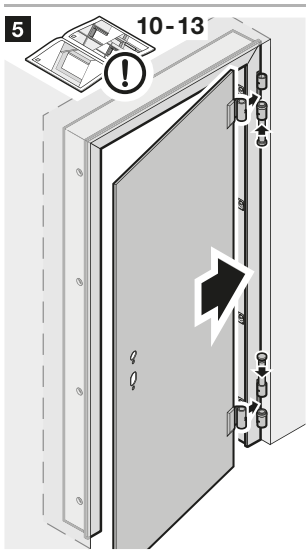


4

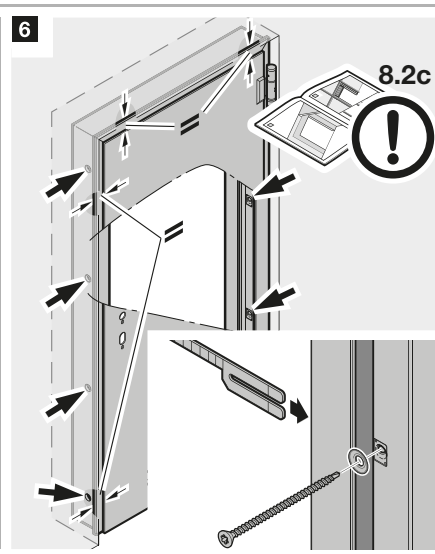




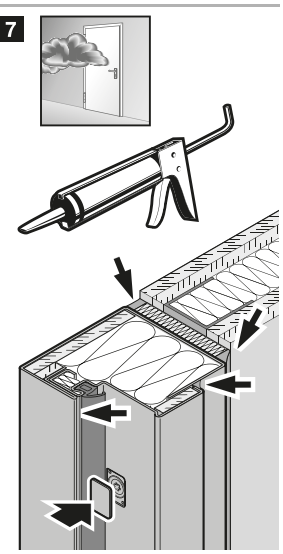
5



6

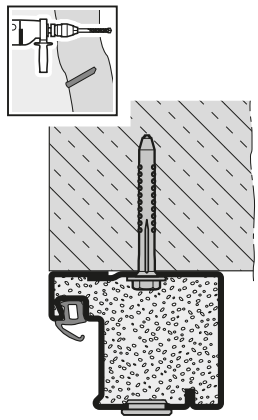


7

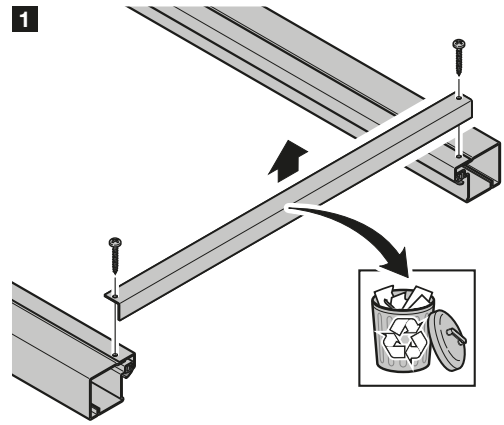


9/H1

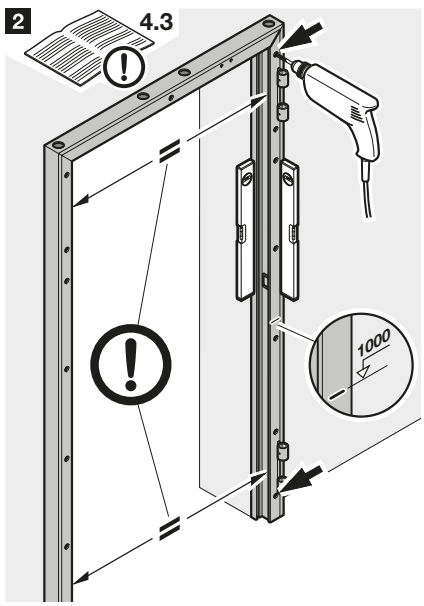
max. T30/ $EI_2$30

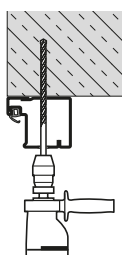


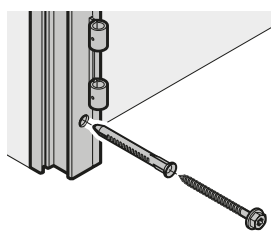
1



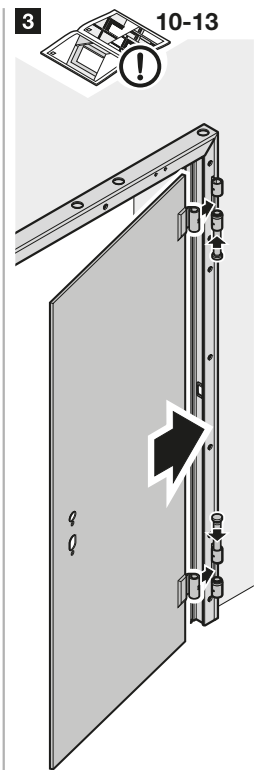
2 4.3



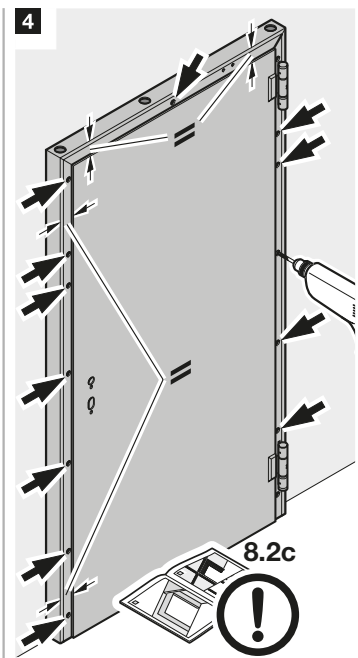


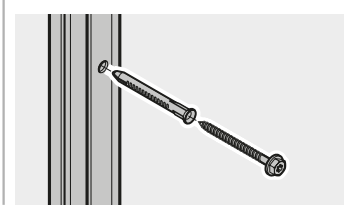


3 10-13



4





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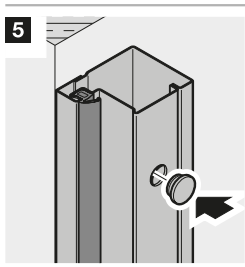
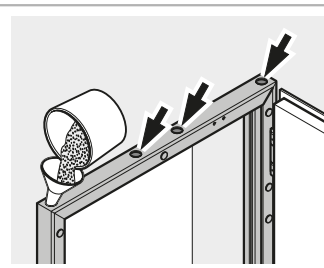
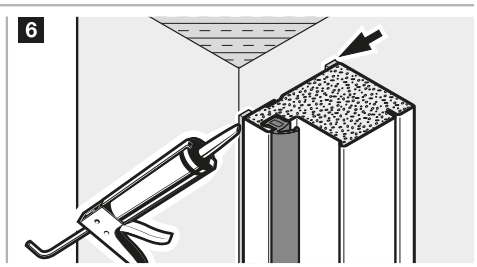
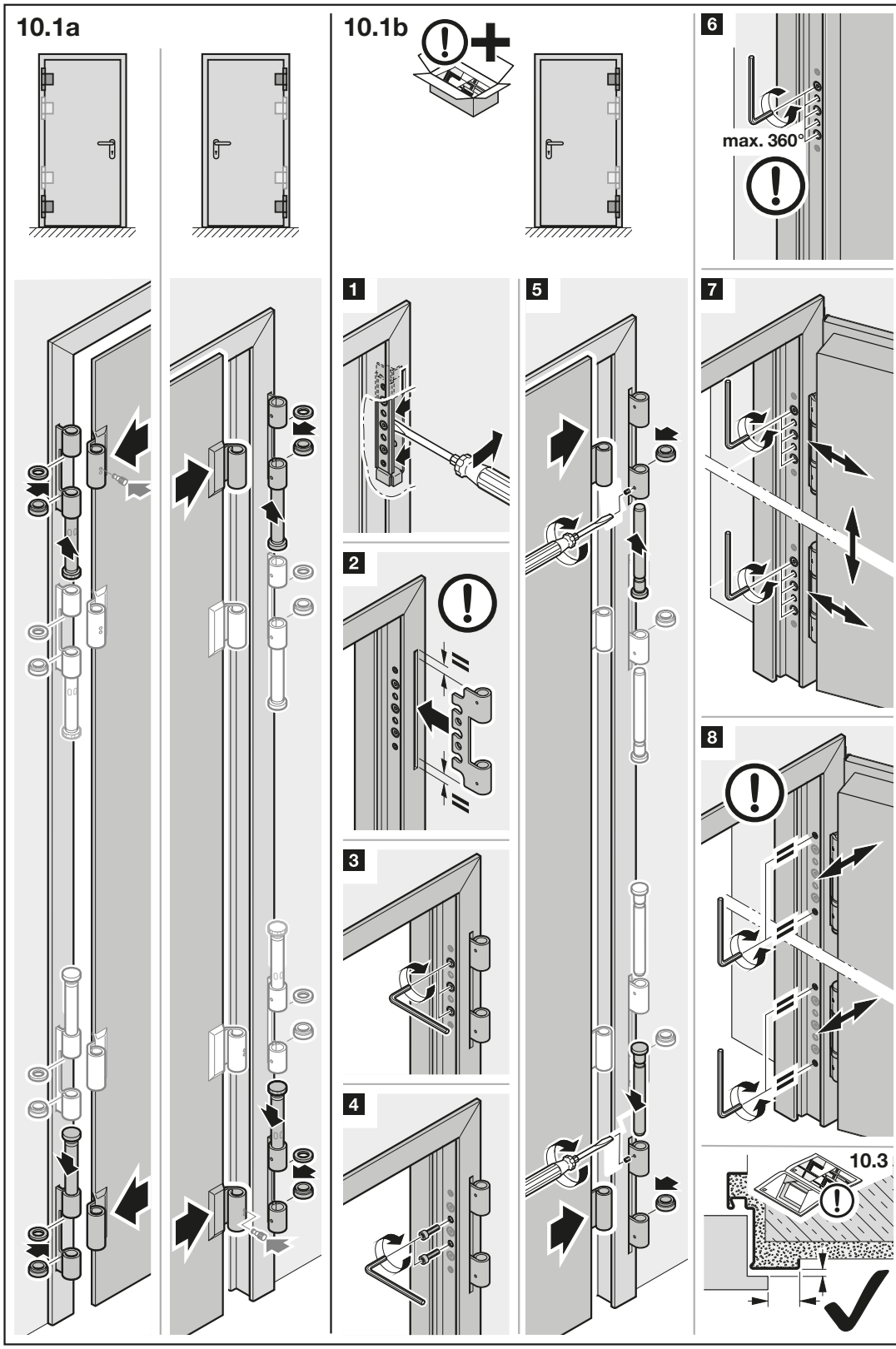


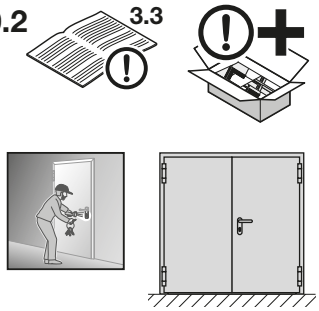


6

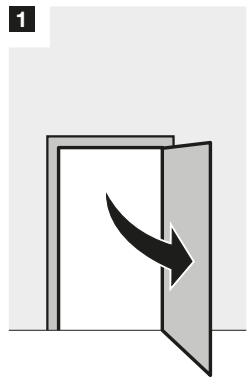



10.1a
10.1b
1
2
3
4
5
6
max. 360°
7
8
10.3

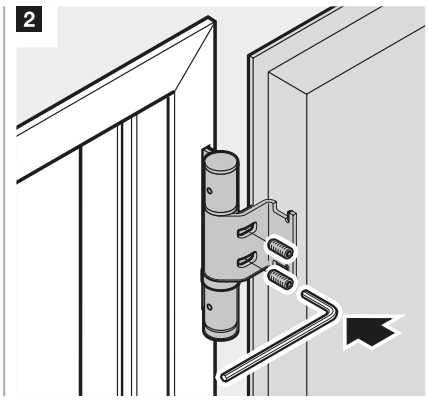
10.2 3.3



1



2

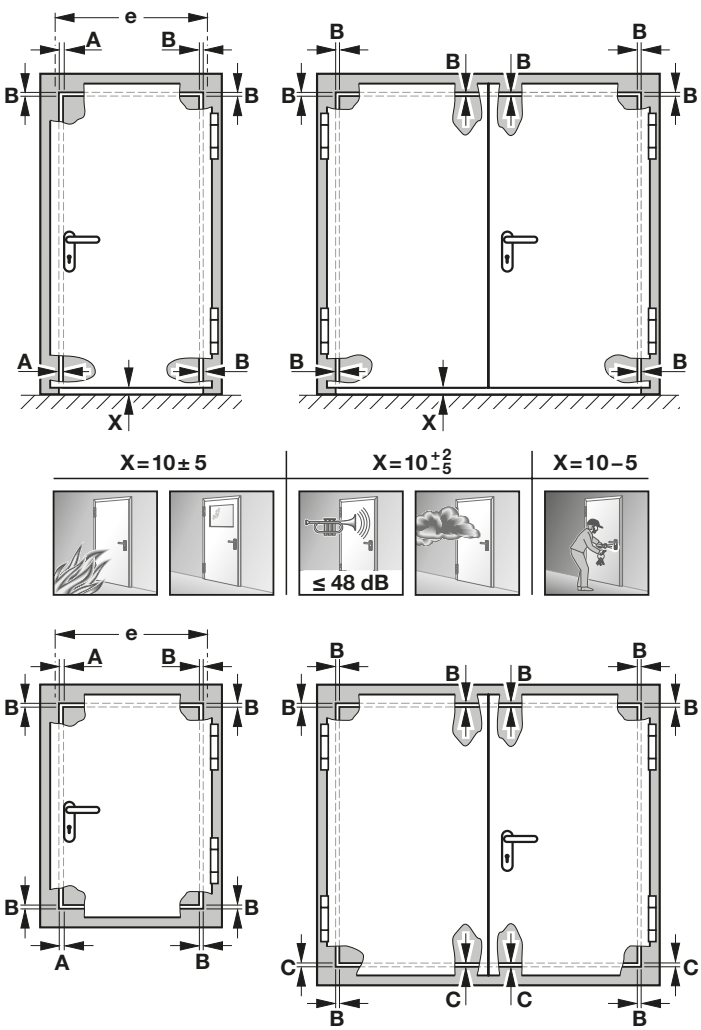


10.3 4.2

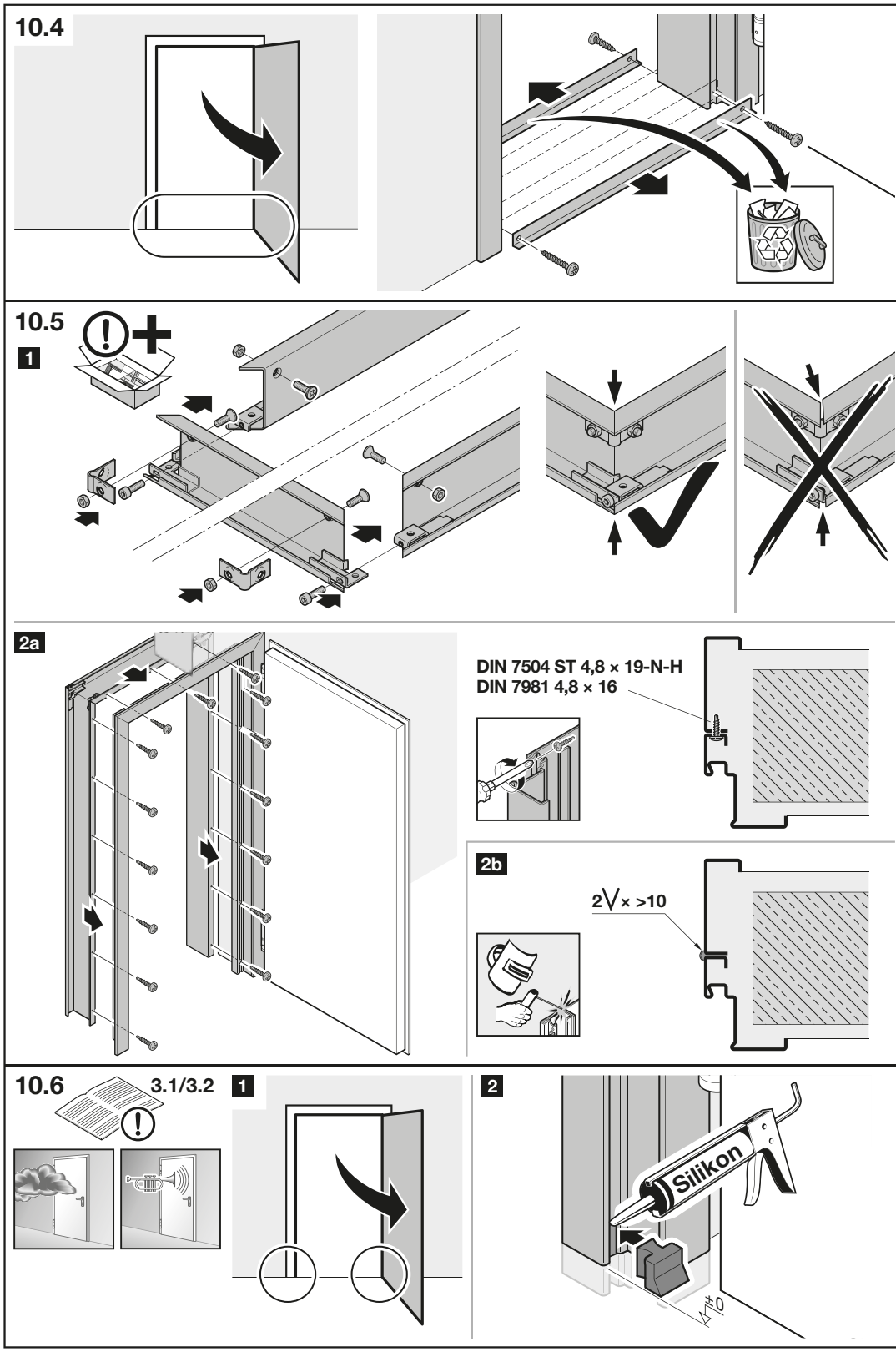
1

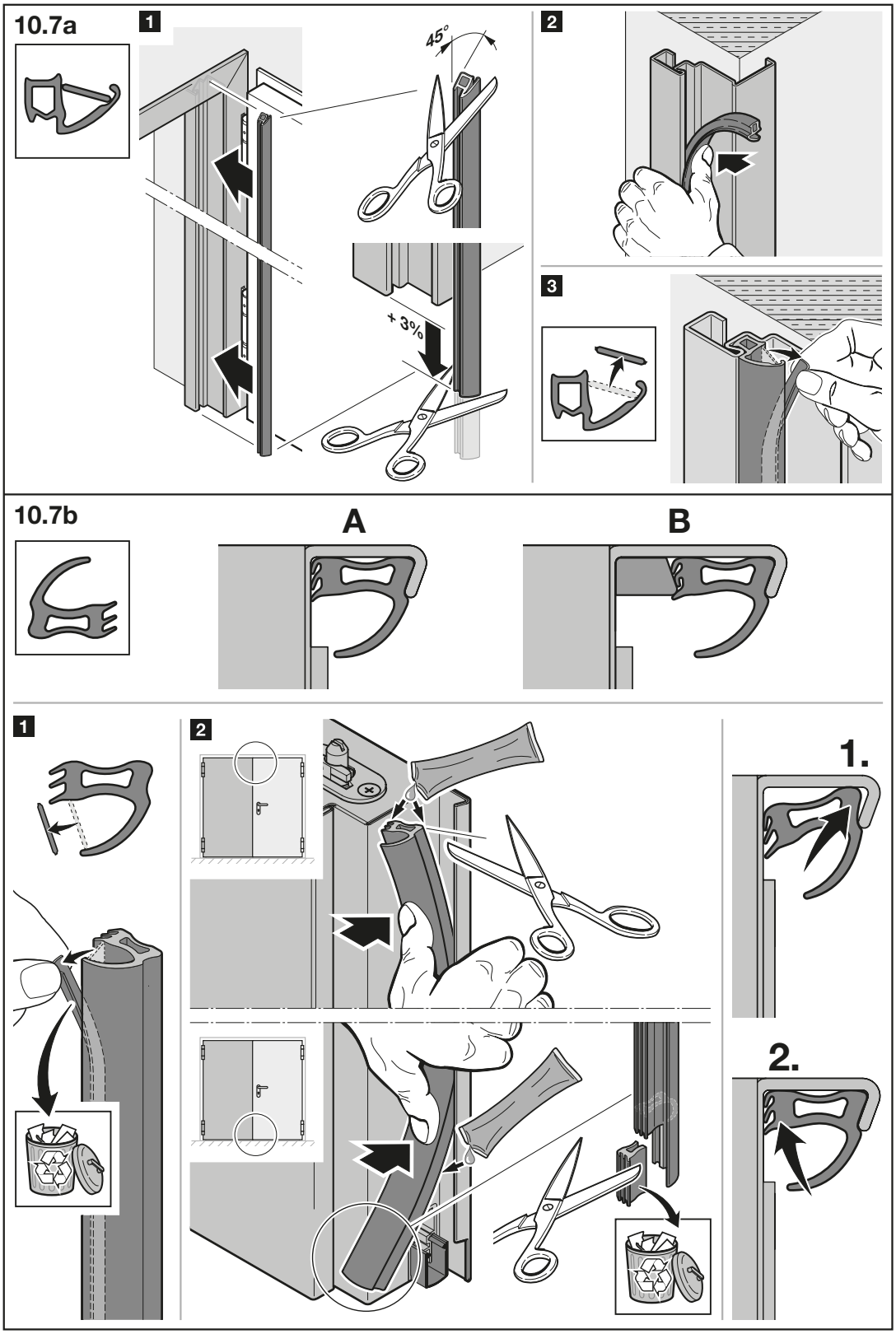
e	A
≤ 749	6^{+1}_{-2}
750 - 874	6^{+1}_{-2}
≥ 875	5^{+1}_{-2}

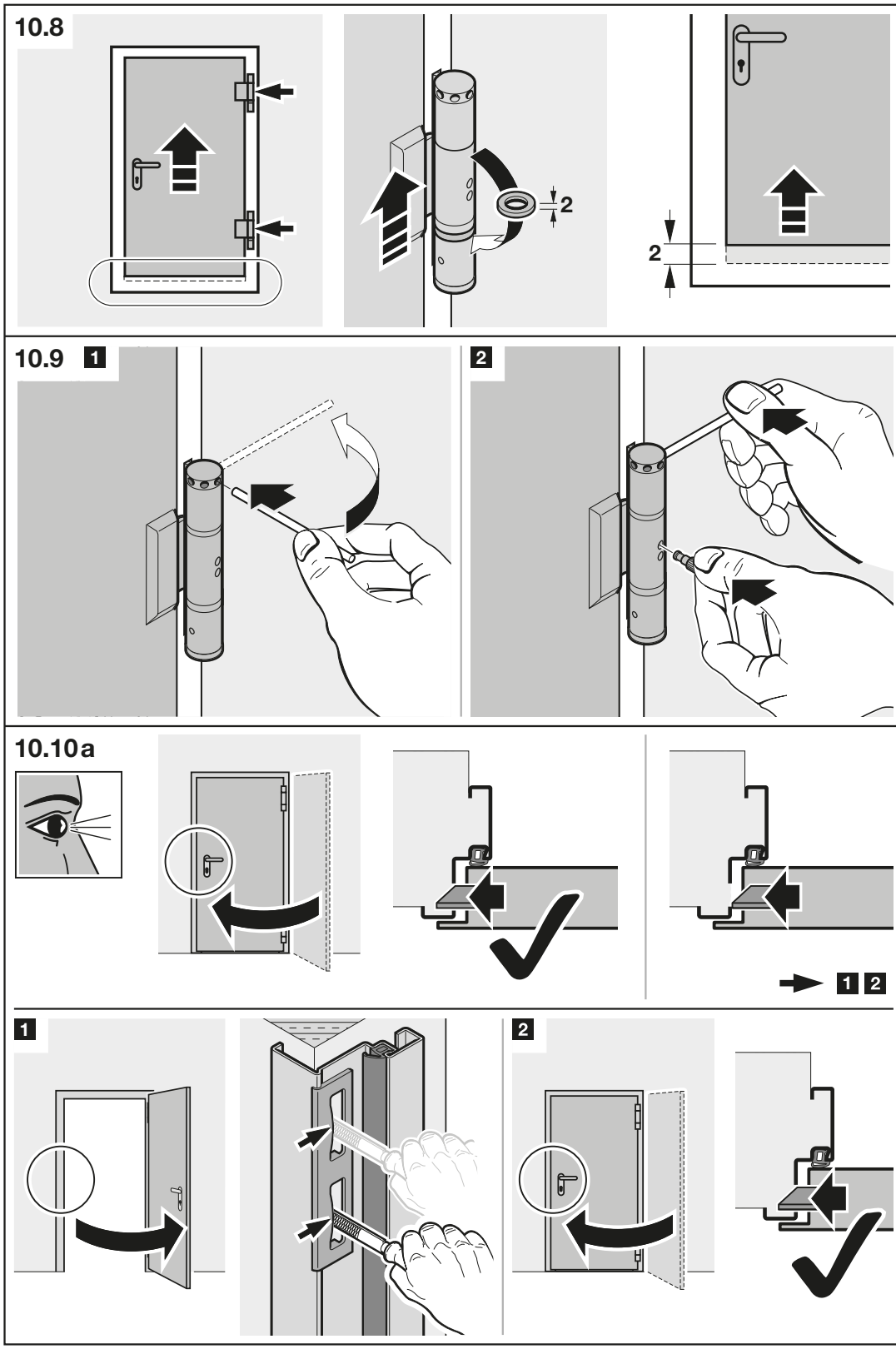
B	C max. T30	C T60, T90, T120
4±2	4±2	10±2



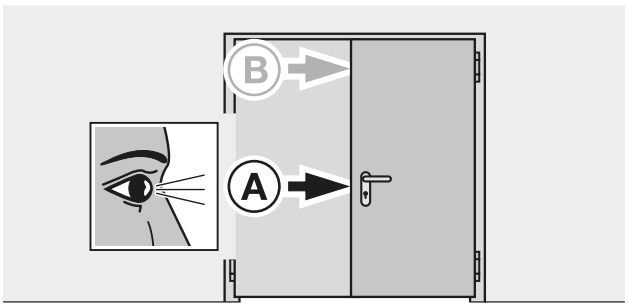
2

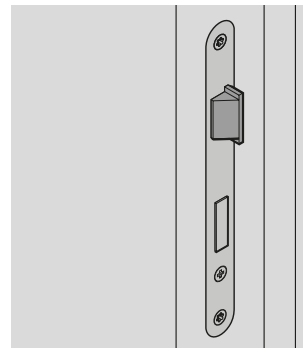

10.4
10.5
1
2a
DIN 7504 ST 4,8 × 19-N-H
DIN 7981 4,8 × 16
2b
2√× >10
10.6
3.1/3.2
1
2
Silikon

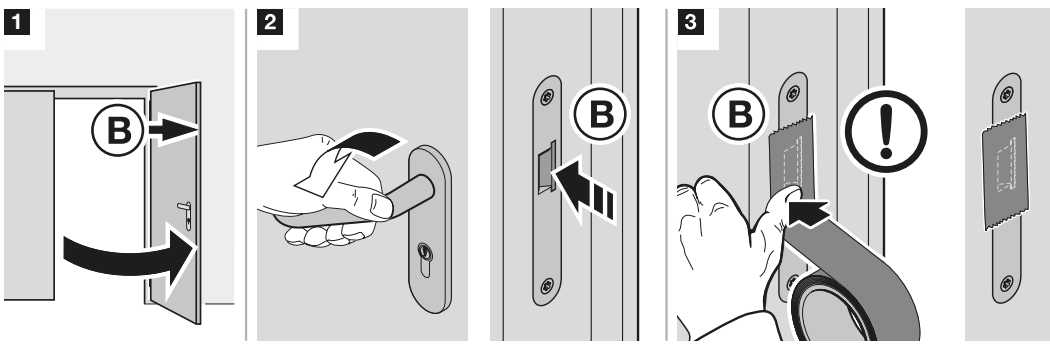

10.7a
1
45°
+ 3%
2
3
10.7b
A
B
1
2
1.
2.

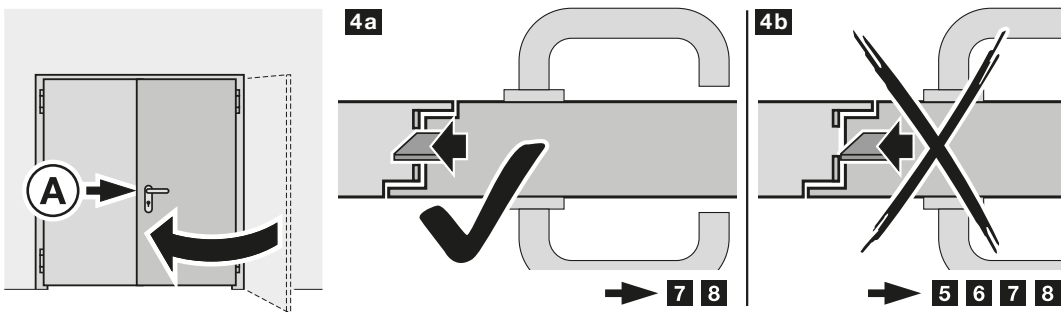

10.8
2
2
10.9
1
2
10.10a
1 2
1
2

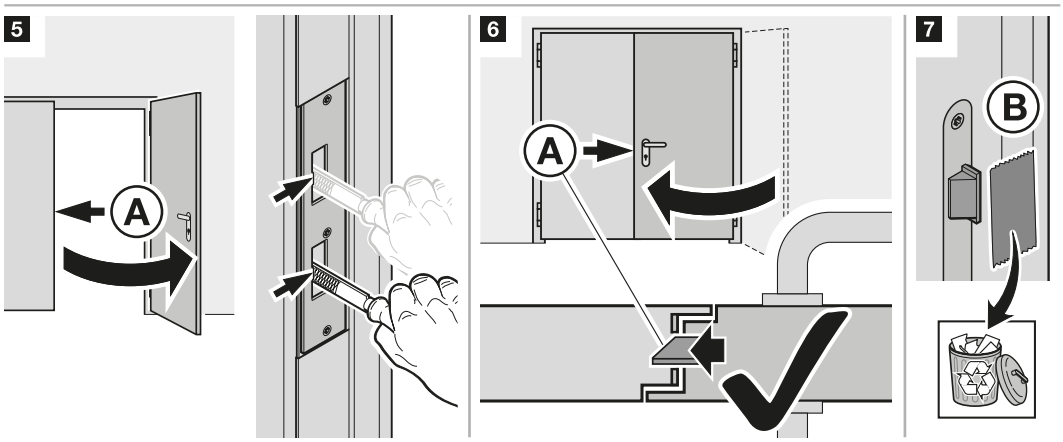
10.10b H16-2 G / H_90 F-2







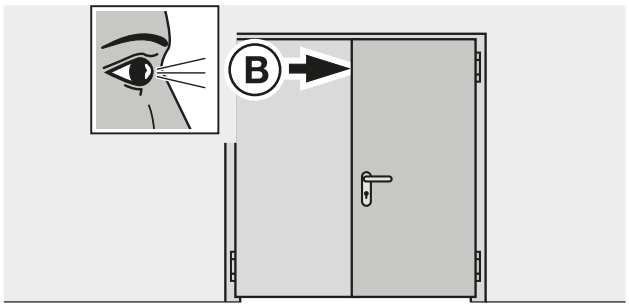


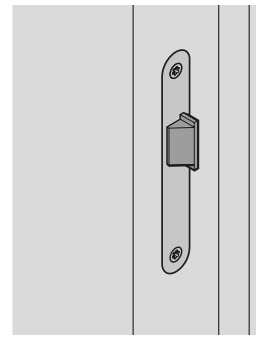


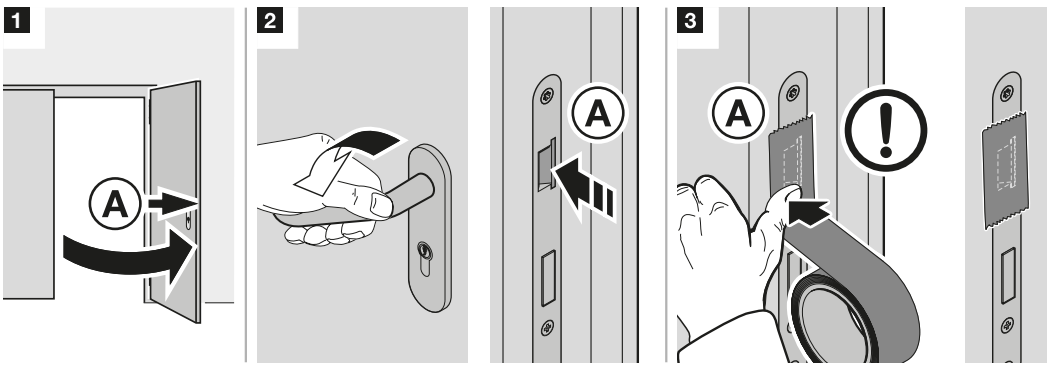
8

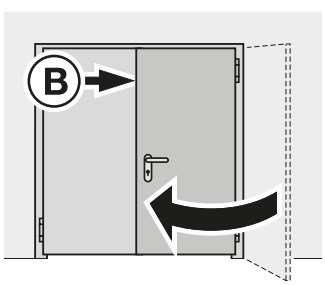
→ 10.10c

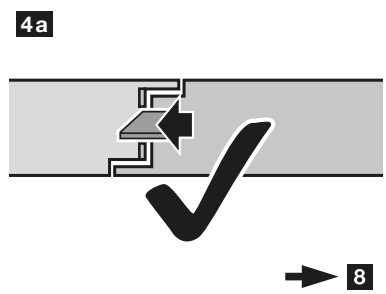
10.10c H16-2 G / H_90 F-2

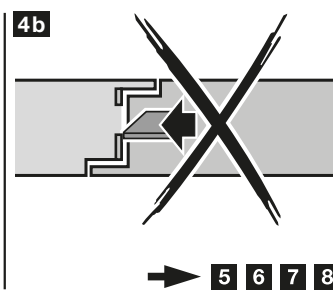


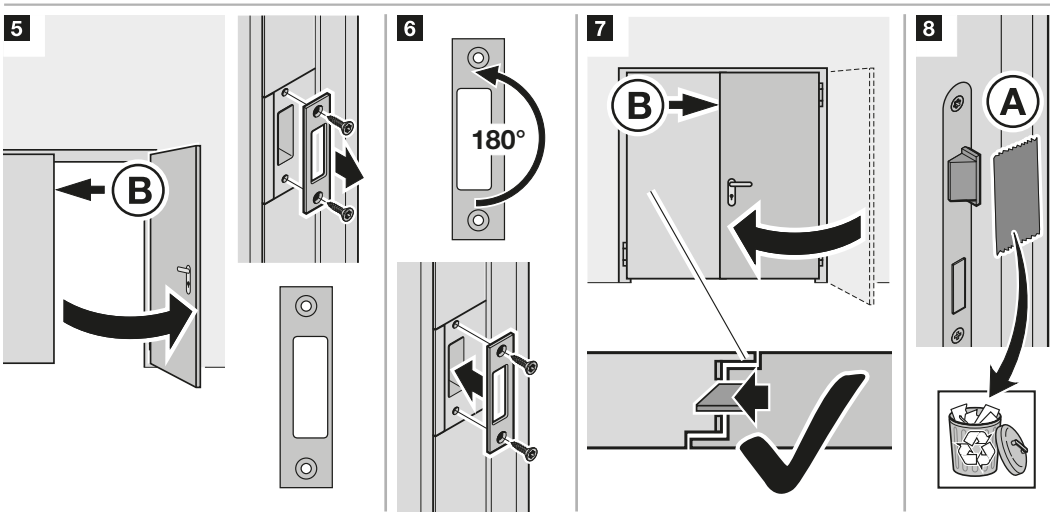




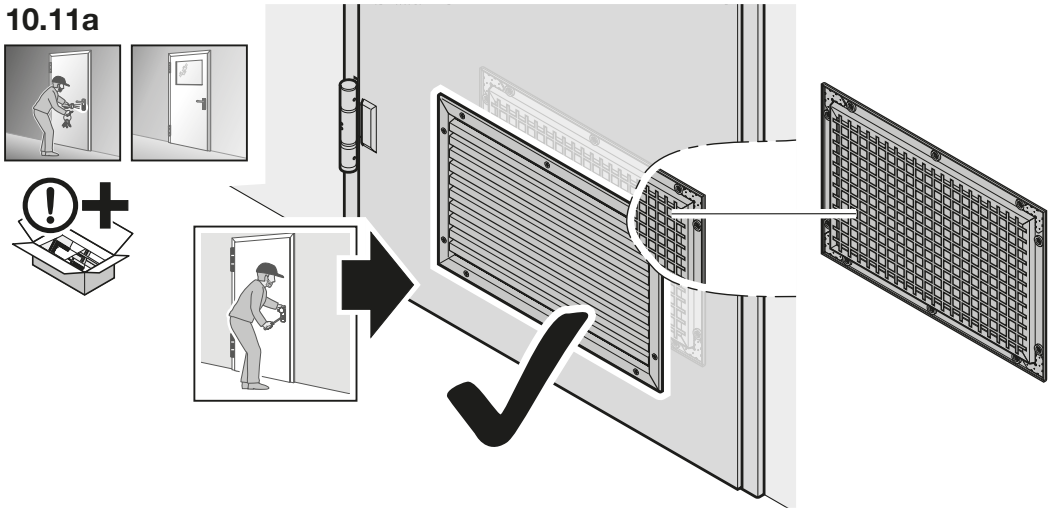




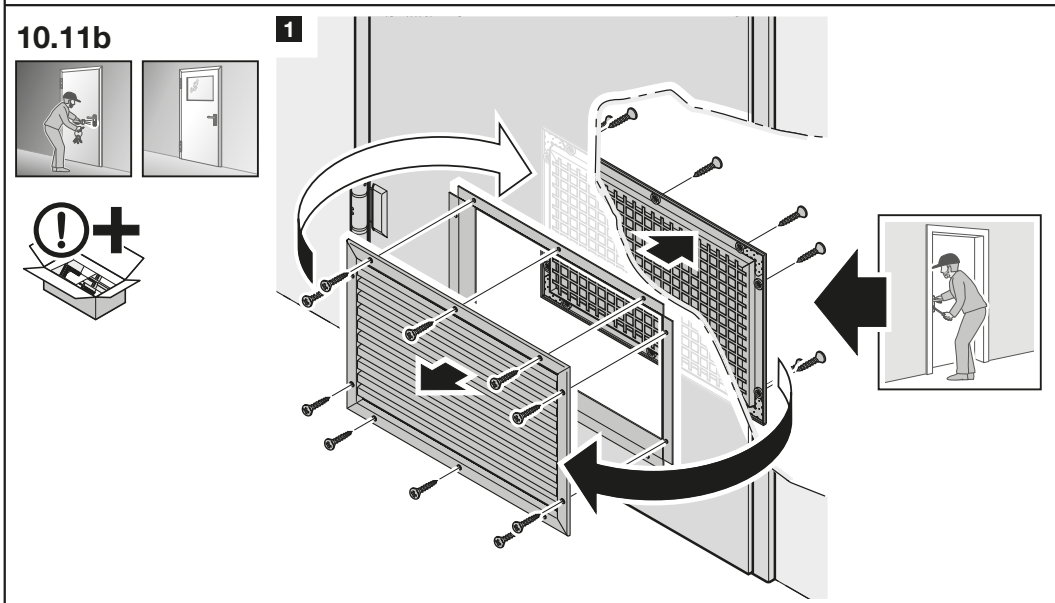


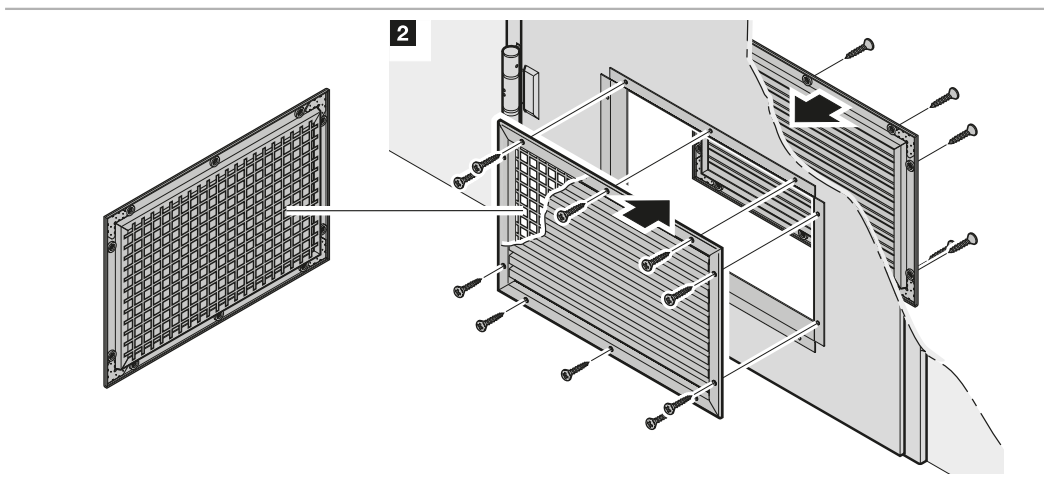


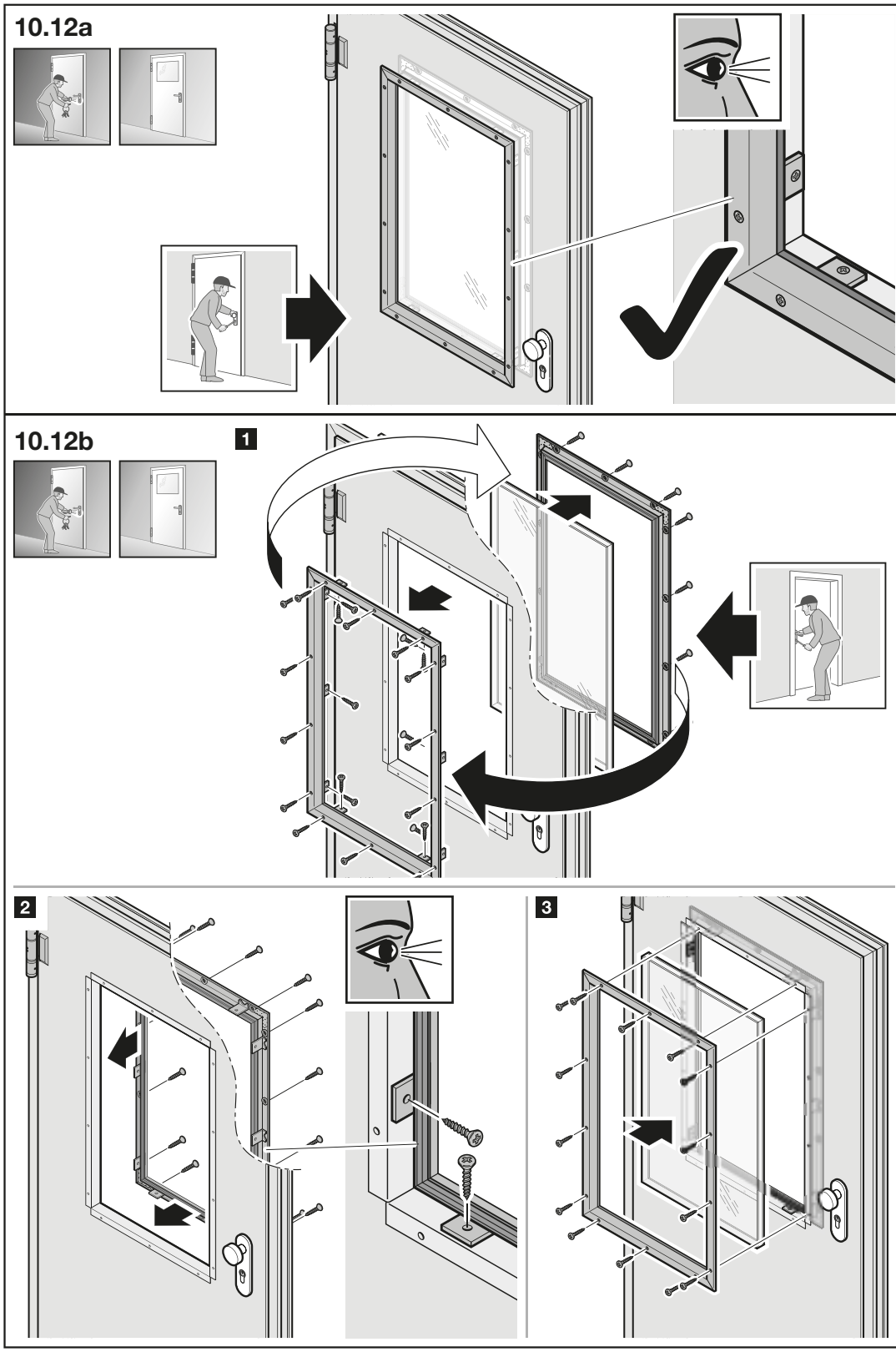
10.11a

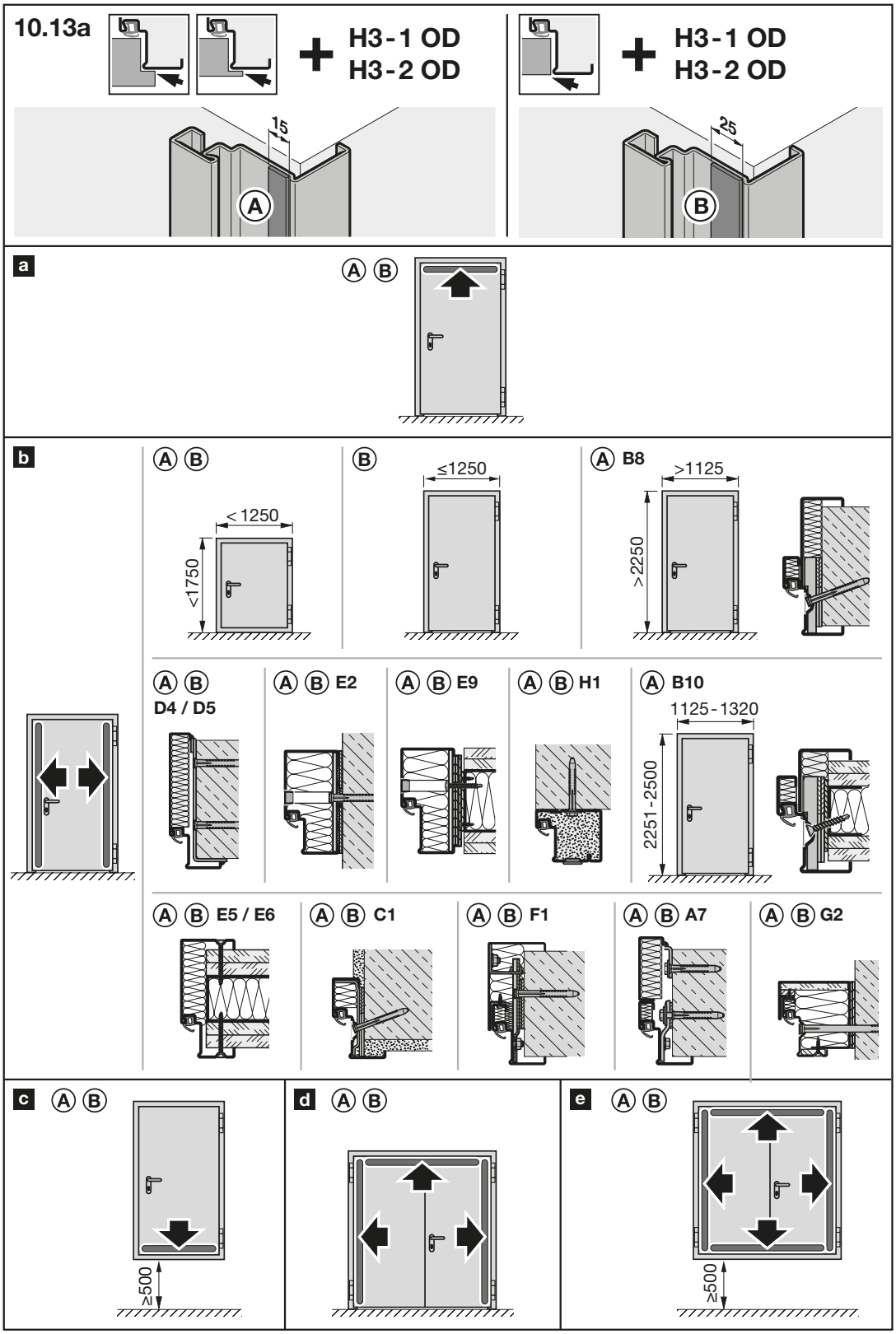


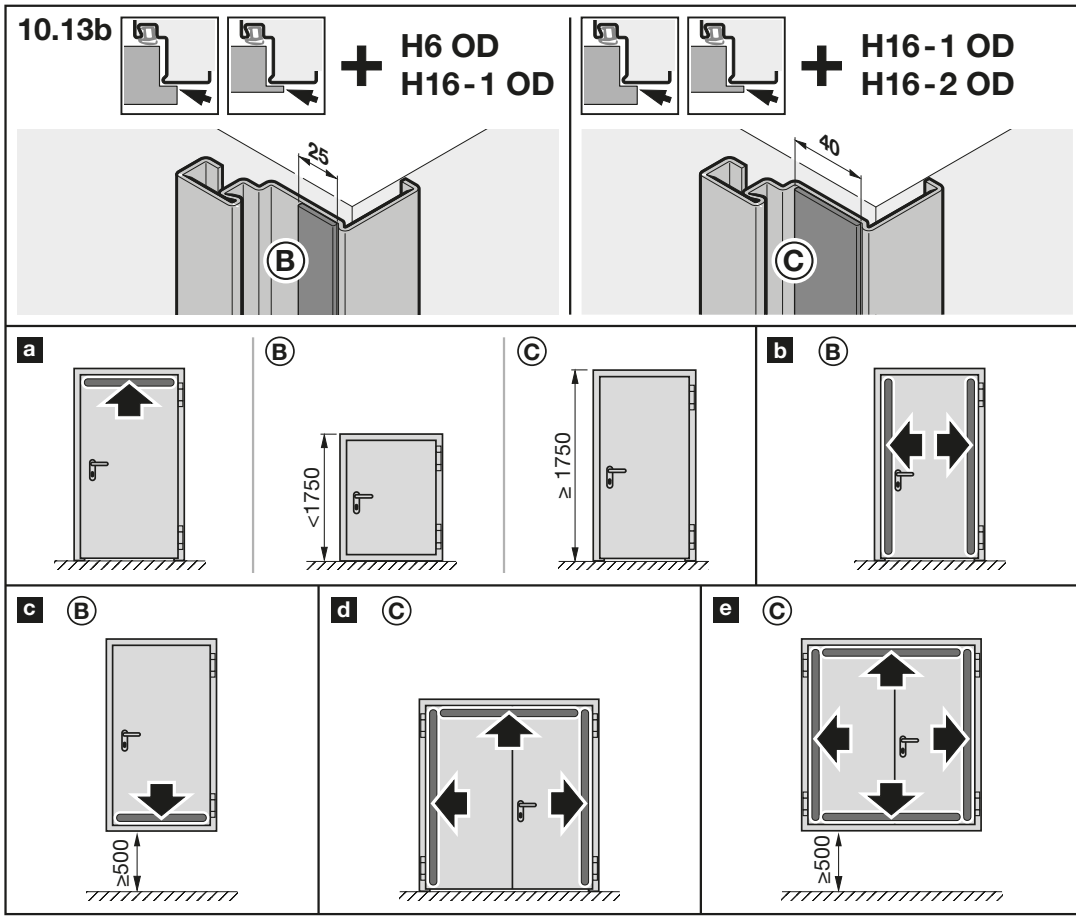
10.11b

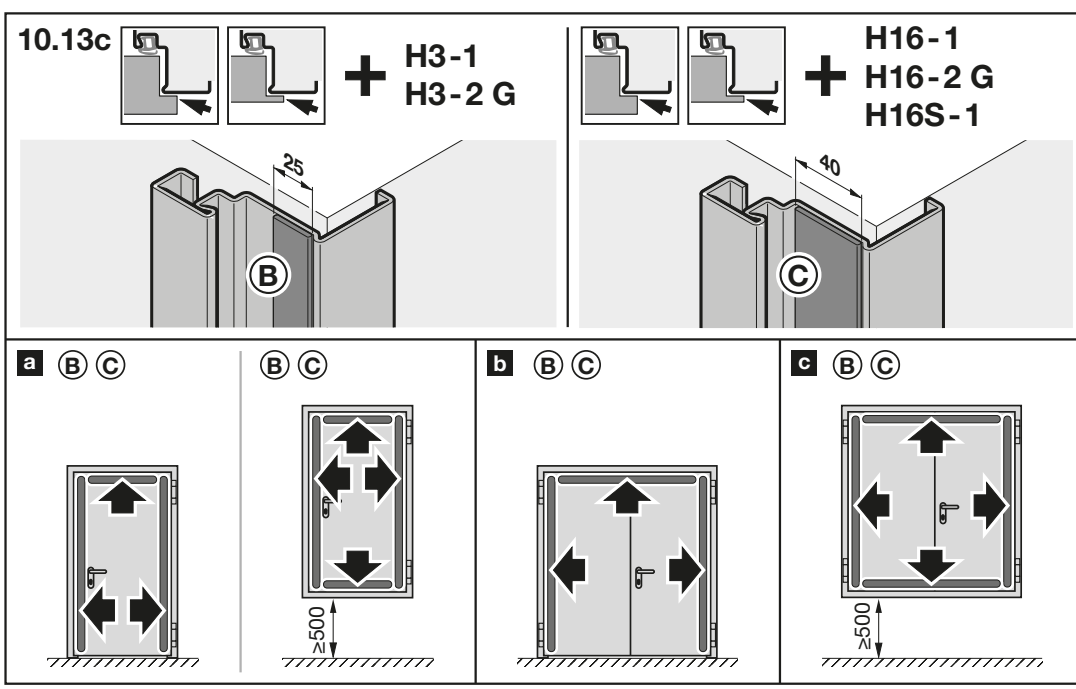




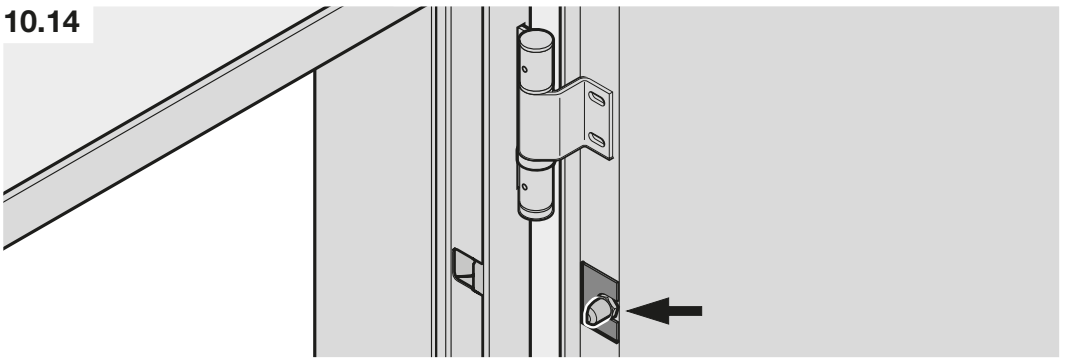

10.12a
10.12b
1
2
3


10.13a
H3-1 OD
H3-2 OD
H3-1 OD
H3-2 OD
15
A
25
B
a
A B
b
A B
< 1250
<1750
B
≤1250
A B8
>1125
>2250
A B
D4 / D5
A B E2
A B E9
A B H1
A B10
1125-1320
2251-2500
A B E5 / E6
A B C1
A B F1
A B A7
A B G2
c
A B
≥500
d
A B
e
A B
≥500

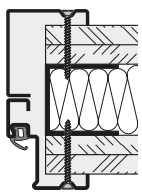

10.13b
+ H6 OD
H16-1 OD
+ H16-1 OD
H16-2 OD
25
40
B
C
a
B
C
b B
<1750
≥1750
c B
d C
e C
≥500


10.13c
+ H3-1
H3-2 G
+ H16-1
H16-2 G
H16S-1
25
40
B
C
a B C
B C
b B C
c B C
≥500

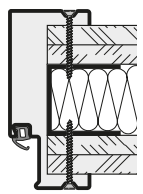
10.14



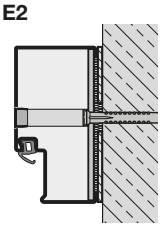
A10-A13



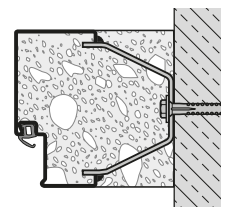
E5-E8



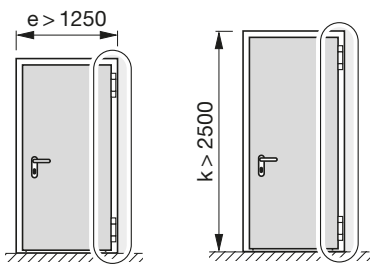
E1, E2



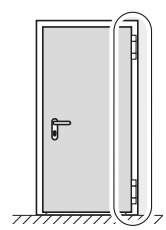
E3



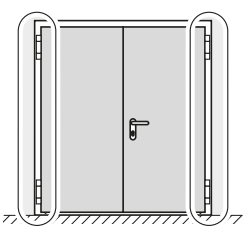
T30-1 / H_30-1



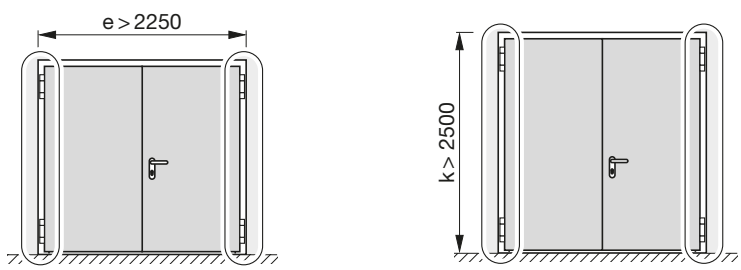
T90-1 / H_90-1



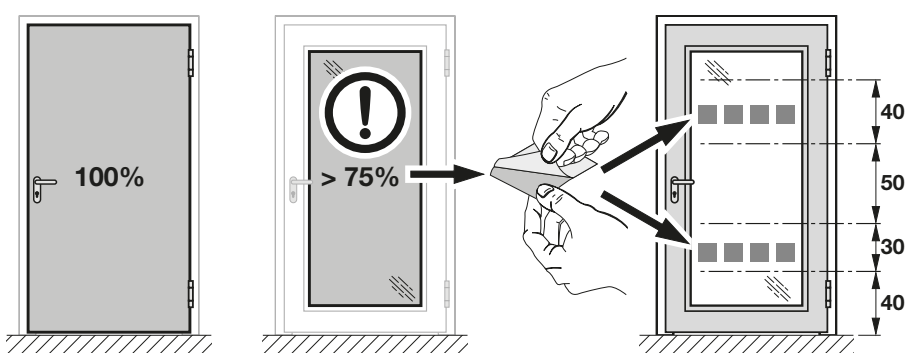
T30-2 RC3 / H_30-2 RC3



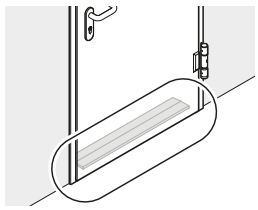
T90-2 / H_90-2

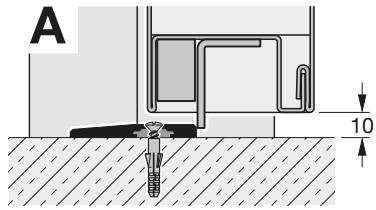


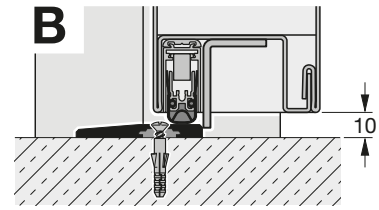
10.15



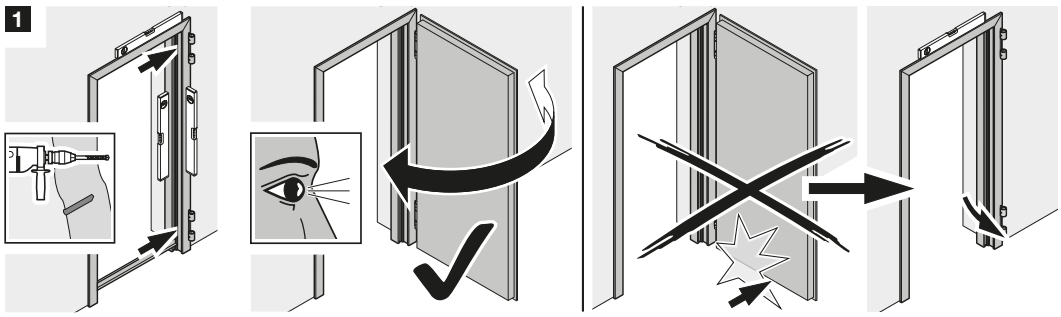
10.16a



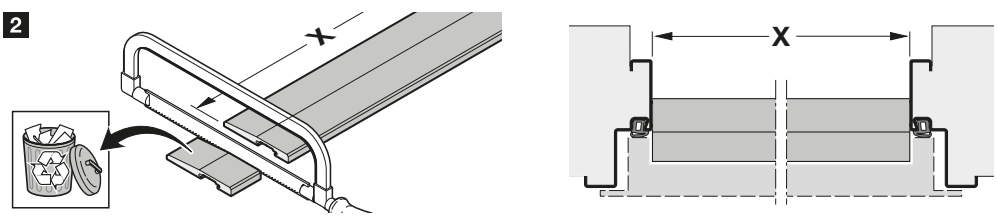




1



2



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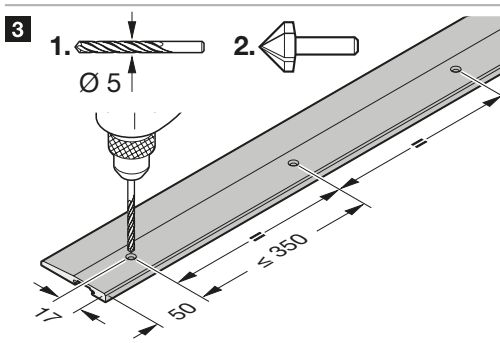

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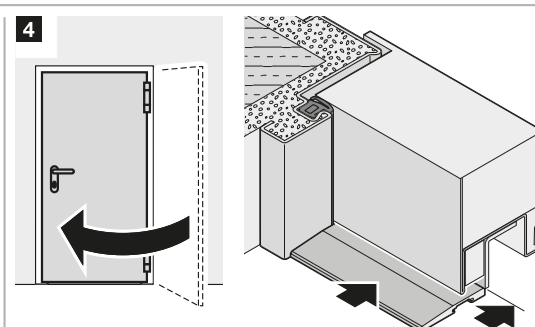

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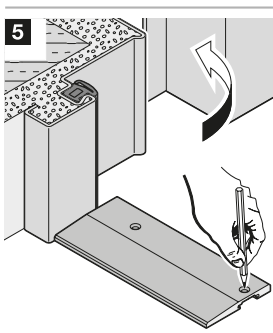
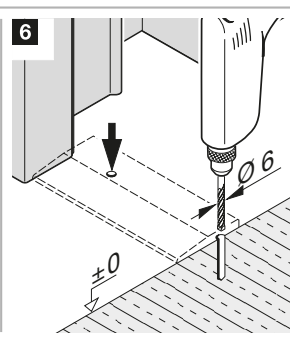


6



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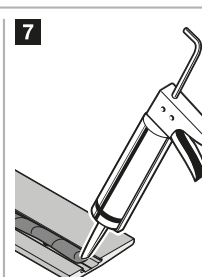

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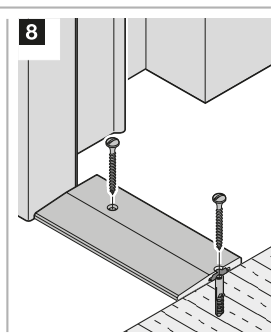
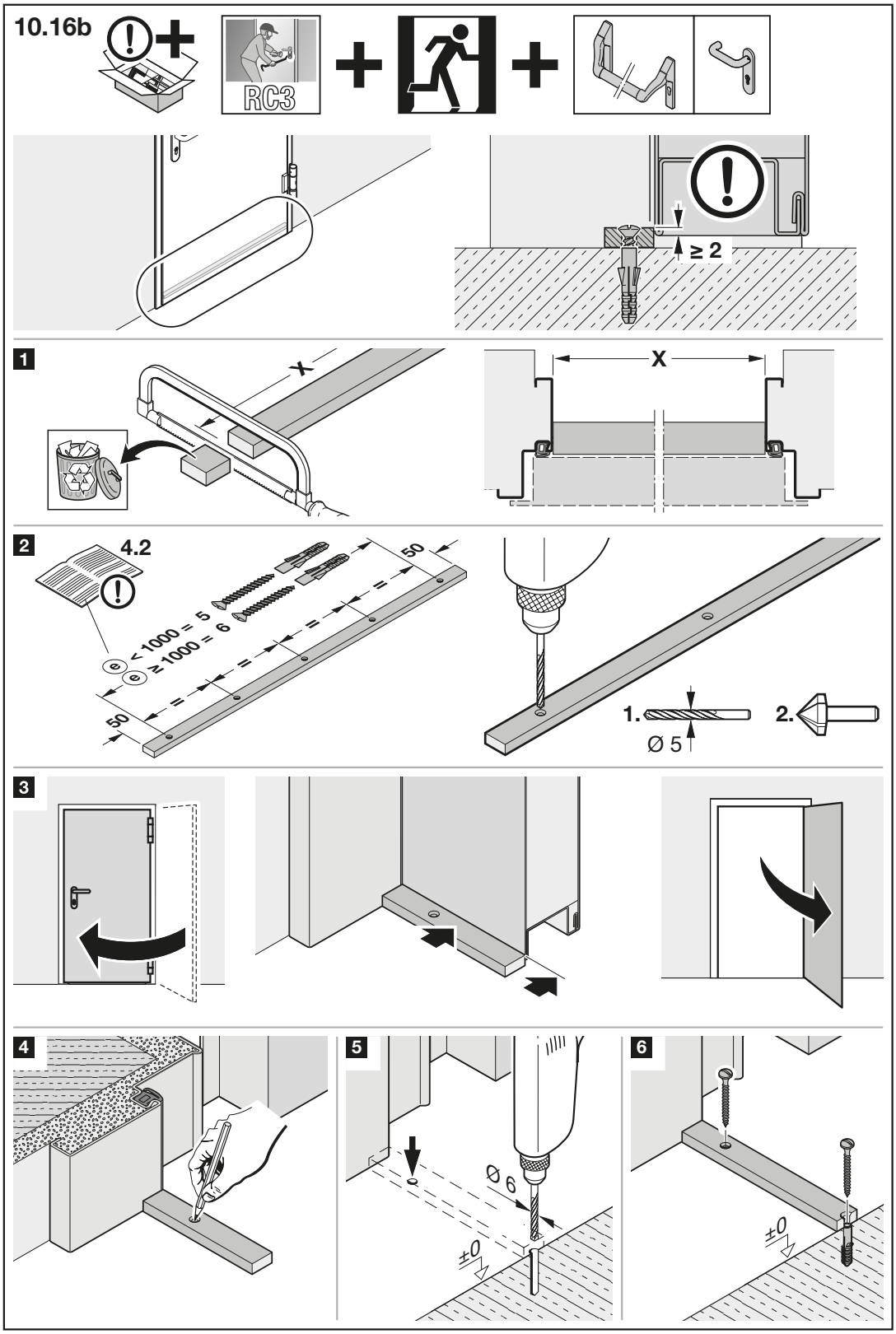
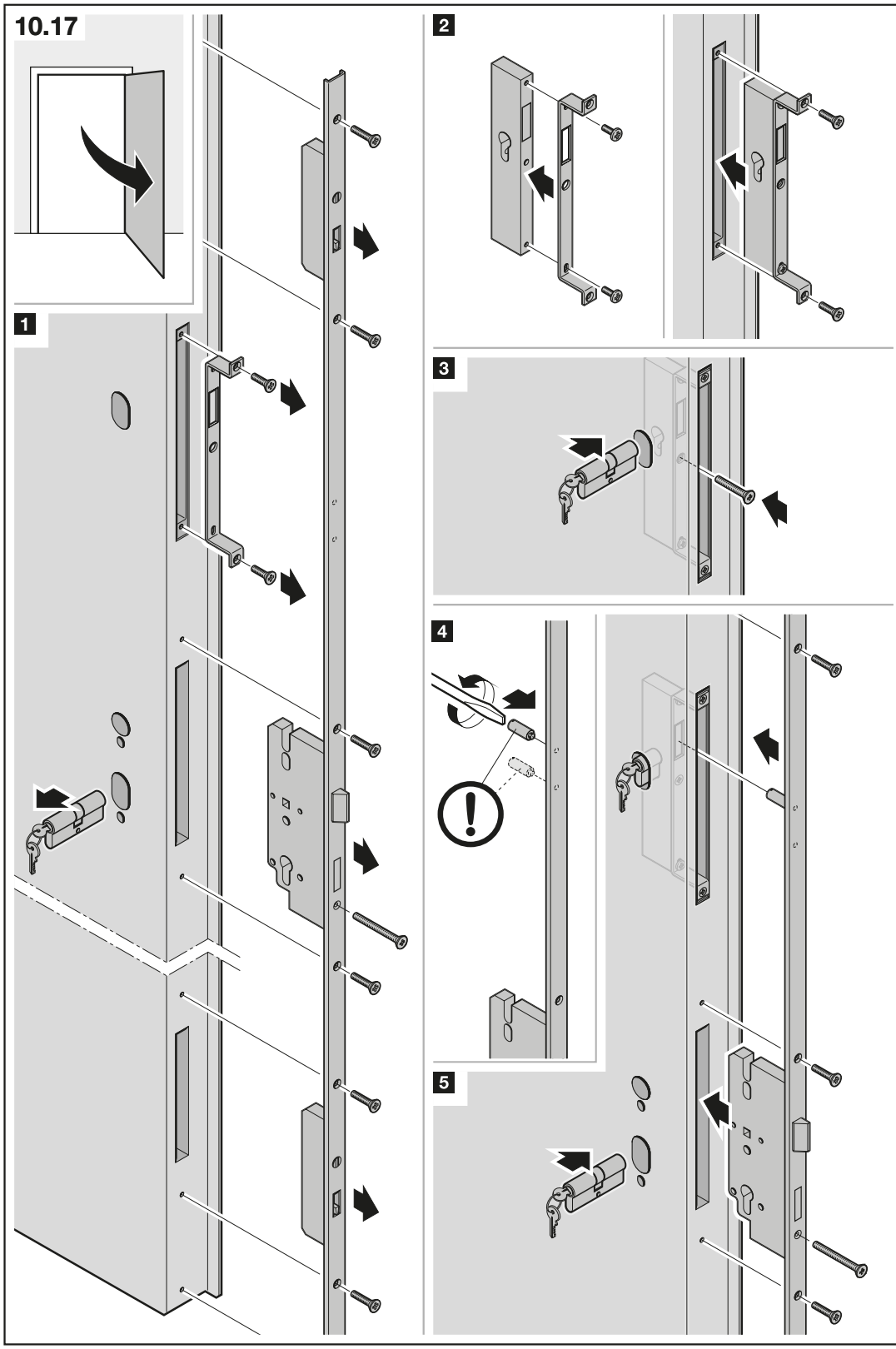
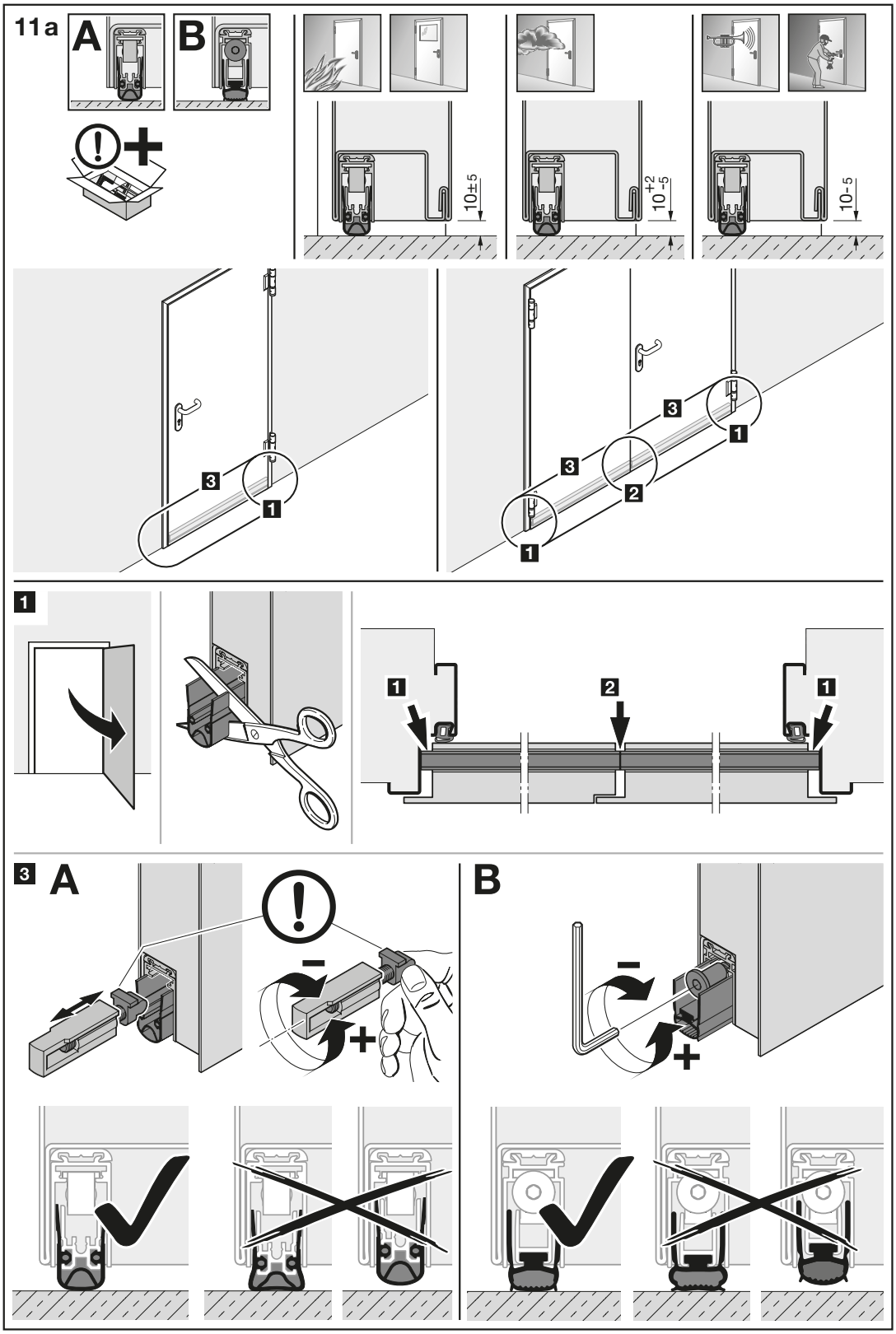
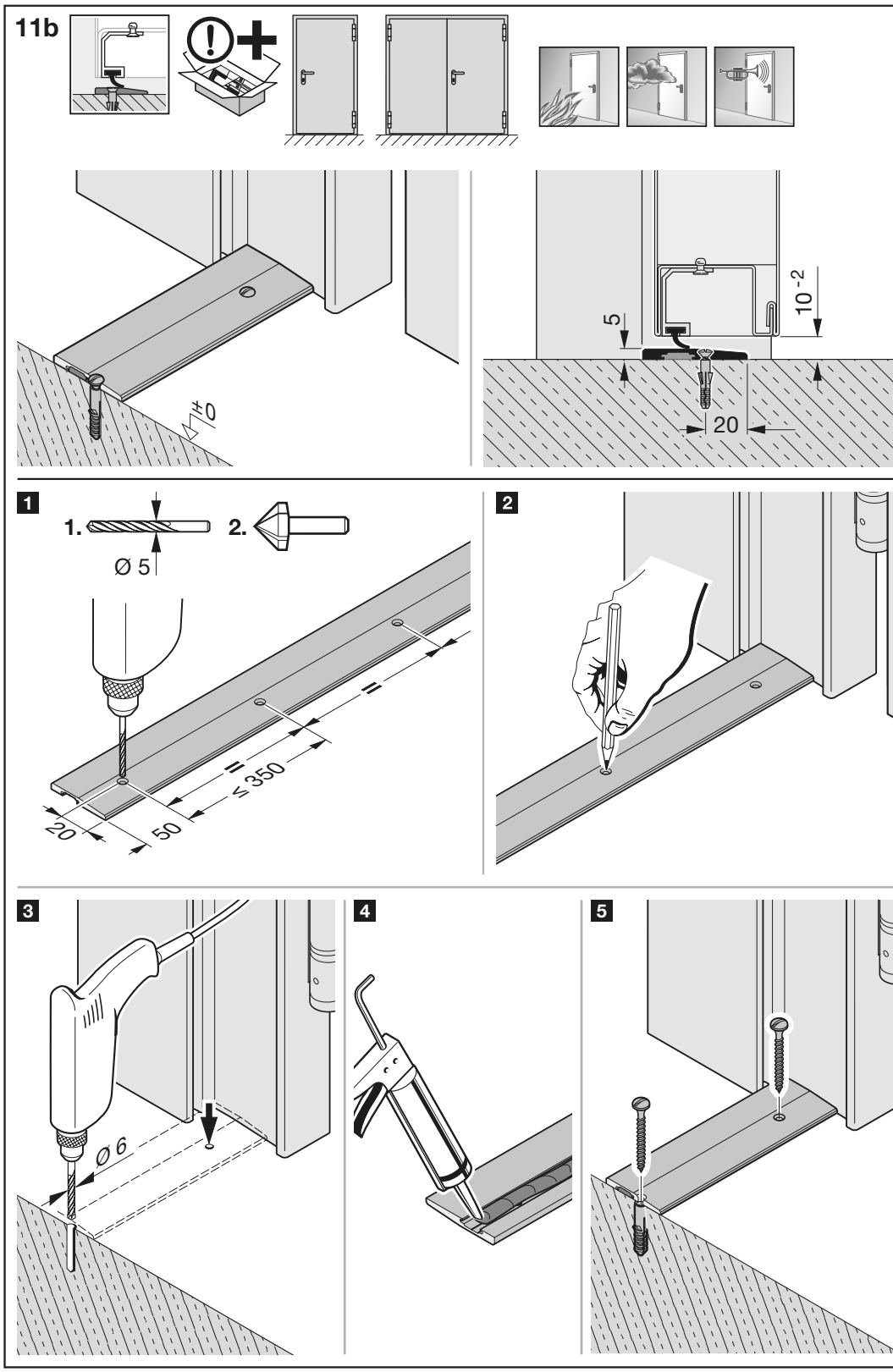
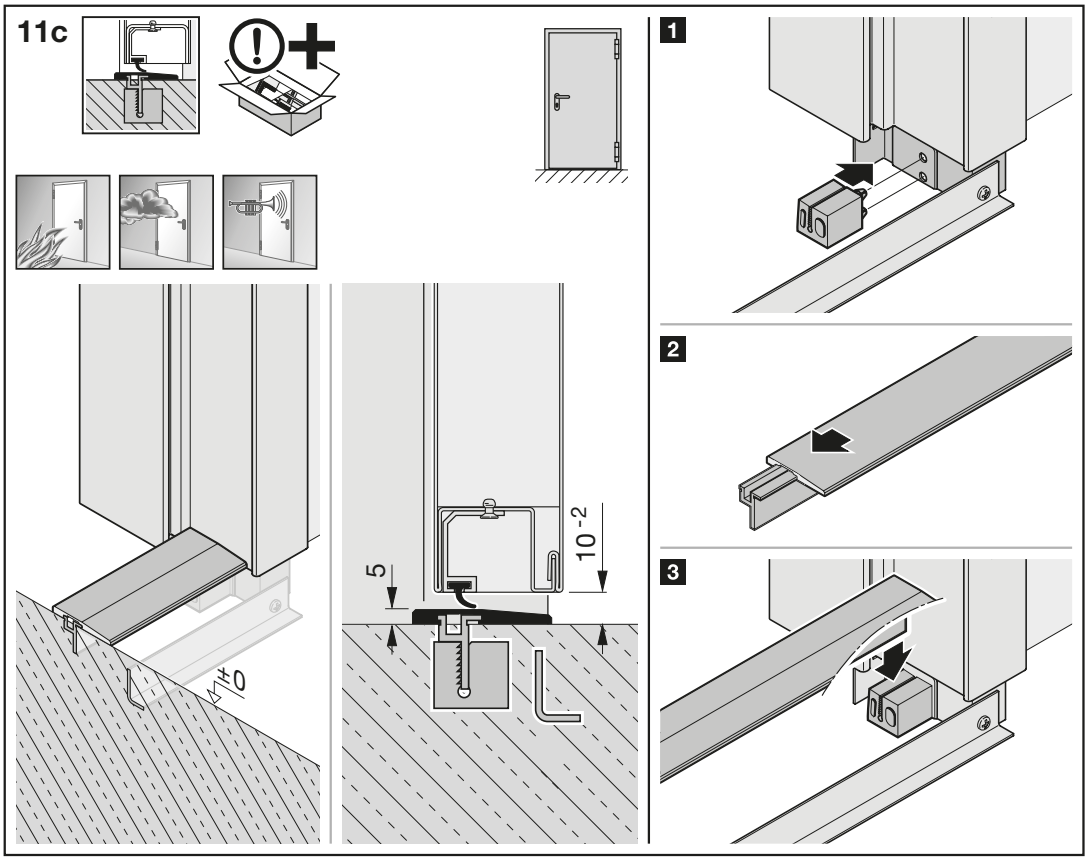


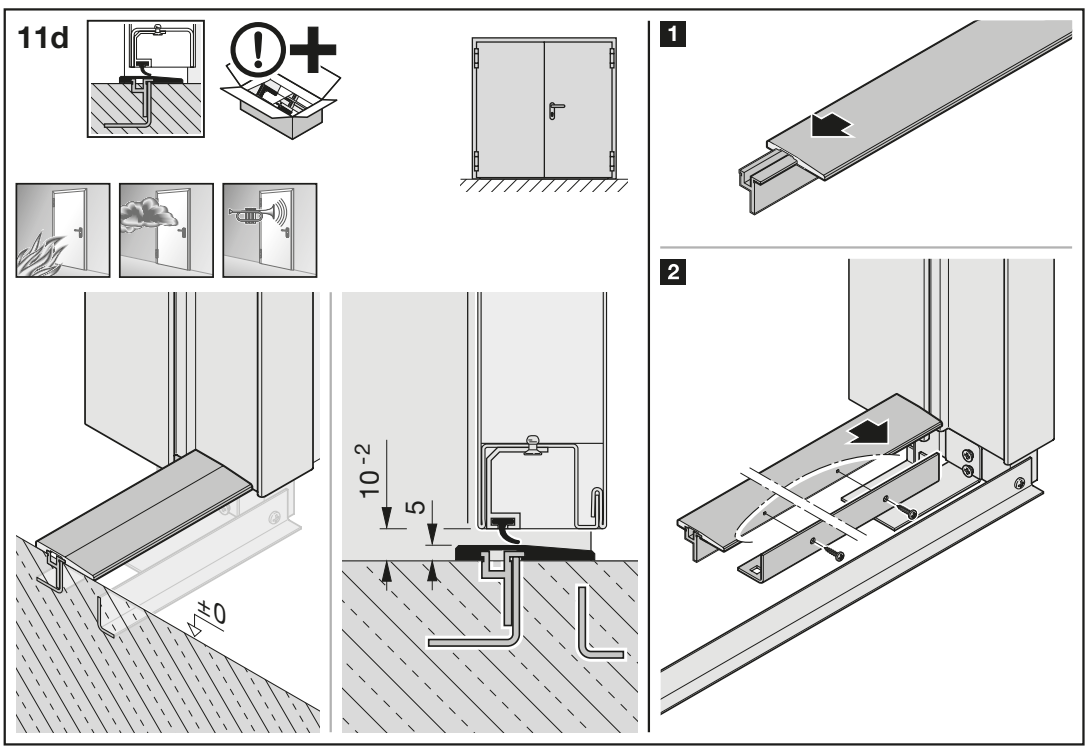

10.16b
RC3
≥ 2
1
X
X
2
4.2
50
< 1000 = 5
≥ 1000 = 6
50
1.
Ø 5
2.
3
4
5
Ø 6
±0
6
±0

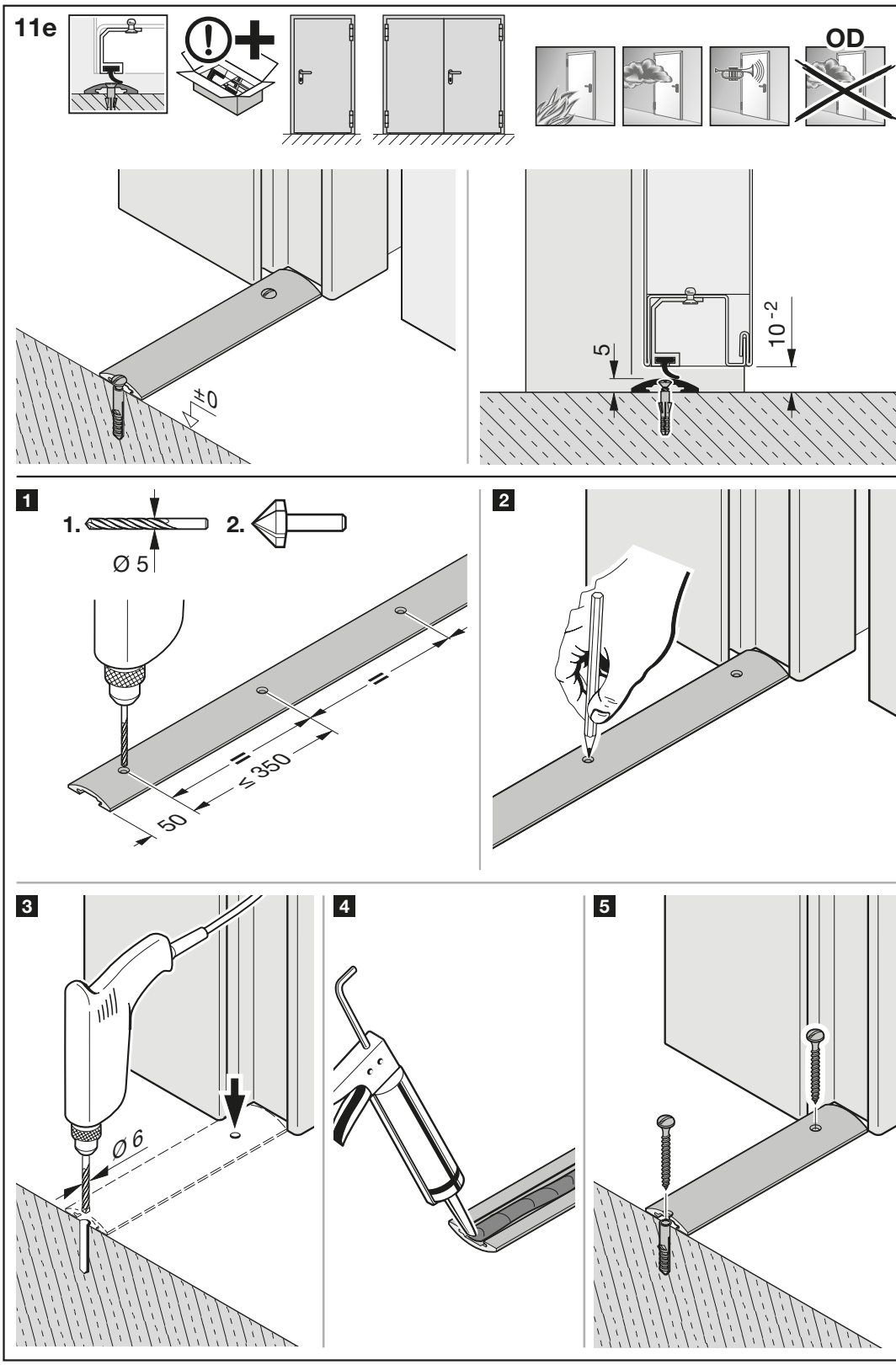

10.17
1
2
3
4
5

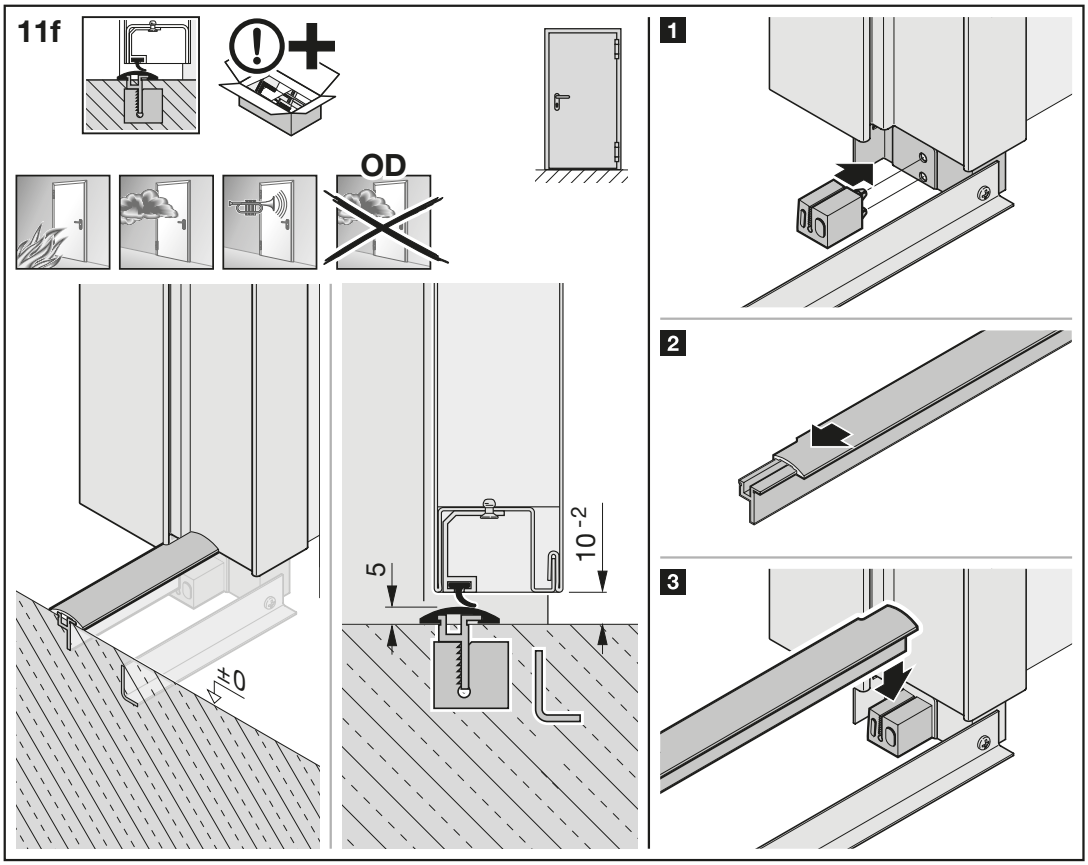

11a
A
B
10±5
10+2 -5
10-5
3
1
2
1
3
A
B

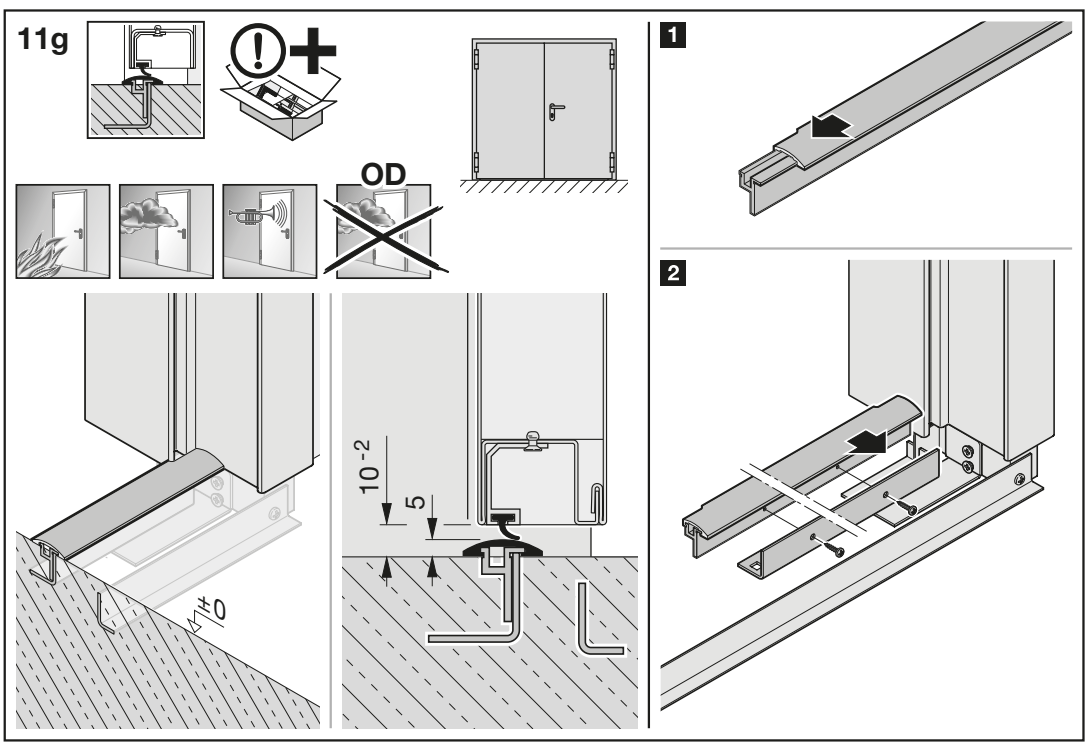

11b
≤ 10
5
10 -2
20
1
1.
2.
Ø 5
≤ 350
20
50
2
3
Ø 6
4
5

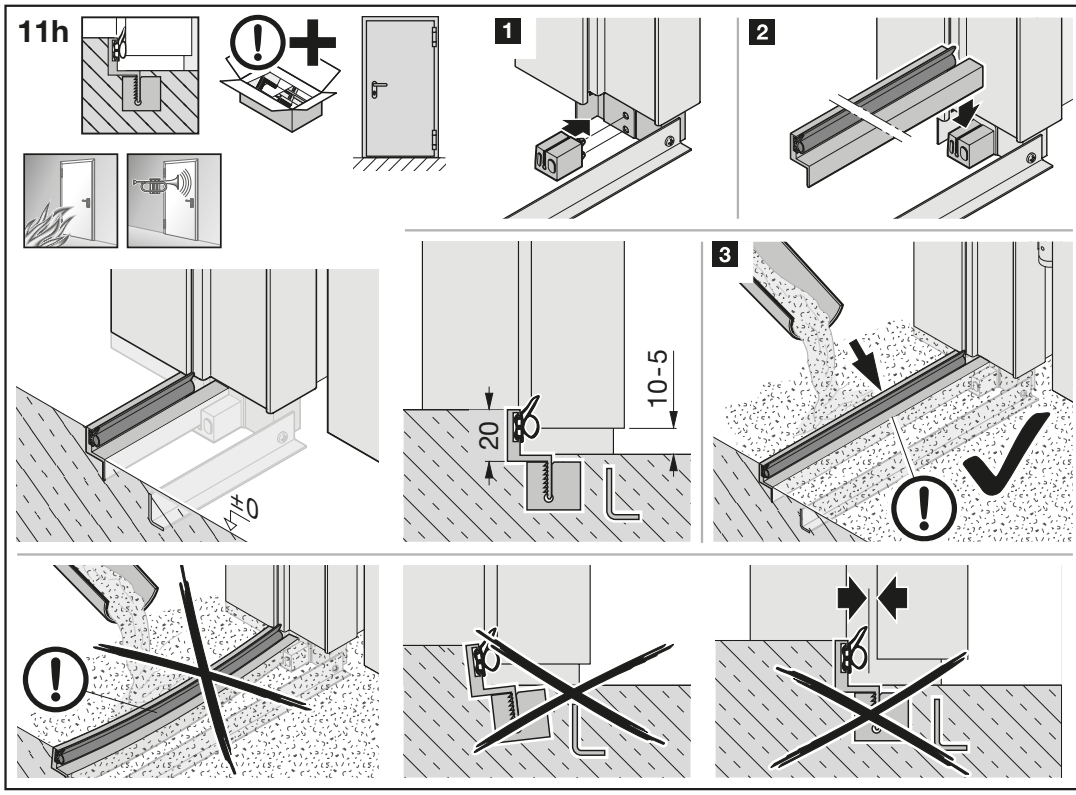

11c
1
2
3
5
10 -2
0

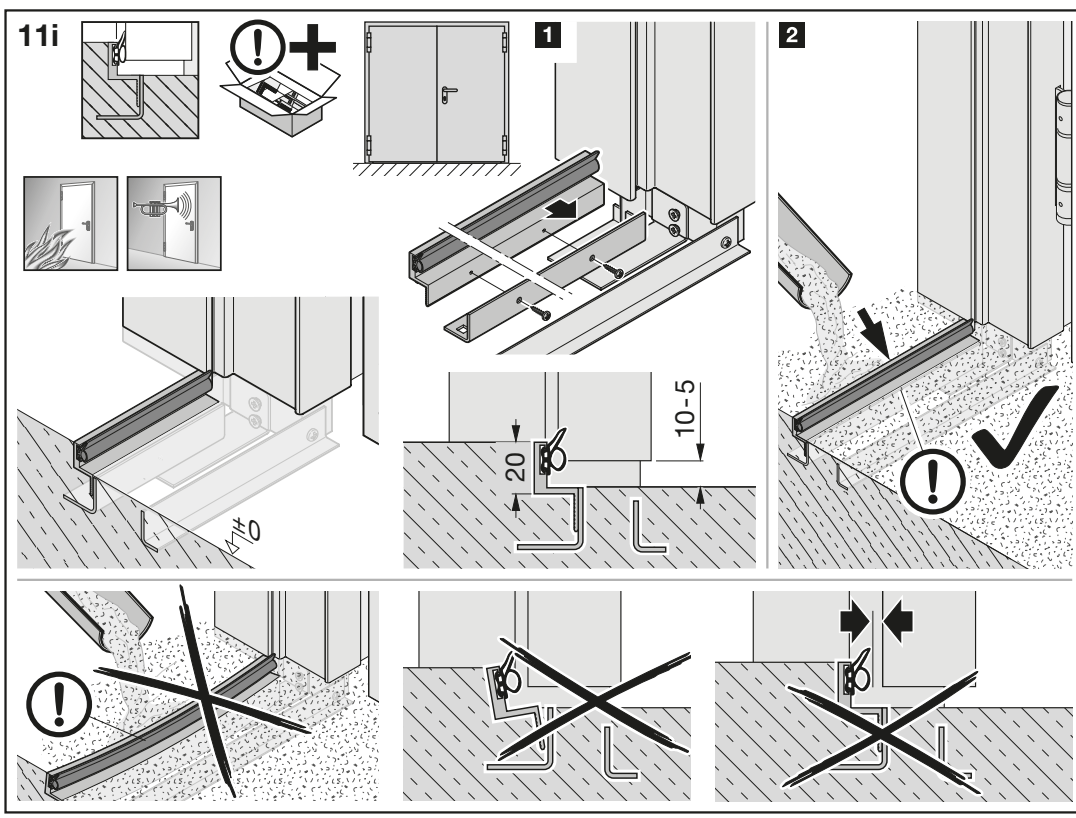

11d
1
2
10 -2
5
0

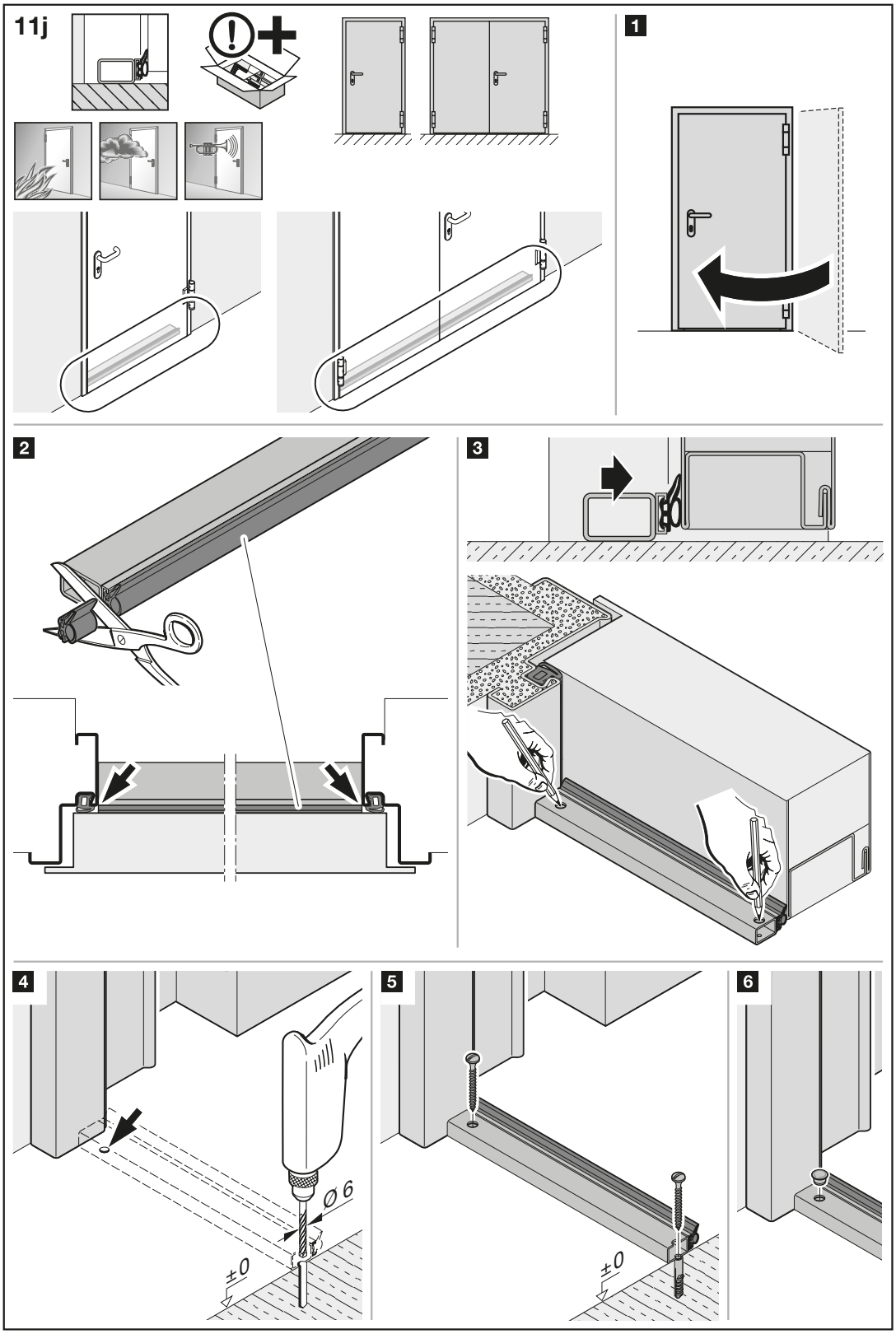

11e
OD
+10
5
10 -2
1
1.
2.
Ø 5
≤ 350
50
2
3
Ø 6
4
5


11f
OD
10 -2
5
0
1
2
3

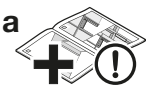

11g
OD
10 -2
5
0
1
2

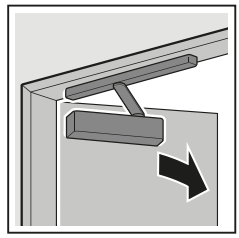

11h
1
2
3
20
10-5


11i
1
2
20
10-5

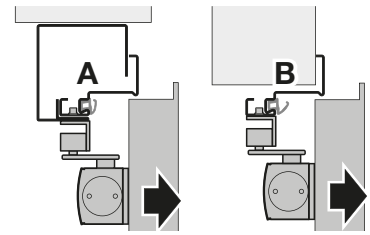

11j
1
2
3
4
Ø 6
±0
5
±0
6

12a

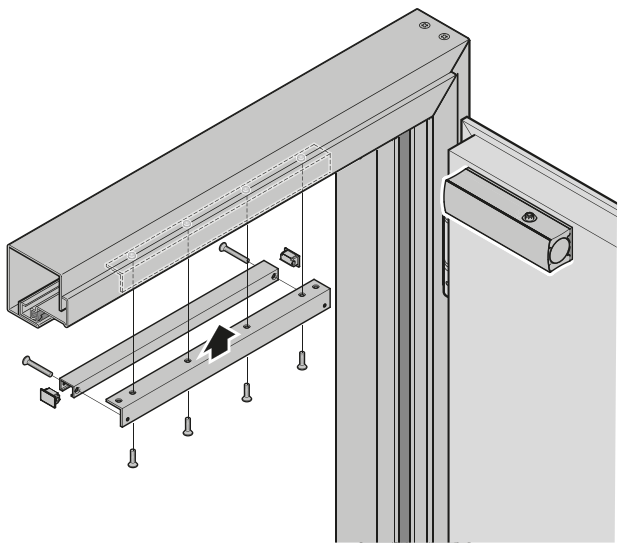




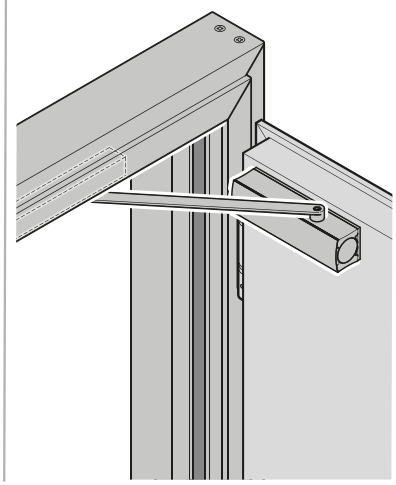
HDC 35 BG



1



2



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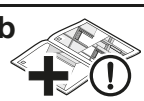

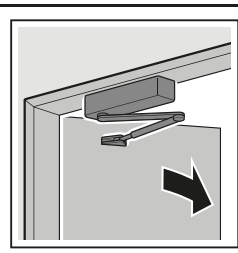

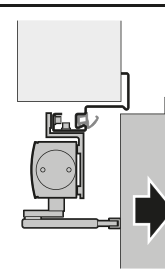

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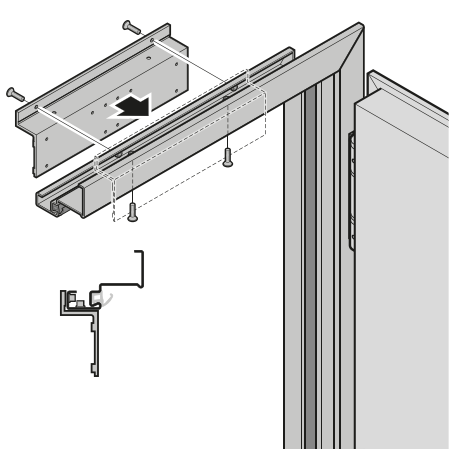

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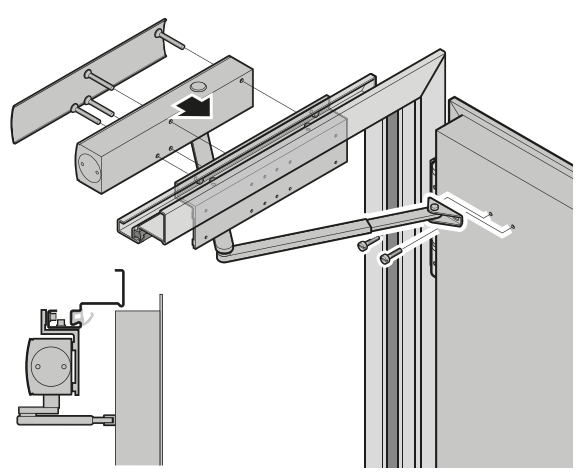

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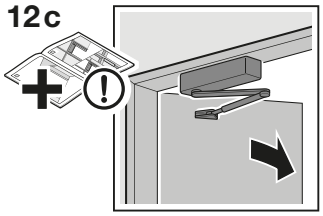

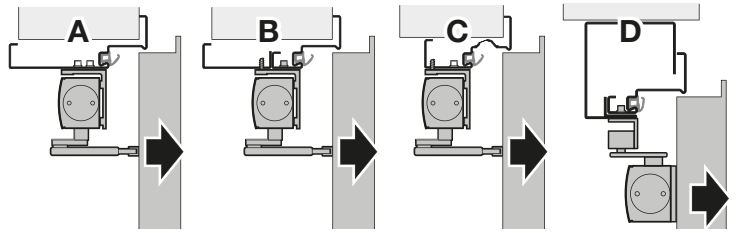

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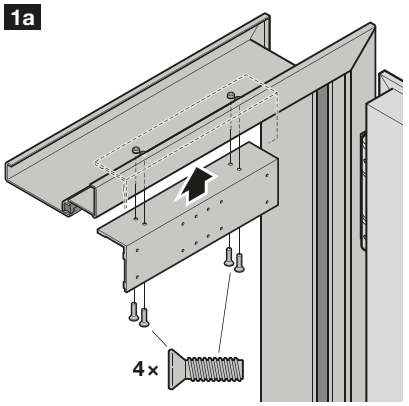

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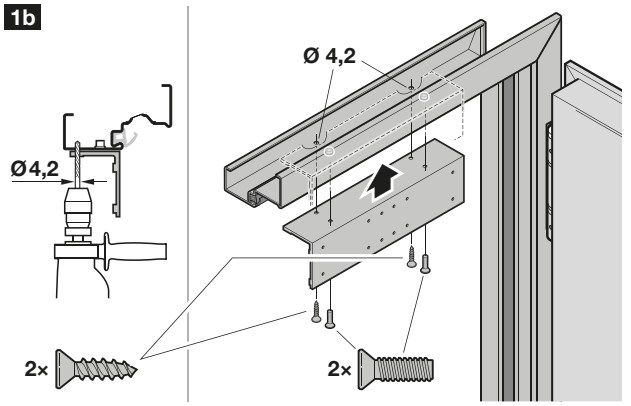

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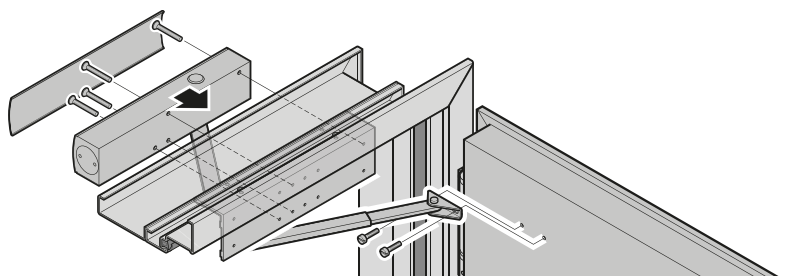

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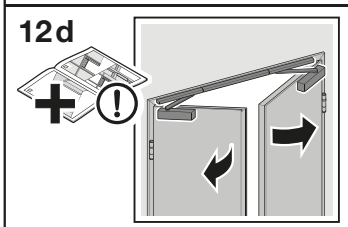
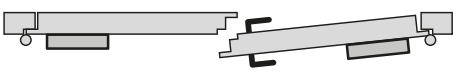
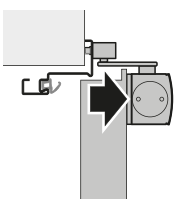
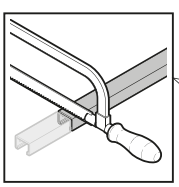


GEZE TS 5000
DORMA TS 93







4.2 (EN 12519)

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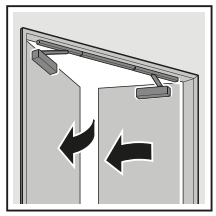
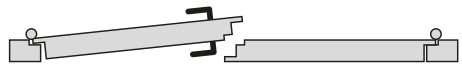
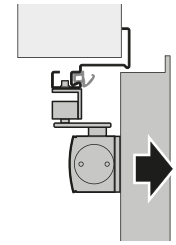
DORMA TS 93	1062

12e



GEZE TS 5000
DORMA TS 93





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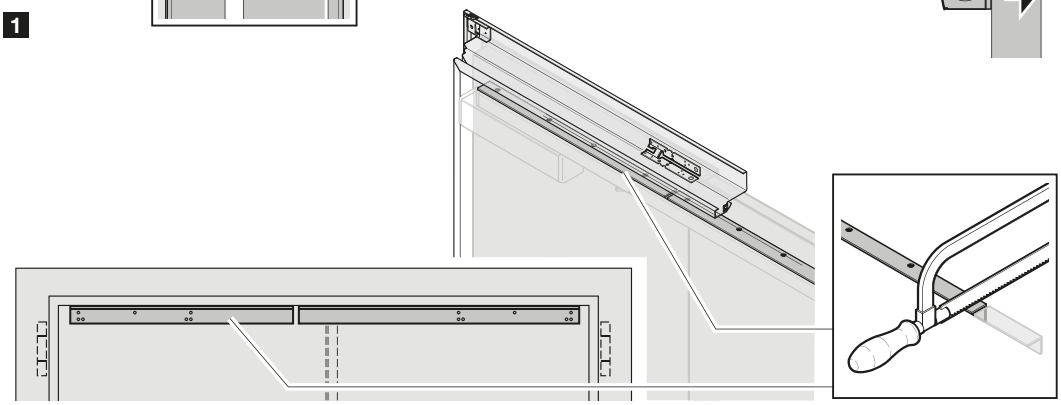

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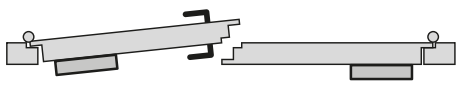

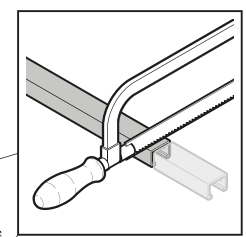

4.2 (EN 12519)

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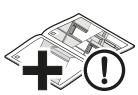
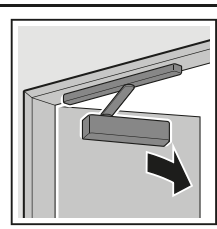
GEZE TS 5000	1130
DORMA TS 93	1179

12f

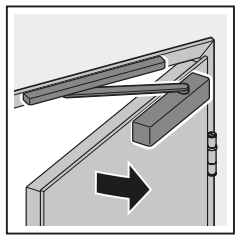
H16-2
H3-2



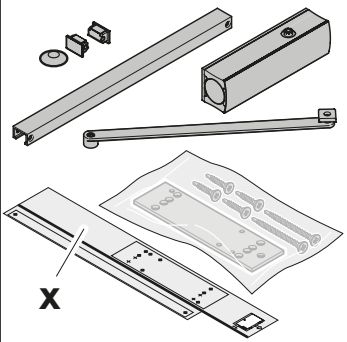


TS 93 GSR BG

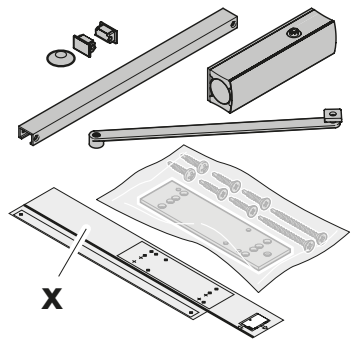
12g



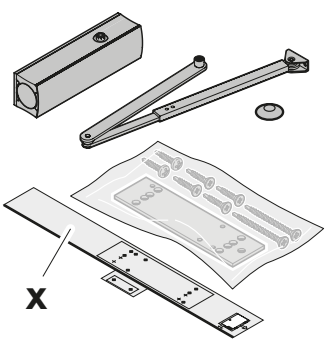
HDC 35



TS 5000



TS 4000



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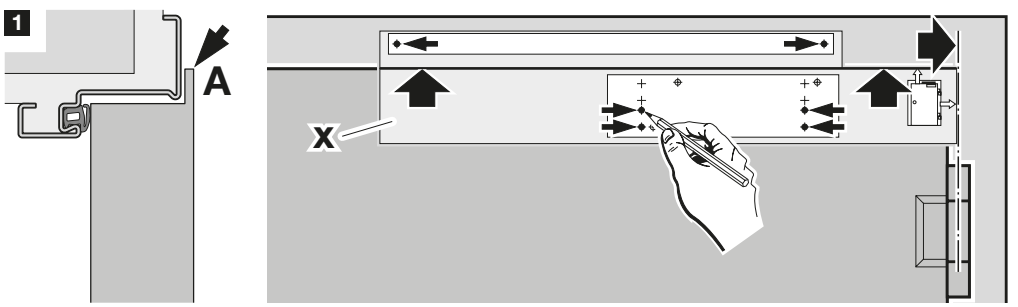
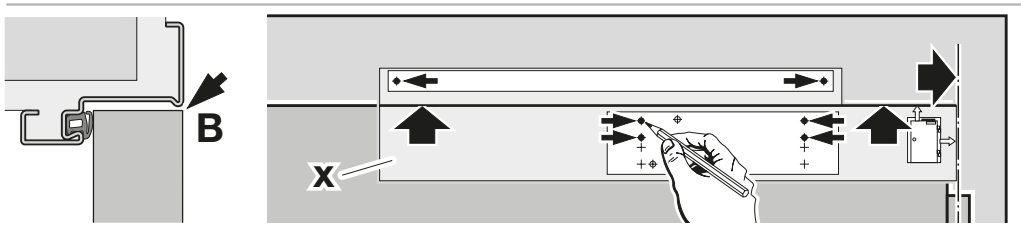
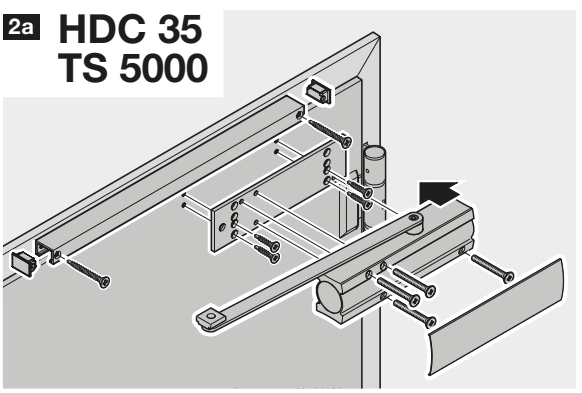




2a HDC 35
TS 5000



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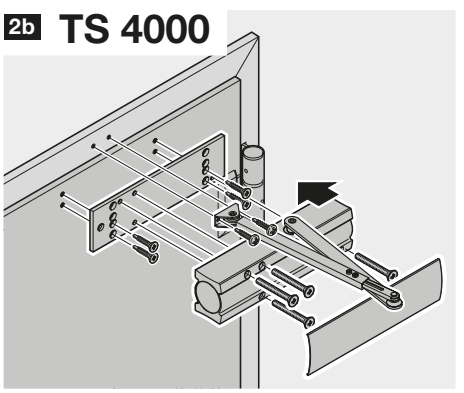

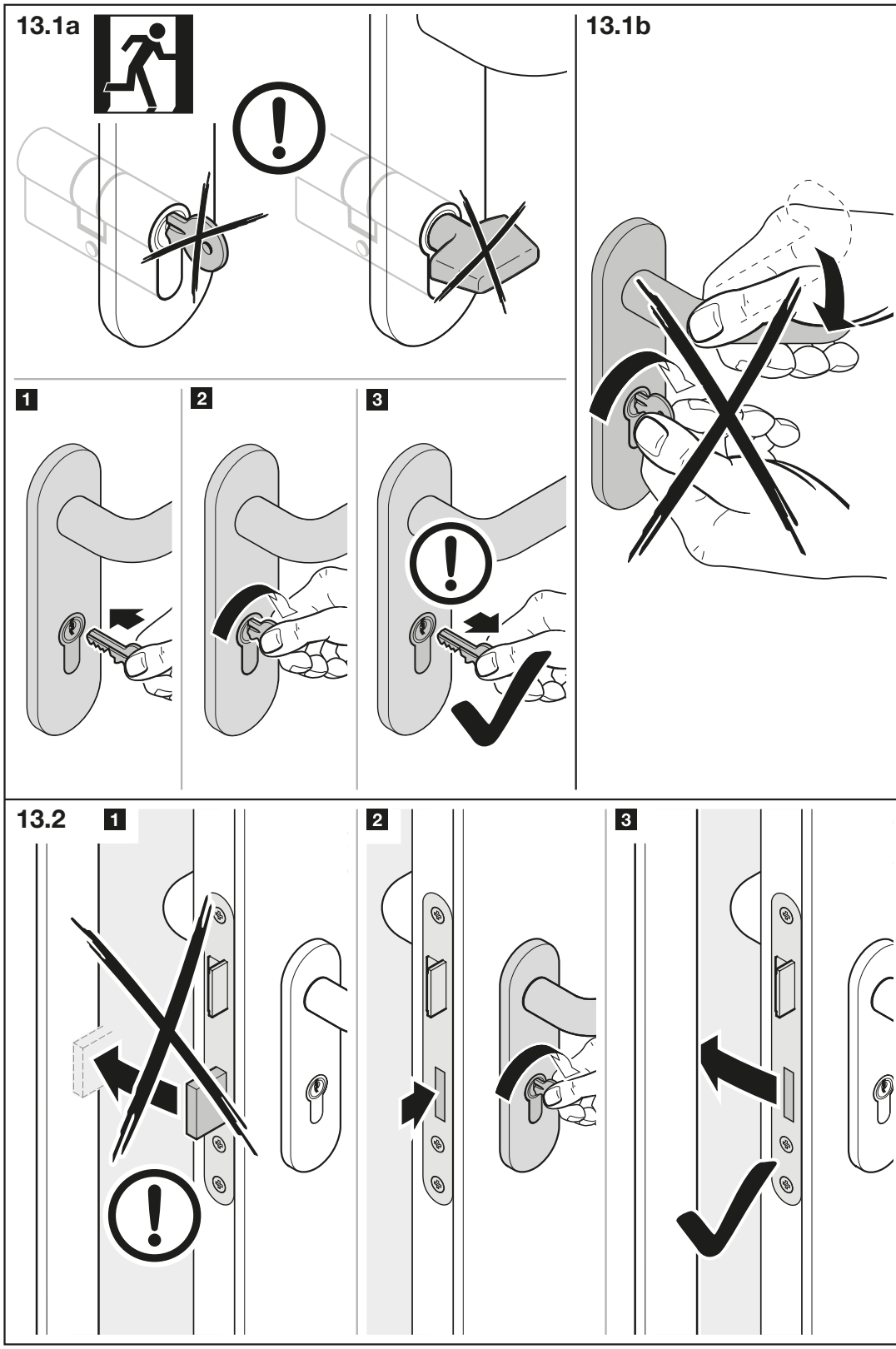
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13.1b
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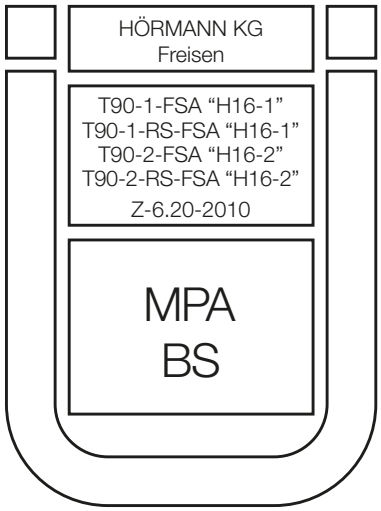
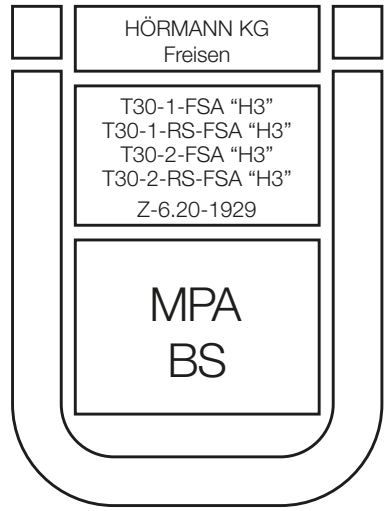
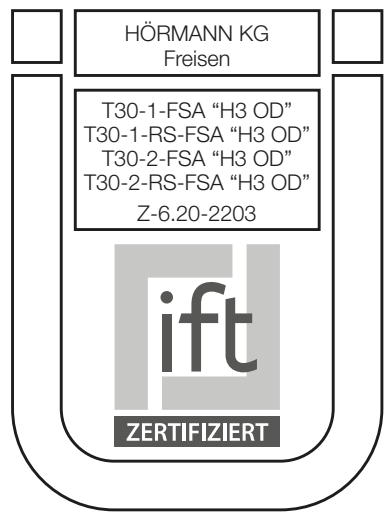
13.2
1
2
3







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