RHEINZINK®

REVEAL PANEL

System Technology for Facades

DESIGN AND APPLICATION

For up-to-date information, technical reports, advanced technical information,
parts lists, standard details or specifications please visit our website.

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13th edition

Foreword

This document describes the use of RHEINZINK-Reveal Panels. Although it forms the basis for proper planning and classical application solutions, it is no more than a guide for users. The detailed drawings included here describe solutions which are feasible at a practical level.

We should like to explicitly point out that in actual practice it may not be possible to create the type of cladding illustrated in this document – or not to their full extent. In this context every situation should be examined in detail by the planner in charge. It is necessary here to take account of the system-specific effects on the property and local/climatic conditions as well as the requirements in terms of building physics. Compliance with the application techniques and specifications described here does not release users from any responsibility in this regard.

This document is based on our practical experience and represents the latest findings from research and development, recognised standards and state-of-the-art technology. We reserve the right to make changes at any time in the course of further development.

Please also note our information on the material and its processing on our websites.

f you have any queries or suggestions, please contact your customer advisor or get in touch with your local RHEINZINK sales office. All contact data can be found on our homepage **www.rheinzink.com/contact**

Datteln, May 2020

CONTENTS

RHEINZINK®

bright rolled

blue-grey

graphite-grey

RHEINZINK-CLASSIC

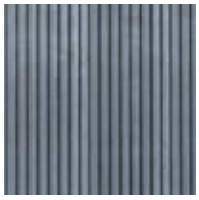
ORIGINAL.
EXPRESSIVE.
PATINATES OVER TIME.

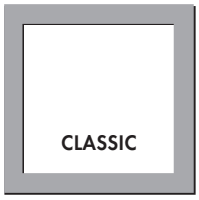
RHEINZINK-prePATINA

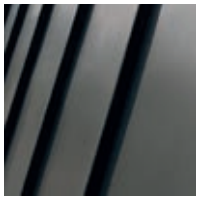
PRE-WEATHERED.
SELF-HEALING.
NATURAL.

ONE BRAND – 5 PRODUCT LINES

THE PERFECT SOLUTION FOR EVERY REQUIREMENT







TITANIUM ZINC BRIGHT ROLLED: PATINATES OVER THE YEARS. NATURAL, VARIABLE SURFACE CHARACTER.

THE ONLY NATURALLY PRE-WEATHERED SURFACE IN THE WORLD. ZINC TYPICAL PATINA EX WORKS. 100% NATURAL, 100% RECYCLABLE.

- skygrey
- basalte

RHEINZINK-GRANUM

NOBLE.
MATTE FINISH.
MULTIFACETED.

SKYGREY AND BASALTE. PURE, GREY ELEGANCE. URBAN DESIGN. PHOSPHATED SURFACE WITH COUNTLESS DESIGN OPPORTUNITIES.

- gold
- brown
- blue
- red
- green
- black

RHEINZINK-PRISMO

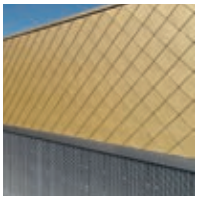
GLAZED.
DYNAMIC.
ADAPTABLE.

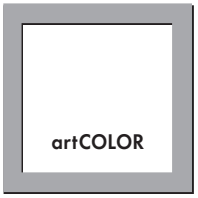
AESTHETIC, HARMONIOUS MATCH WITH ITS SURROUNDINGS. SUBTLE COLOUR VARIETY FOR A UNIQUE LOOK. SEMI-TRANSPARENT.

- pure-white
- pearl-gold
- moss-green
- nut-brown
- blue
- tile-red
- black-grey

RHEINZINK-artCOLOR

COLOURFUL.
LIVELY.
CREATIVE.





CREATIVE DESIGN POSSIBILITIES. INDIVIDUAL, EXPRESSIVE COLOUR COMPOSITIONS. COATED COLOUR VARIETY.

1. Function of rear-ventilated Facades

- **Windproof Building Envelope**
- **Weather Protection**
- **Moisture**
- **Thermal Economy**
- **Fire Protection**
- **Rear-Ventilation**
- **Air Intake and Exhaust Openings**
- **Soundproofing**

The rear-ventilated facade is a multi-layered system, which, when designed properly, guarantees permanent functional capability. By functional capability, we mean that all requirements pertaining to structural physics are met. This is described in detail below.

By separating the rainscreen facade from the thermal insulation and supporting structure, the building is protected from the weather.

he supporting outer walls and the insulation remain dry and thus fully functional. Even when driving rain penetrates open joints, it is quickly dried out as a result of the air circulation in the ventilation space. The bracket-mounted rear-ventilated facade protects the components from severe temperature influence. Heat loss in the winter and too much heat gain in the summer are prevented.

Thermal bridges can be reduced considerably.

In the case of rounded parapets and dormer girders, the substructure and thermal insulation should be protected from penetrating moisture with a suitable layer.

1.1 Windproof Building Envelope

This does not apply to the rear-ventilated facade, as this component itself cannot be windproof.
The building must be windproof before the rear-ventilated facade is installed. A solid brick or concrete wall will ensure that the building is windproof. Penetrations (e.g. windows, ventilation pipes, etc.) must be sealed from the building component to the supporting structure. In the case of a skeleton construction, the wall surface must also be sealed.
If the building envelope is improperly sealed (wind suction, wind pressure), there is a high degree of ventilation/energy loss, which, along with drafts, creates unpleasant room temperature. Dew or condensation can be expected on the leeward side of the building.
Air circulation in the room should be provided through air conditioning or by opening the windows.

1.2 Weather Protection

Rear-ventilated facade cladding protects the supporting structure, the water-proofed thermal facade insulation, and the substructure, from the weather.
Bracket-mounted rear-ventilated facades provide a high degree of protection from driving rain.
Because of the physical structure, it is impossible for the rain or capillary water transfer to reach the insulating layers. Furthermore, moisture can always be drawn out through the ventilation space. This allows the insulating layers to dry out quickly, without impeding thermal insulation.

1.3 Moisture

Rear-ventilated facade cladding provides protection from driving rain and moisture. Moisture penetration as a result of diffusion does not occur in the rear-ventilated facade.
When the supporting structure is windproof, the diffusion current density is too small to cause the dew point temperature to drop.

1.4 Thermal Economy

In order to understand the thermal economy of the rear-ventilated facade, we must first consider the various heat flow rates, as well as the air exchange between the rear-ventilation space and the outside air, separately, in terms of structural physics.

1.4.1 Thermal Insulation

In the winter, heat flow from the inside to the outside is referred to as a heat transfer co-efficient (U-value).
The smaller the value, the smaller the quantity of heat escaping to the outside. The U-value is determined by the heat conductivity of the thermal insulation and insulation thickness.

The high-grade thermal insulation is a contribution to environmental protection and pays for itself in a relatively short period of time through low heating costs.

1.4.2 Summer thermal Insulation

Summer thermal insulation should provide comfort: The amount of heat flowing from the outside to the inside sh ould remain as small as possible. Proper thermal insulation, as well as a certain mass in the construction itself, will help to achieve this objective.
The advantage of a bracket-mounted, rear-ventilated facade, is that a large portion of the heat which streams onto the cladding is diverted through convective air exchange.

1.4.3 Thermal Bridges

Thermal bridges are elements of the building envelope, that have high thermal conductivity (have high U-values) and are continuous from the warm side to the cold side of the thermal insulation. Apart from general design-dependent thermal bridges of a building, e.g. protruding balconies, the installation of the substructure must be taken into account in the case of a rear-ventilated facade. Thermal bridges can be reduced significantly by installing an insulating strip between the supporting structure and the substructure (thermal break).
Proper installation of the insulation reduces the formation of thermal bridges.

1.5 Fire Protection

Metal facades with a metal substructure and appropriate fasteners meet the highest requirements for non-combustibility (Building Material Class A1, DIN 4102). In the case of bracket-mounted, rear-ventilated facades, it may be necessary to install firestops.

1.6 Rear-Ventilation

The free ventilation cavity between the facade cladding and the layer behind it must be at least 20 mm. Tolerances and plumbness of the building must be taken into account. In some places, this rear-ventilation space may be reduced locally up to 5 mm – e.g. by means of the substructure or the unevenness of the walls.

1.6.1 Air Intake and Exhaust Openings

The rear-ventilation space requires intake and exhaust vent openings. These openings must be designed so that their functionality is guaranteed for the lifetime of the building. It cannot be hindered through dirt or other external influences. The openings are located at the lowest and highest point of the facade cladding, as well as in windowsill and window lintel areas, and penetrations. In the case of higher, multi-storey buildings, additional intake and exhaust vent openings should be provided (e.g. at each floor).

1.7 Soundproofing

To prove that a facade design is soundproof, the entire wall structure, as well as each building component (windows, etc.) must be defined. The use of proper static fasteners will prevent any potential noise development as a result of the cladding.

2. RHEINZINK Profile Group Reveal Panel SF 25

The reveal panel opens up a wealth of design possibilities for the designer, because it can be installed vertically and diagonally. Variable spacing of the reveal joints (0-30 mm) underscores segmentation when the reveal panel is used. The reveal panel is available in widths of 200-333 mm.

Technical Approval

The RHEINZINK-Reveal Panel System is subject to EN 14782 and is approved for use with substructure spacing ≤ 1.00 m (other support spacing possible on request). In Germany the facade system is additionally governed by the Construction Products List B, Part 1 (edition 2015/2), section 1.0 relating to construction products subject to harmonised standards according to the Construction Products Directive, section 1.4.10.1 Self-supporting roof covering and wall cladding elements for interior and exterior application made of sheet metal.

Static Load Tables

Load tables are based on DIN 18807 for profile section properties.
Deflection:
1/180 for facade components
Safety factor:
g = 1.50
(this is taken into account in the tables)

Units for Loads and Forces

The load tables indicate permissible forces and loads in kN/m².
Deflection values in relation to span width are given for single span, double span or multi-span conditions.
The following indicators are used for display purposes:
Single span ■
Double span ■■
Multi-span ■■■

Span width in m		0.50	0.60	0.80	0.90	1.00	1.20	1.40	1.50	1.60	1.70
Permissible wind load in kN/m²	■			3.50	3.14	2.83	2.36	2.00	1.89	1.78	1.67
	■■	2.20	1.85	1.42	1.28	1.14	0.95	0.86	0.82	0.77	0.73
	■■■	2.50	2.14	1.56	1.41	1.30	1.09	0.95	0.91	0.87	0.83

SF 25-200, s = 1.00 mm

Span width in m		0.50	0.60	0.80	0.90	1.00	1.20	1.40	1.50	1.60	1.70
Permissible wind load in kN/m²	■			2.83	2.50	2.27	1.89	1.62	1.49	1.40	1.32
	■■	1.78	1.48	1.14	0.99	0.93	0.82	0.70	0.65	0.59	0.53
	■■■	2.04	1.70	1.30	1.16	1.03	0.91	0.81	0.76	0.71	0.66

SF 25-250, s = 1.00 mm

Span width in m		0.50	0.60	0.80	0.90	1.00	1.20	1.40	1.50	1.60	1.70
Permissible wind load in kN/m²	■	3,37	2.82	2.12	1.89	1.71	1.41	1.18	1.07	0.97	0.89
	■■	1.36	1.13	0.89	0.82	0.74	0.59				
	■■■	1.48	1.30	0.98	0.91	0.85	0.72	0.58	0.52		

SF 25-333, s = 1.00 mm

Table 4: Load table for reveal panel
Basis for design: uniformly distributed load, including the weight of the profile itself
Safety factor: 1.50
Tensile yield strength: 100 N/mm²
Width of support profile: ≥ 50 mm
DIN 18807/experimental testing at the University of Karlsruhe, Germany

2.1 Profile Geometry

Metal gauge
s = 1.00 mm / 1.20 mm

Cover widths SF 25 s = 1.00 mm	Weight
200 mm	11.20 kg/m²
225 mm	10.70 kg/m²
250 mm	10.40 kg/m²
300 mm	9.84 kg/m²
333 mm	9.60 kg/m²

Cover widths of 200-333 mm
All sizes in between, in mm intervals, are possible. For widths of over 250 mm, we recommend using a material thickness of 1,20 mm.

Possible Applications

- Facades
- Soffits
- Parapets

Fastening

Using rivets or screws, the panels are fastened directly onto the substructure, through the protruding leg of the groove (see detail above).
Linear expansion is restricted by limiting the length of the facade panel, and accommodated via the deflection of the substructure.

Dimensions

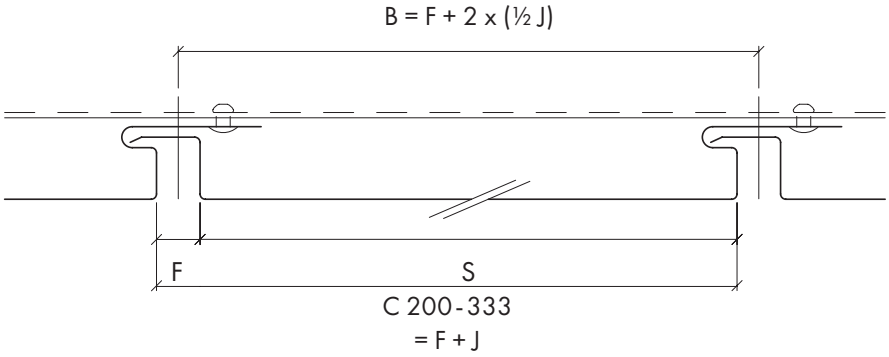
- Drawings: Dimensions in mm
- Panel designation: SF 25-287 (example)
- Standard length: ≤ 4000 mm
- B: bay width
- C: cover width
- J: joint width
- F: face width

Tolerances

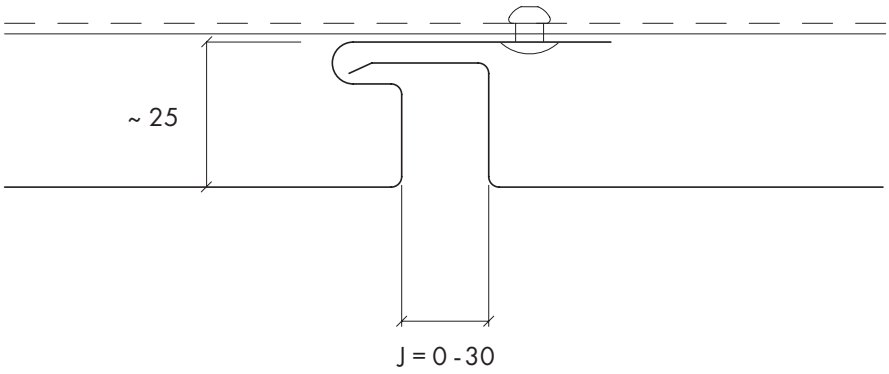
As per RHEINZINK works standard

Note re Installation:

- Reinforcing the panels at both ends with backfolds is recommended
- A 0-33 mm wide reveal joint (J) is possible
- The cover width (C) of the panel is manufactured with a minus tolerance of < 1 mm.



System section



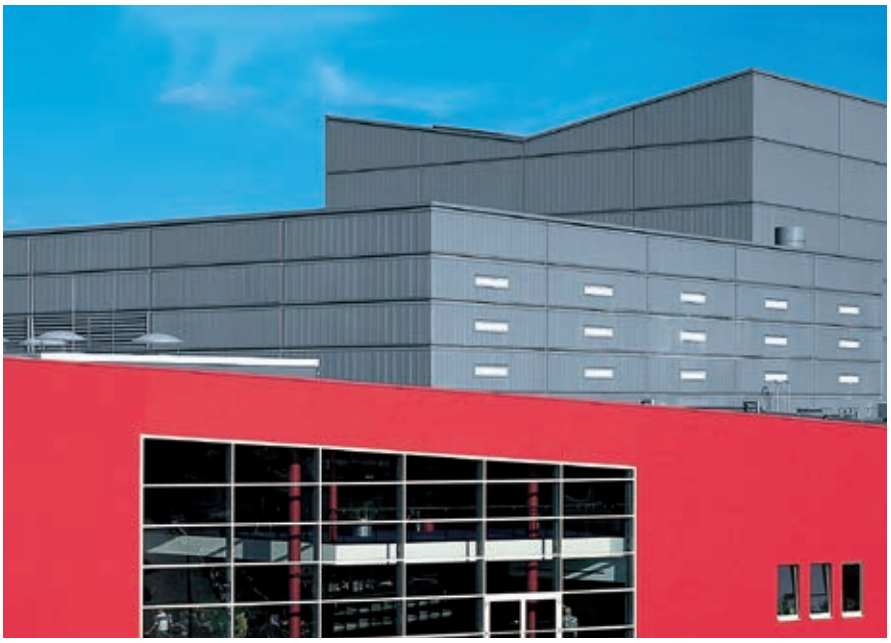
Joint configuration

2.1.1 RHEINZINK-Reveal Panel, vertical Installation

RHEINZINK panel, SF 25 with 20 mm reveal joint

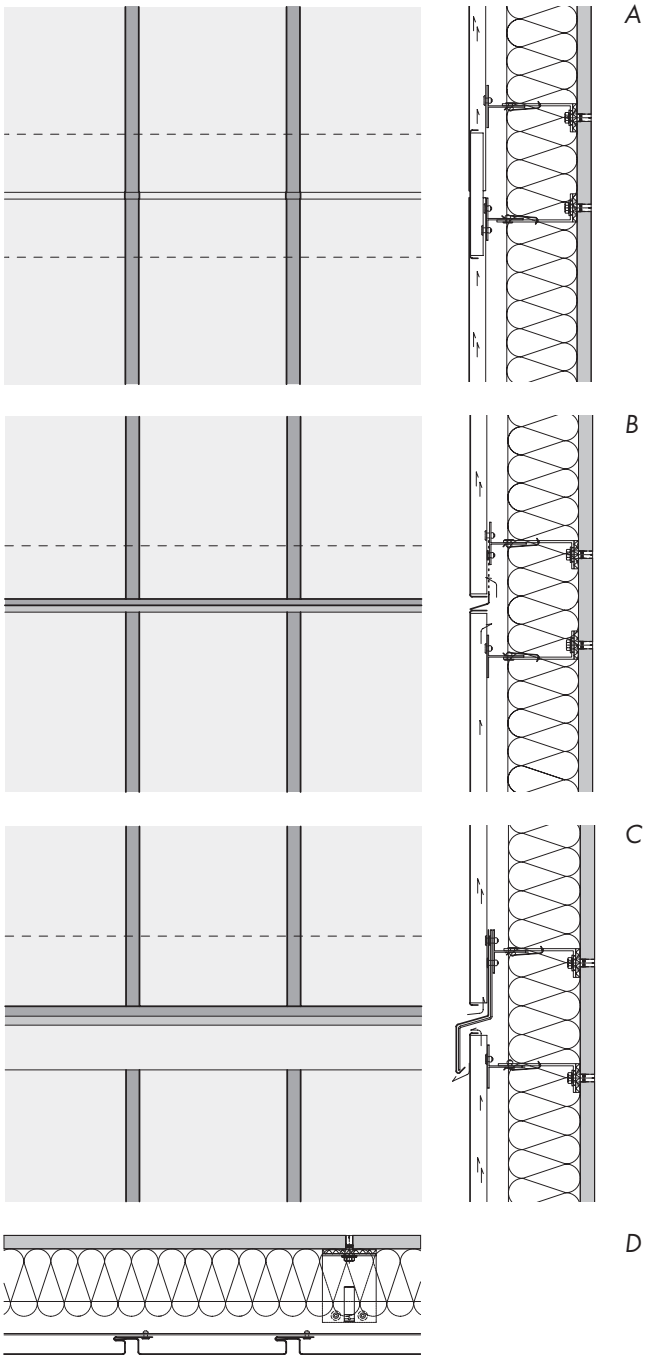
Telecom Giubiasco, Giubiasco, Switzerland

RHEINZINK panel, SF 25 with 15 mm reveal joint



Theater am Marientor (previously: Les Misérables), Duisburg, Germany

View **Profile**



2.2 Joint Formation

2.2.1 Vertical Panels

2.2.1.1 Horizontal Joint

A: Slave Profile

A virtually seamless transition from one panel to the other strongly accentuates the verticality of the facade. This type of joint formation does not affect the rear-ventilation space.

Fastening

Using rivets or adhesives, fastening is one-sided directly onto the substructure or onto the lower panel.

B: Flashing Profile installed within horizontal Joint

Panel with backfolds closes the vertical joint and frames the panel with a surrounding reveal joint.

C: Cornice Profile

The horizontal joint can be accentuated by using profiles of varying widths. It is important not to interrupt or close off the rear-ventilation space.

2.2.1.2 Vertical Joint

D: Butt Joint

This joint is formed by using a certain type of panel. It can be developed in varying widths from 0-30 mm and affects vertical segmentation.

Note:

- Theoretically, all of the joint formations illustrated here can be used on all vertically installed RHEINZINK panels.
- Facade sections should be separated by means of expansion joints - a max. of 4000 mm (Example A, B, C).
- When determining panel lengths (Example C), air intake and exhaust openings must be taken into account.

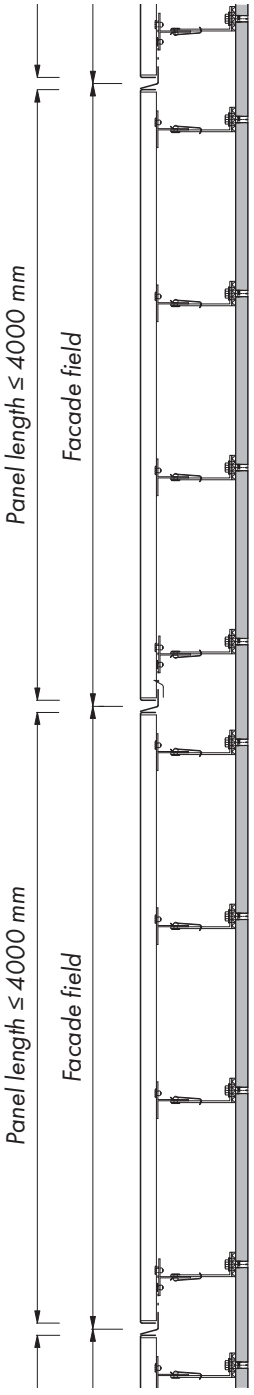
2.3 Accommodating thermal Expansion of Facade Cladding

- Thermal expansion of facade profiles is accommodated by means of expansion joints.
- Statically connected fields cannot exceed 4000 mm in length. Exceptions must be discussed and coordinated with your local consultant or the Department of Application Engineering.*
- In the area of expansion joints the fixing to the substructure must be executed accordingly.
- The substructure must be designed to be independent for each facade field around the expansion joint.

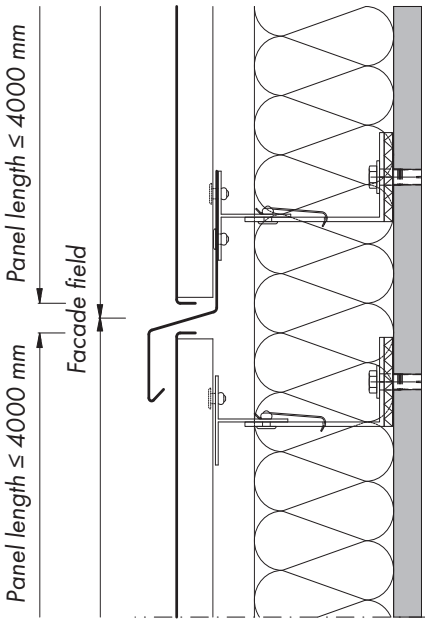
Two examples of facade implementation illustrate the connections schematically:

Example A
Large cladding components each form a field, which is fastened separately from the next field, by means of expansion joints.

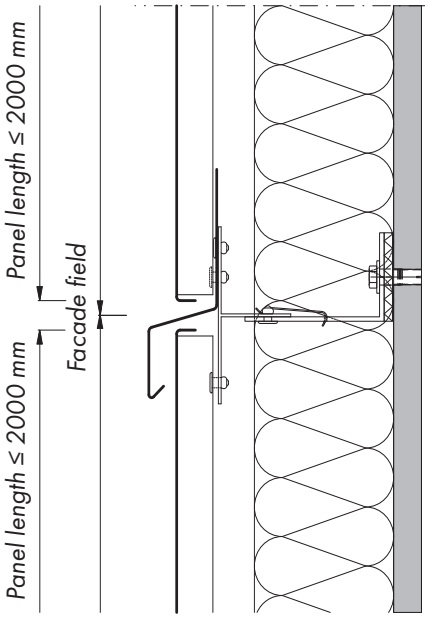
Example B
Small facade components are combined to create one facade field. Linear expansions can be accommodated after every third component, however, the total length of 4000 mm should not be exceeded.



Example A: Facade field joint (separation by means of expansion joints)



Example B: Facade joint serving as expansion joint



Example B: Facade joint serving as design feature only

* *see www.rheinzink.com*

2.4 Substructure

RHEINZINK facade systems are normally installed on substructures consisting of single, double, or multiple non-ferrous metal systems. Apart from efficiency and the structural advantages provided by these systems, they also guarantee control and monitoring of fastening patterns and compliance with fire protection regulations. Moreover, the double and multiple systems enable building tolerances to be adjusted without difficulty.

The architectural appearance of the profiles determines the design of the substructure. Before the substructure is constructed, those concerned must determine the appropriate design, otherwise – inevitably – the design would determine the architecture.

Note:

Use of wood as a substructure for large facade surfaces in system technology is not recommended because of its behaviour when damp and difficulty in adjusting tolerances.

However, a dried wooden substructure is definitely suitable for small surface applications such as dormers, fascias and gable walls.

The location and orientation of the fixed and sliding points for metal substructures must be determined based on the type of cladding, the surface and length of the panels.

With single substructure systems, the disadvantages certainly outweigh the advantages, such as:

- inability to accommodate building tolerances
- large thermal bridges

All technical problems are solvable when double/multiple systems are used:

- local thermal bridges only
- rear-ventilation throughout is guaranteed

However, the expensive and elaborate design coupled with the fact that two or more installation procedures must be implemented must be taken into consideration.

Double or two-part systems constitute the "happy medium":

Advantages

- cost-effective
- easy accommodation of building tolerances
- local thermal bridges only

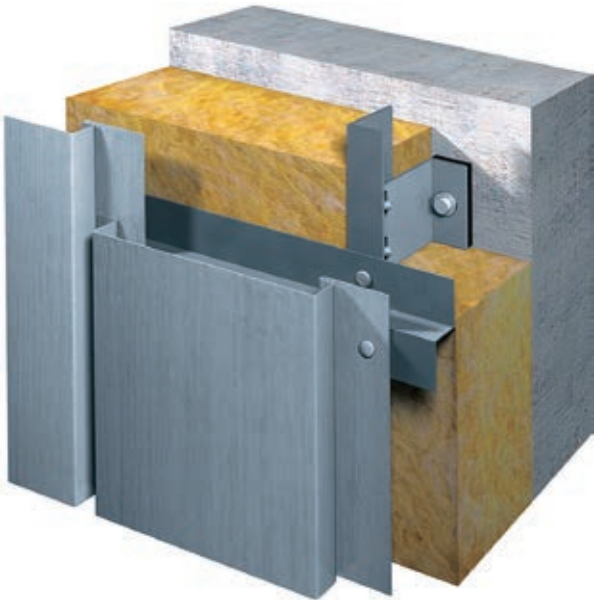
Disadvantages:

- two installation procedures
- depending on the detailing requirements additional costs can occur

SUBSTRUCTURE

Single substructure

Double or two-part substructure



Multi-part substructure

2.5 Fasteners

Fasteners are parts that connect the cladding to the substructure mechanically. The edge distance of connections and fasteners in the substructure must be at least 10 mm. Only corrosion-resistant fasteners, which guarantee long-term function capability, may be used.

Possible Fasteners

2.5.1 EJOT® Drilling Screws

Area of Application

Drilling screws to join
- RHEINZINK panels

onto
- steel substructures 1,5 - 4,0 mm
- aluminum substructures 1,5 - 4,0 mm

JT 3 - FR - 6 - 5,5 x 25 - E11

Marking	Ø x mm	Length mm	Drill capacity $t_I + t_{II}$ mm	Clamping thickness mm
JT3 - FR - 6	5.5 x	25	min. 0,63 + 1,5 max. 2,0 + 4,0	0 - 7.0

2.5.2 EJOT® Blind Rivet with large Collar

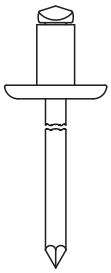
Aluminum (Al) rivet sleeve
Rivet mandrel made of high-grade steel
Secure connection

Area of Application

Use blind rivets to fasten
- RHEINZINK panels
- steel or aluminum profile sheets

onto
- steel substructures
- aluminum substructures

Blind rivet K14 - Al/E - 5,0 x 8,0



Marking	Ø x mm	Length mm	Clamping thickn. mm	Drill hole Ø mm
Blind rivet K14 - Al/E -	5.0 x	8.0	2.5 - 4.5	5.1
	5.0 x	10.0	4.5 - 6.0	5.1
	5.0 x	12.0	6.0 - 8.0	5.1
	5.0 x	18.0	12.0 - 14.0	5.1

2.5.3 EJOT® Blind Rivet

Aluminum (Al) rivet sleeve
Rivet mandrel made of high-grade steel
Secure connection

Area of Application

Blind rivets are used to fasten secondary components, e.g. slave profiles.

Blind rivet Al/E - 4,8 x 10

Marking	Ø x mm	Length mm	Clamping thickn. mm	Drill hole Ø mm
Blind rivet Al/E -	4.8 x	10.0	0.5 - 6.5	4.9
	4.8 x	15.0	4.5 - 11.0	4.9
	4.8 x	25.0	11.0 - 19.5	4.9

2.6 Installation and Building Tolerances

Adapter panels are required to accommodate building and installation tolerances.

The location of these panels in the facade is determined by the installation process and sequence.

Trim work, e.g. window and door frames, corner panels, joint profiles, etc., should be installed first. The panels are manufactured at the RHEINZINK system centre to precise dimensions.

Dimensional adjustments can be made on site by making minimum changes to the joint width. The performance of the system is not affected by this.

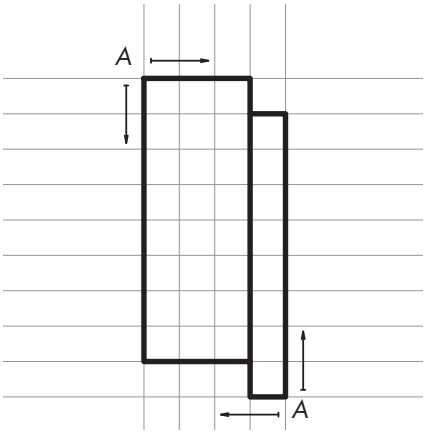
The panels are installed starting at Installation Point A. Adaptor panels are generally inserted before the next section.

Depending on the size of tolerance to be accommodated, one or two adaptor panels will be installed.

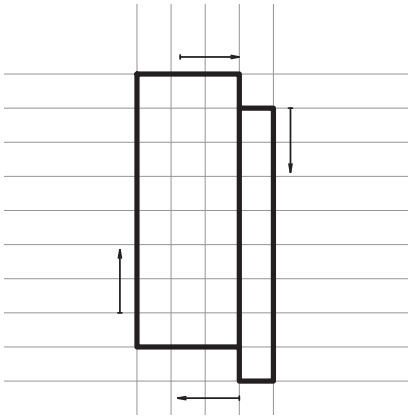
Note:

Tolerance adjustment using adaptor panels ≤ 15 mm difference is hardly noticeable.

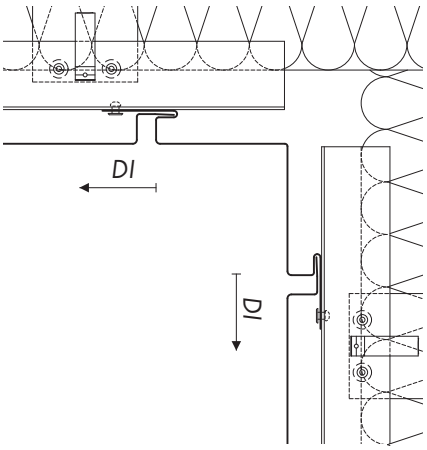
DI: direction of installation



A: start of installation

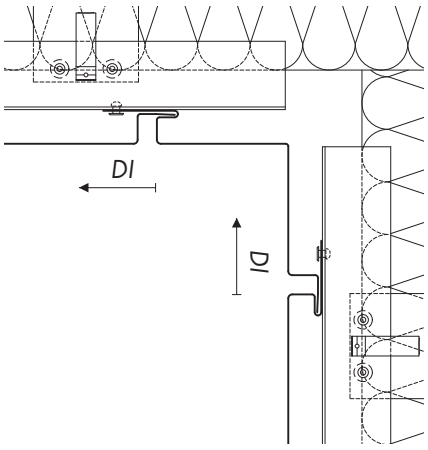


Installation can begin anywhere



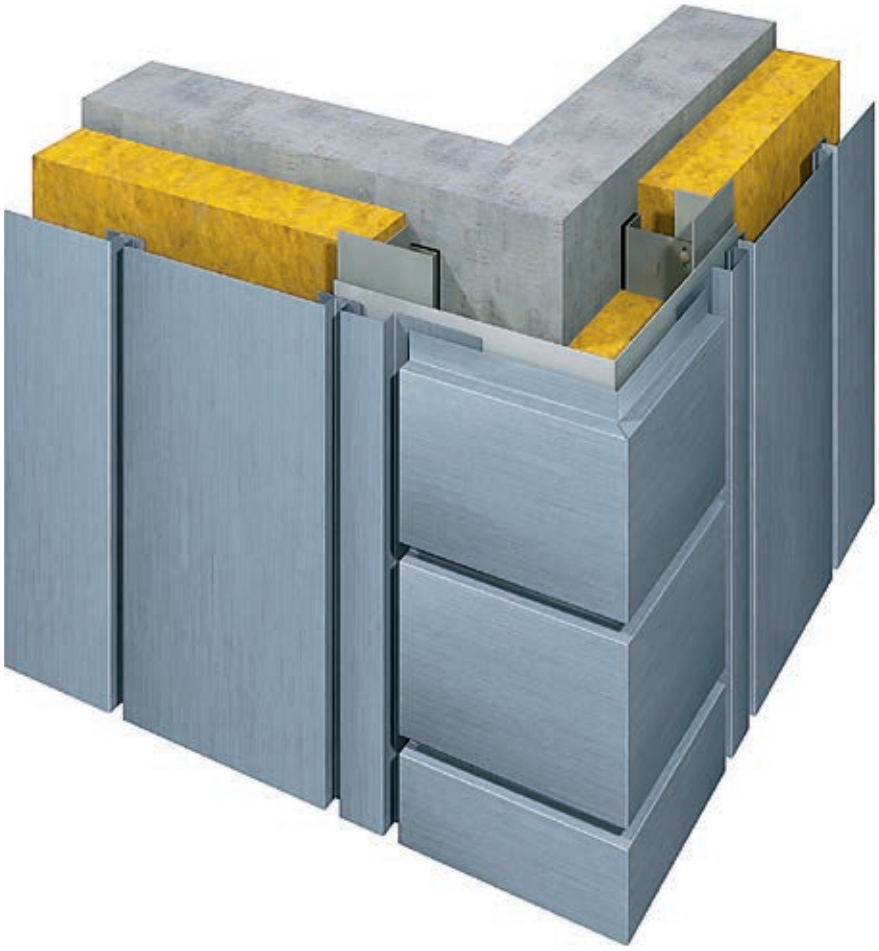
Example A:

The corner panel is installed first. Building tolerances are accommodated either by installing an adapter panel in the centre of the facade, or, next to the outside corner panel.



Example B:

The corner panel is part of the continuous installation sequence. Any tolerances that need to be adjusted at this point can be accommodated by the corner panel.



Profile group 1

Profile group 2

Profile group 3

2.7 Detail Concept

Detail design creates the lasting impression of the facade. Plan details or sections are required for most of the corners, reveals, as well as connections and terminations. These must be coordinated during detail design development. Two significant design variations will illustrate this.

Visible Width of the Building Profile or Section
The spectrum ranges from sharp-edged profiles to profiles that are several centimeters wide. Precise planning allows for the widths of all termination and frame profiles to be the same, or, to vary these in desired proportions.

Projection of Profiles
Depending on the detail design, the profiles either protrude from, or lie flush with the facade surface.

This overview illustrates three possible principles:

Profile Group 1
A relatively wide joint profile (visible width ca. 60 mm) is selected as the building profile, which is terminated flush with the facade surface.
Various facade systems, such as cassettes or panels, can be used to form the corner of the building.

Profile Group 2
A sharpe-edged profile will be installed flush with the curtain wall, so that the window frame design is not accentuated.

Profile Group 3
The jamb profile selected for this window surround can replicate the joint profile (see profile group 1) and is used as a flashing in conjunction with the window sill and lintel.

2.8 Details

2.8.1 General Instructions

Third Party Trades

Connections of facade claddings to third party trades are necessary and unavoidable in most cases to ensure impermeability. Because of the warranty obligations on the part of the craftsman, sub-contracting connections and fasteners to third party trades (e.g. windows), must always be approved by the project manager of the trade in question.
Please keep the location of the scaffold anchors in mind during planning/design.

Wall Structure

The layered construction is equal to a rear-ventilated metal facade. A solid brick/concrete wall or stud wall with sheathing serves as the supporting structure.

Substructure

See Chapter 2.4

Load Effect

In the case of two-dimensional cladding profiles (all panel types) that are only fastened on one side, flanged backfolds are required to provide additional reinforcement for all profiles in exposed building locations.

Installation Instructions

We will not go into installation details here, because, when it comes right down to it, these are strongly influenced by other trades when it comes to windows, structural steel construction, etc.
The installation processes must always be determined individually for each project, considering interfaces and
the sequence of installation.
Notable deviations from the rule will be pointed out for various details.

Drip Edges

Standards and regulations must be taken into consideration in the detail design, e.g. drip edges above rendered facades (dirt as a result of pollution).

Diagonal Installation

RHEINZINK-Reveal Panels can also be used for diagonal facade installation.
To a large extent, technical implementation of the design is commensurate with horizontal installation. Foldbacks must be fabricated on site.

2.8.2 Pictographs

Horizontal profiles (see chapter 2.10)
H1: outside corner
H2: inside corner
H3: window jamb

Vertical profiles (see chapter 2.11)
V1: base
V2: windowsill
V3: window lintel
V4: roof edge
V5: expansion joint

Variations

In some cases, variations for the same detail are depicted (e.g. window lintel with/without shade).
These are identified and include additional explanatory texts or drawings.

Applicability

The details and designs depicted here are suggestions, which have been implemented on various projects. Responsibility must be taken for decisions made on detail suggestions, taking into account applicable standards and regulations, as well as the stylistic intentions of the planner for the project.

Building height	Drip edge distance mm	Dripe edge dictance to rendering mm	Cover required*
h < 8	≥ 20	≥ 40	≥ 50
8 ≤ h ≤ 20	≥ 20	≥ 40	≥ 80
h > 20	≥ 20	≥ 40	≥ 100

Drip edge distances and overhang dimensions for copings and flashings.

* The overhang dimensions also apply on the roof side. If the roofing foil is routed to the front edge of the facade without interruption, 50 mm overhang generally apply independent from the building height.

2.9 Planning Grid

The Grid Principle in Facade Construction

A metal facade consists of components manufactured industrially with a high degree of precision. These components determine appearance through precise horizontal and vertical segmentation. Penetrations and terminations that are not matched/coordinated with the axis grid can have a disturbing effect.
The following instructions serve to assist proper planning of facade segmentation:

Principles

As a rule, a differentiation should be made between new construction and renovations when discussing grid problems. In the case of new construction, the facade grid can be coordinated or matched to the design; penetrations such as windows, ventilation piping, etc. are always secondary.
In the case of renovations, the penetrations (e.g. windows) cannot be displaced or removed, so the grid must be coordinated with the penetrations.
When deviating from the grid, the following principles apply:

- At terminations, one should begin or end with an entire module (X or Y)
- Dimensional differences of max. 15 mm (deviations from module X or Y, in the case of two-dimensional profiles), are not noticeable.
- Dimensional tolerances, which cannot be corrected (X or Y dimensional change) must be compensated either in the windowsill or roof edge area.
- Adjustments or displacements of height coordinates can only be implemented in the roof edge or base area.

The principles used to segment a facade are illustrated using the example of a vertical grid for horizontal cladding. This principle also applies to vertical facade cladding.

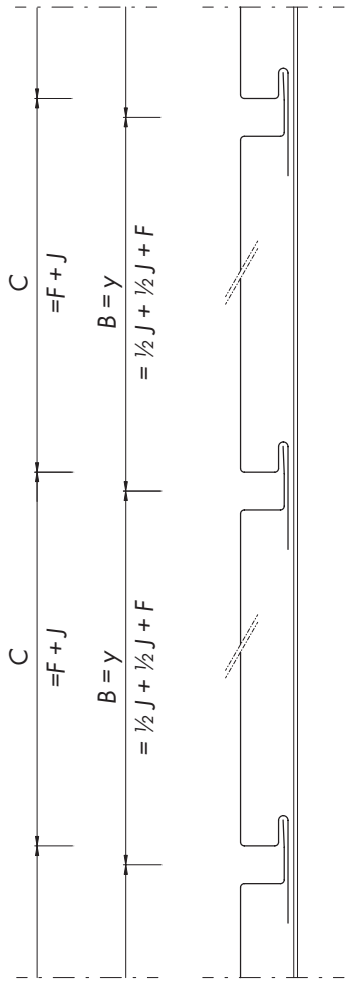
- B: bay width
- C: cover width
- J: joint width
- F: face width

Module Y

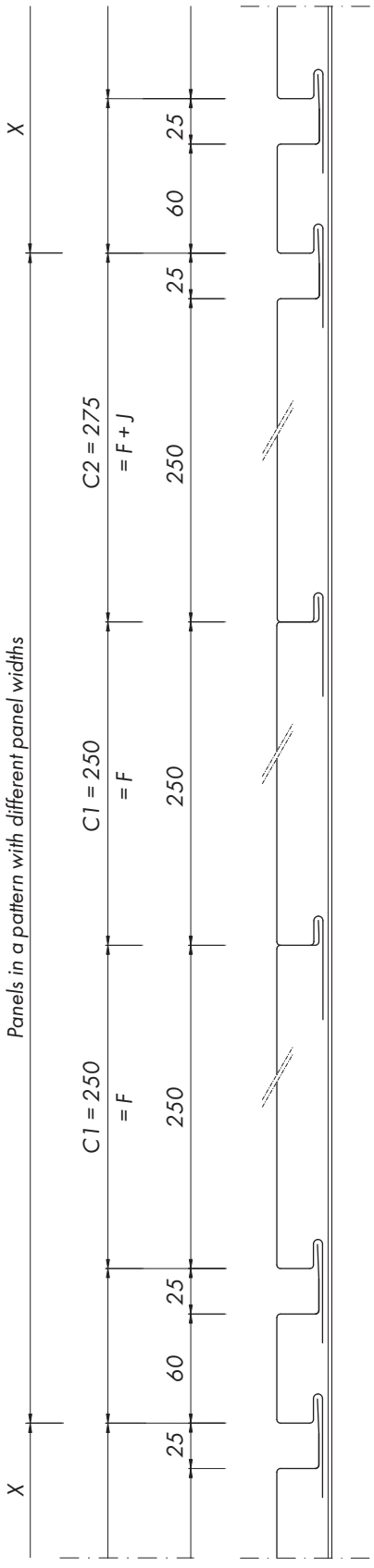
Y corresponds to the smallest segment of the facade, which is repeated again and again, e.g. panel width. The Y grid module determines the precise location of penetrations and terminations. In the case of reveal panels, the Y dimension is discretionary and is produced in cover widths of 200 mm to 333 mm, based on the project.
The bay width (Y) is formed using the visible surface of the panel and two half joints.
The cover width is established from the visible surface and the width of the joint.
The width of the reveal can vary from 0 to 30 mm and is determined by appropriate length of the "tongue".

Dimension X

All of the sections marked with X are an integral multiple of selected module Y and, as a rule, correspond to the cover width of a profile.

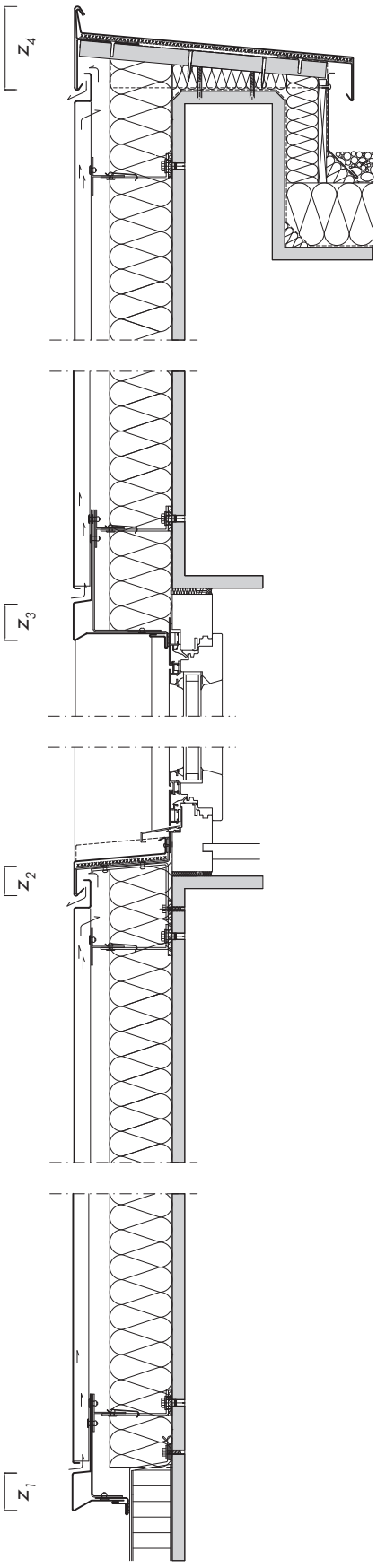


Repeated panel module



Combination of panels creating a module

PLANNING GRID



Position Z_4: Roof Edge

Grid for new Construction, respectively, Renovation

If the height coordinates of the roof edge do not fit into the prescribed grid selected, the following corrective options can be selected:

- change the roof edge profile/ incline
- raise or lower the parapet wall or the roof edge board.
- Changing the X or Y module

Position Z_3: Window Lintel
Position Z_2: Windowsill
Grid Development for new Construction

- Determine the openings of the building shell
- Determine the window frame profile
- Determine window location
- Determine profile geometry of window connections
- Develop design details within the grid

Grid Development for Renovations

- Determine window frame profile, for new/old window
- Determine window location, for new/old window
- Determine profile geometry of window connections
- Develop design details within the grid

If the location of the window or of the detail does not fit into the grid, the following corrective options can be selected:

- Change the profile geometry of the window lintel profile or the windowsill
- Adjust window height
- change the incline of the windowsill
- Change the X or Y module

Position Z_1: Base

Grid Development for new Construction, respectively, Renovation

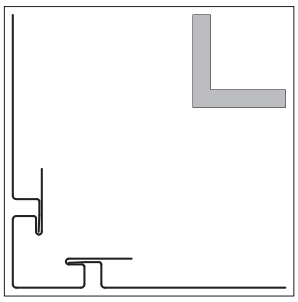
- Define potential deviations to the right or left
- Define profile geometry of base detail in accordance with corner profiles

If the location of the base does not fit into the grid, the following corrective options can be selected:

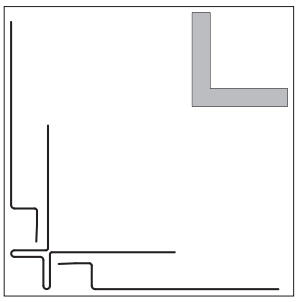
- Shift the facade connection to the right and/or left
- Change the profile geometry of the base profile
- Lower or raise the plinth masonry, if it exists or has been designed

2.10 Design, horizontal Sections

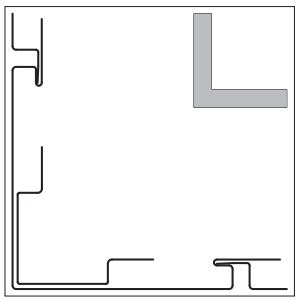
Detail H1: Outside corner



H1.1

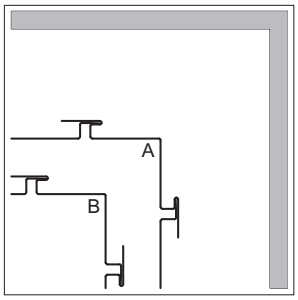


H1.2

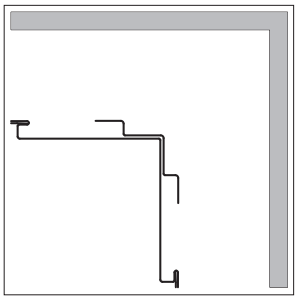


H1.3

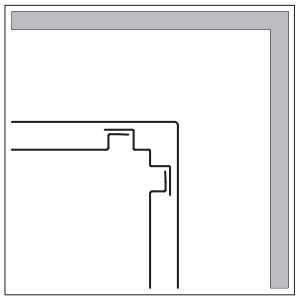
Detail H2: Inside corner



H2.1

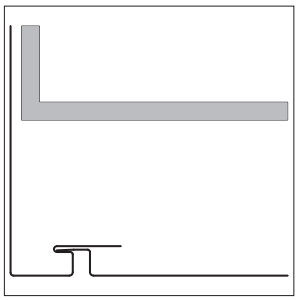


H2.2

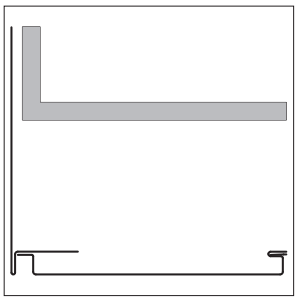


H2.3

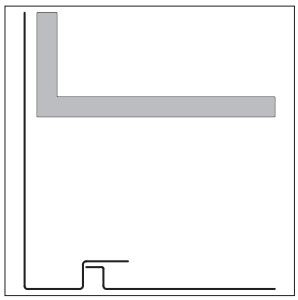
Detail H3: Window jamb



H3.1



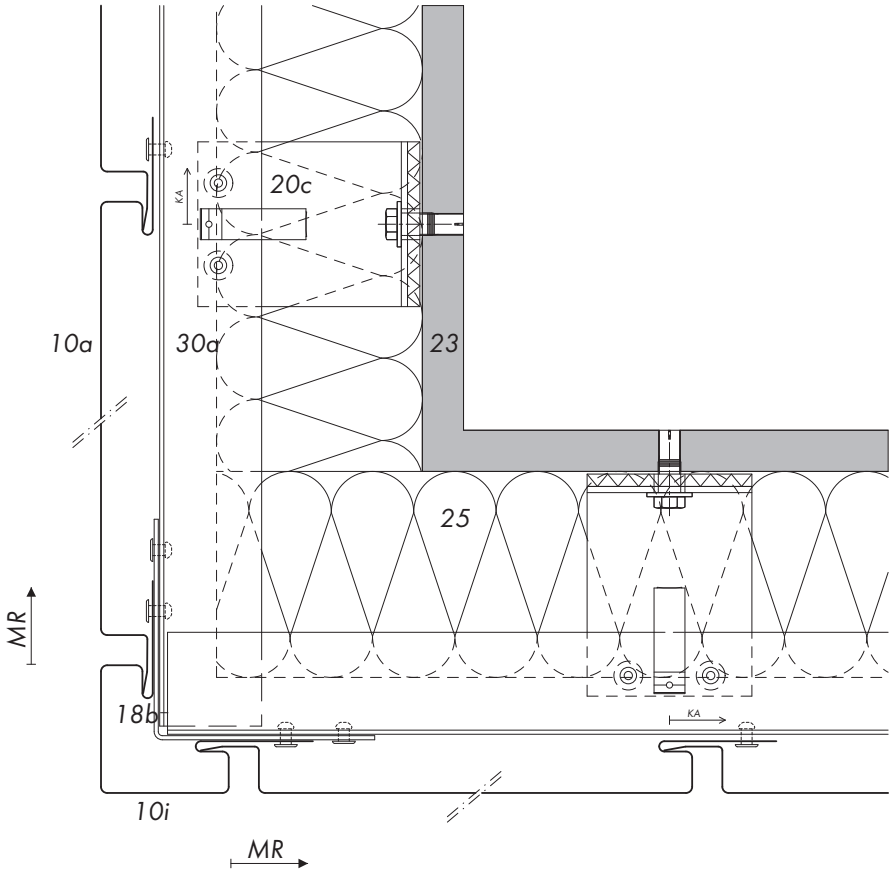
H3.2



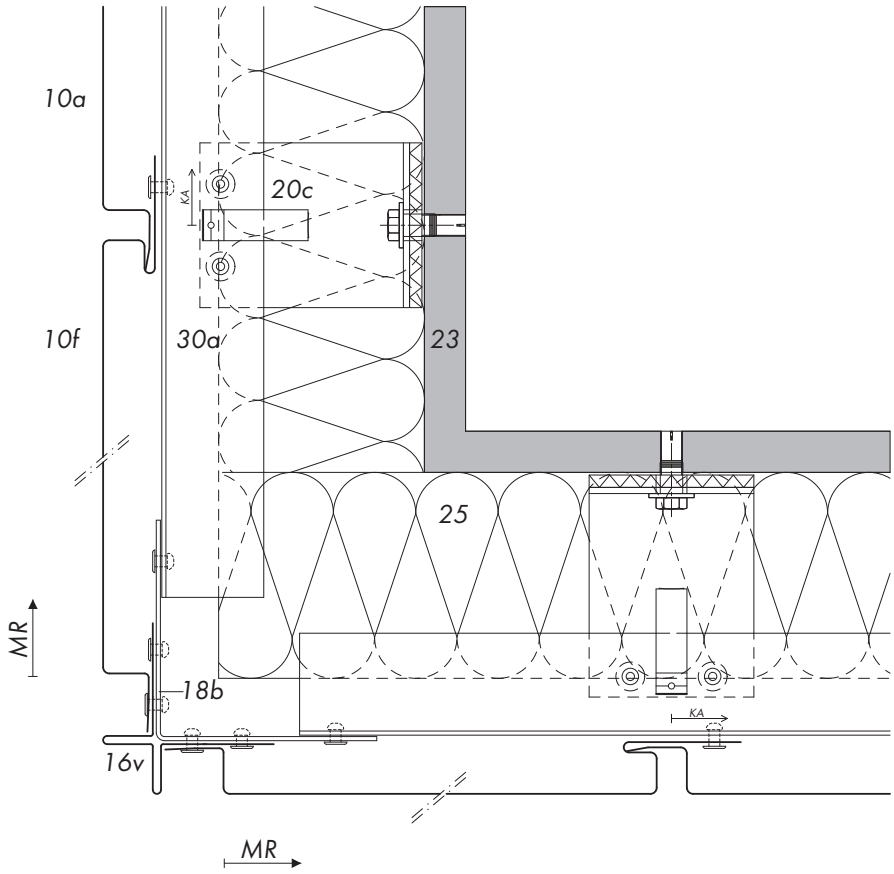
H3.3

DESIGN
DETAIL H1: OUTSIDE CORNER

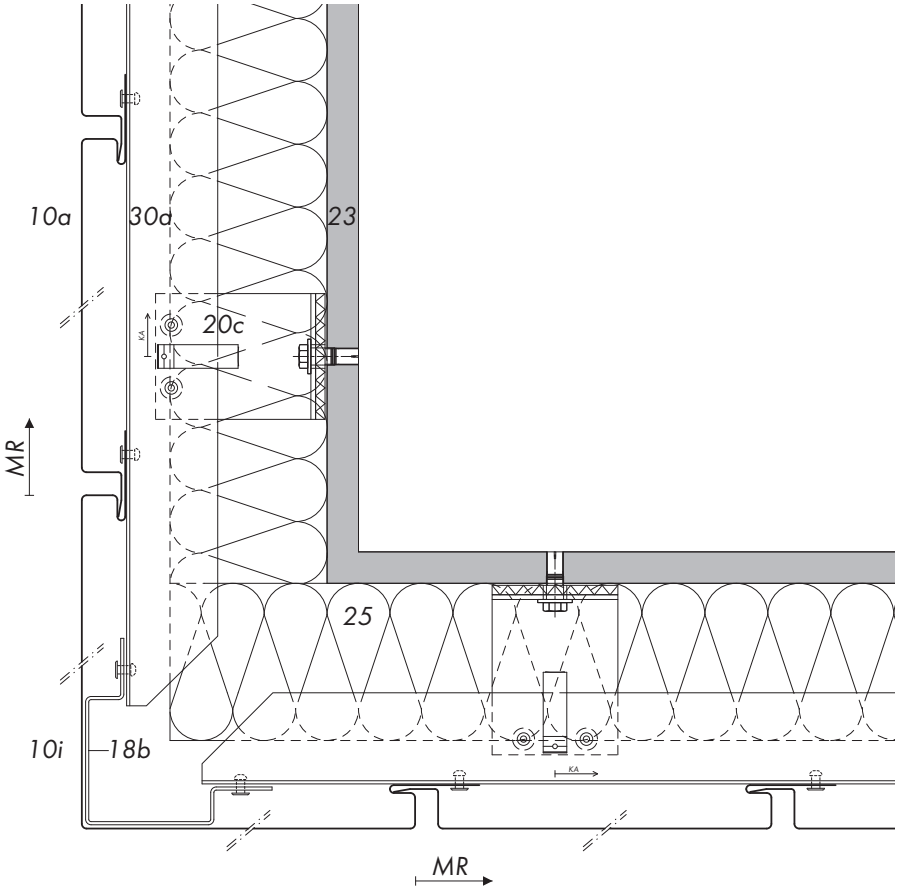
H1.1



H1.2



H1.3



Detail H1: Outside Corner

10 RHEINZINK-Reveal Panel SF 25
- a Standard panel
- f Fitting panel
- i Corner panel, groove-groove

16 RHEINZINK-Building Profile
- v Corner profile

18 Support Profile
- b Aluminium

20 Substructure
- c Bracket system, with thermal break*

23 Supporting Structure

25 Thermal Insulation

30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

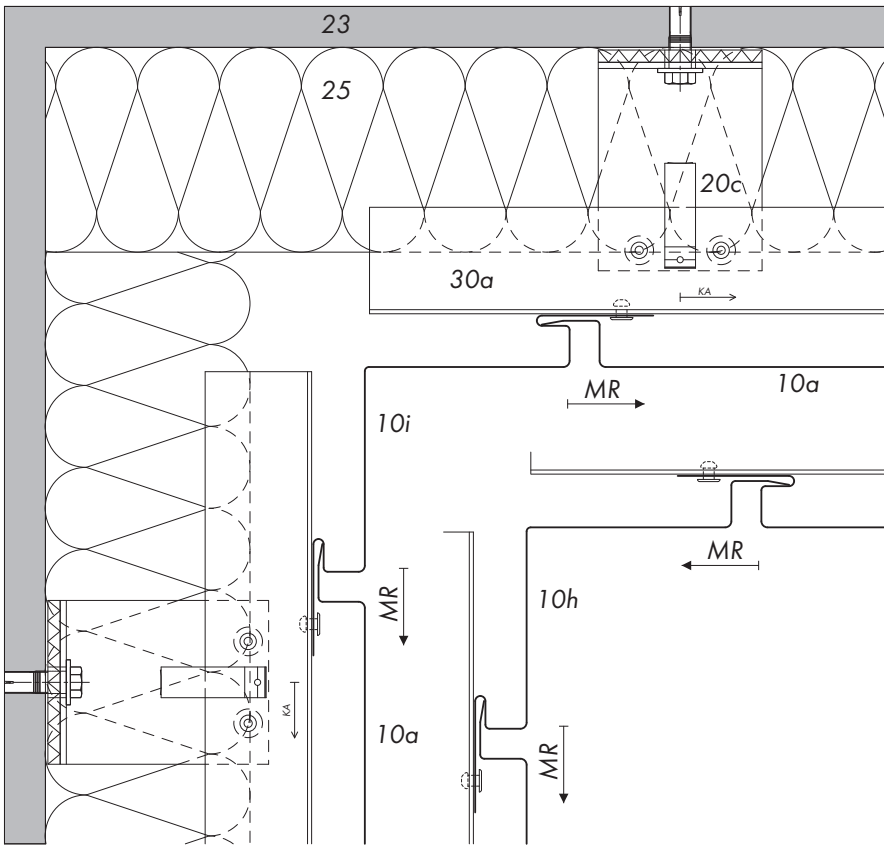
DI Direction of installation

CE Controlled expansion of substructure

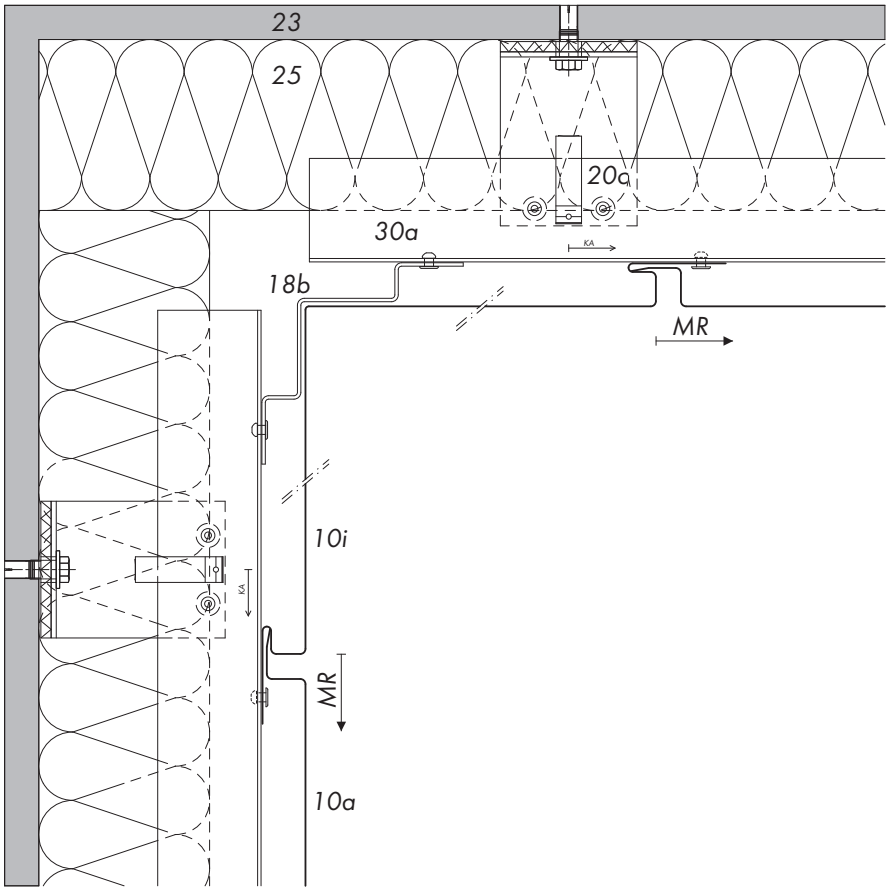
* Manufacturers' guidelines must be complied with

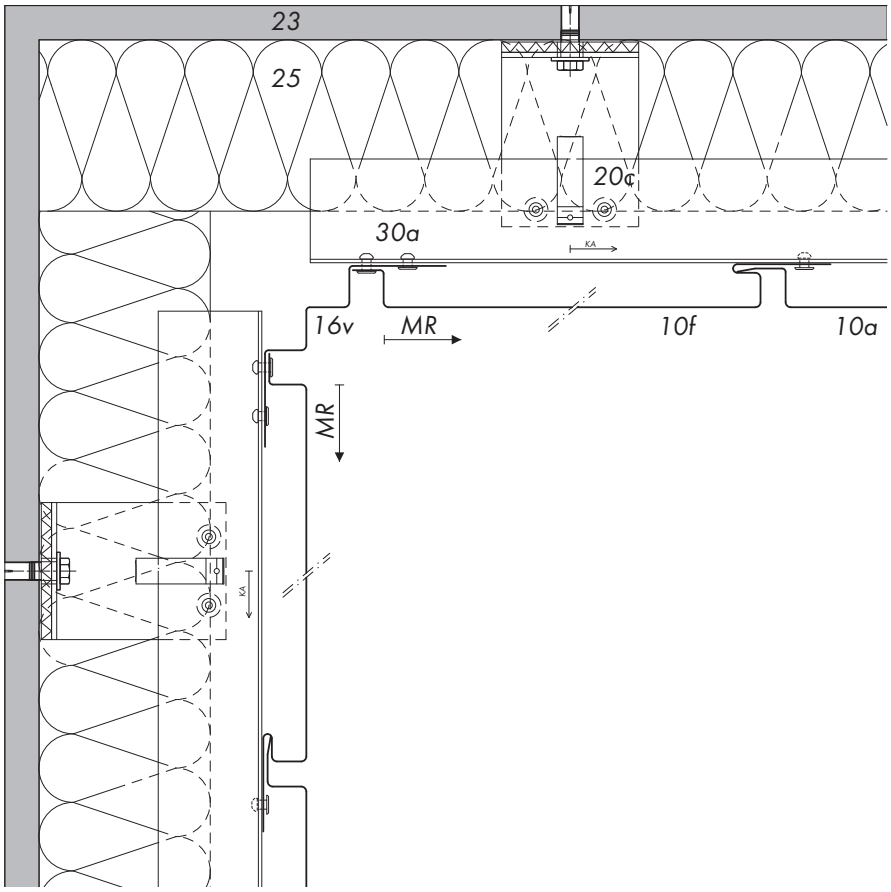
DESIGN
DETAIL H2: INSIDE CORNER

H2.1



H2.2





H2.3

Detail H2: Inside Corner

10 RHEINZINK-Reveal Panel SF 25
- a Standard panel
- f Fitting panel
- h Corner panel, groove-tongue
- i Corner panel, groove-groove

16 RHEINZINK-Building Profile
- v Corner profile

18 Support Profile
- b Aluminium

20 Substructure
- c Bracket system, with thermal break*

23 Supporting Structure

25 Thermal Insulation

30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

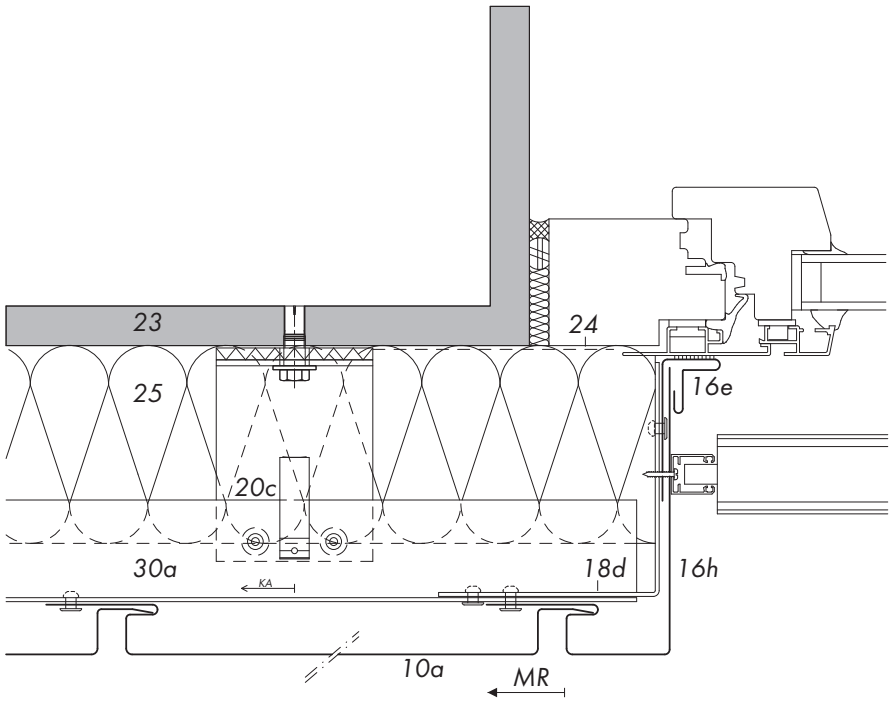
DI Direction of installation

CE Controlled expansion of substructure

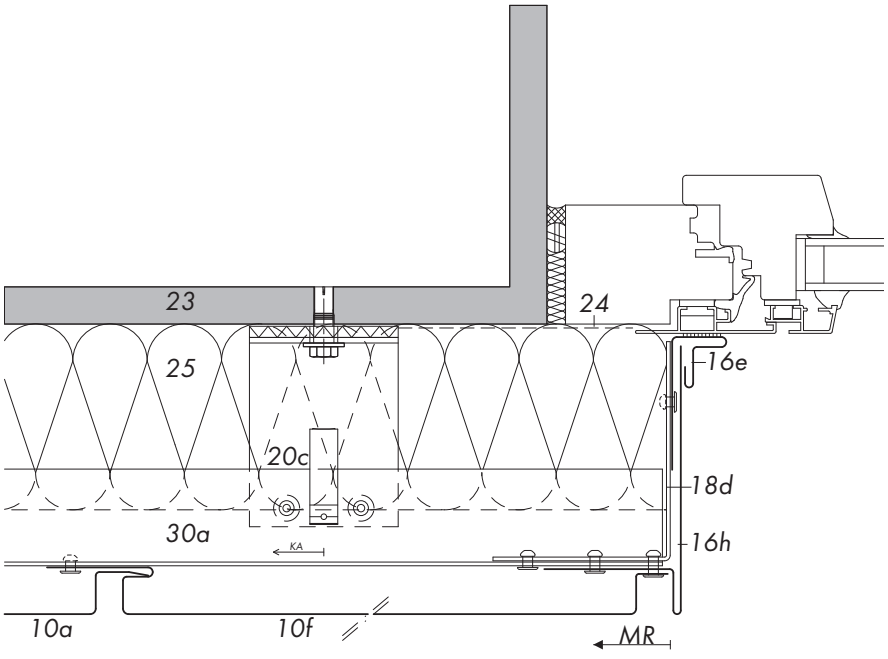
* Manufacturers' guidelines must be complied with

DESIGN
DETAIL H3: WINDOW JAMB

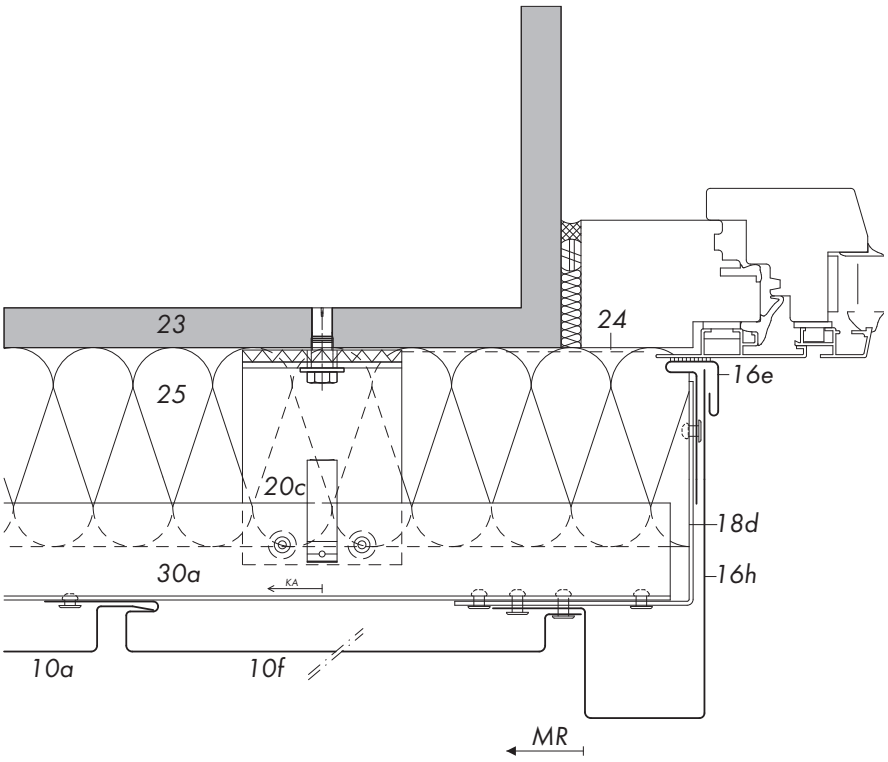
H3.1



H3.2



H3.3



Detail H3: Window jamb

10 RHEINZINK-Reveal Panel SF 25
- a Standard panel
- f Fitting panel

16 RHEINZINK-Building Profile
- e Receiver strip, with sealant tape
- h Jamb profile

18 Support Profile
- d Aluminium*

20 Substructure
- c Bracket system, with thermal break**

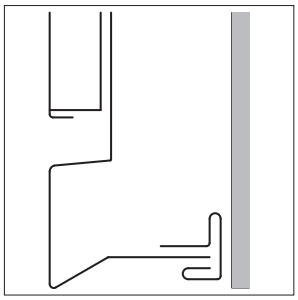
23 Supporting Structure
24 Window Foil
25 Thermal Insulation
30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

DI Direction of installation
CE Controlled expansion of substructure

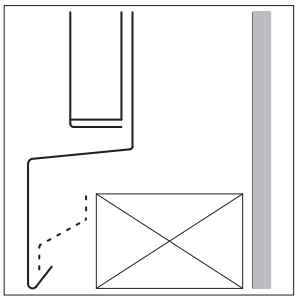
* If fire breaks are required use galvanised steel ≥ 1 mm
** Manufacturers' guidelines must be complied with

2.11 Design, vertical Sections

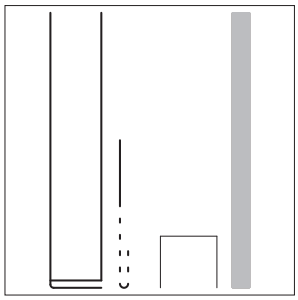
Detail V1: Base



V1.1

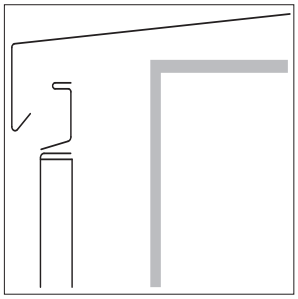


V1.2

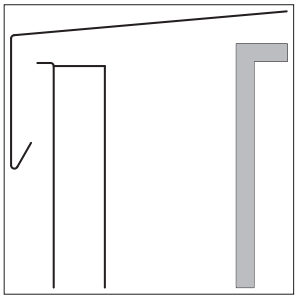


V1.3

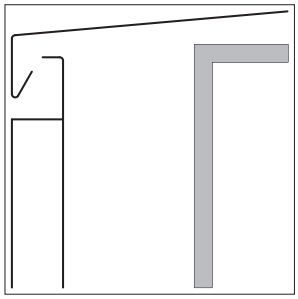
Detail V2: Window sill



V2.1

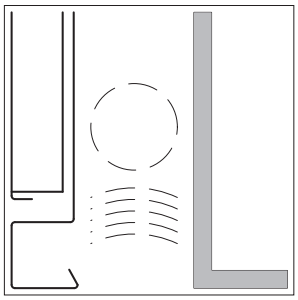


V2.2

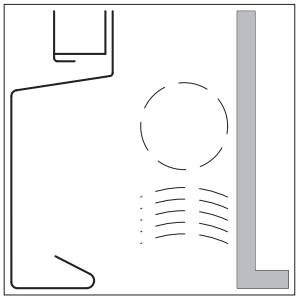


V2.3

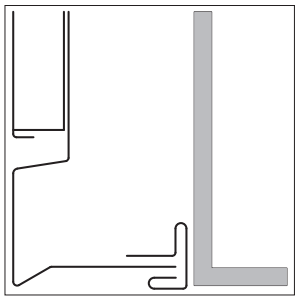
Detail V3: Window lintel



V3.1

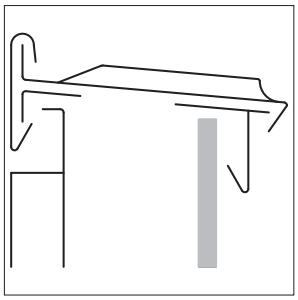


V3.2

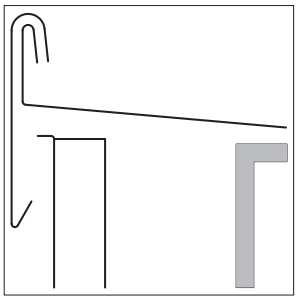


V3.3

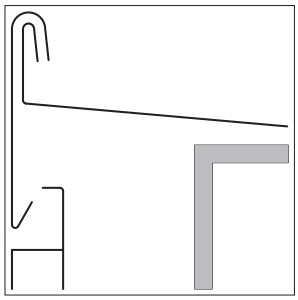
Detail V4: Two-part roof edge



V4.1

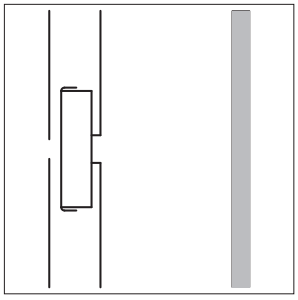


V4.2

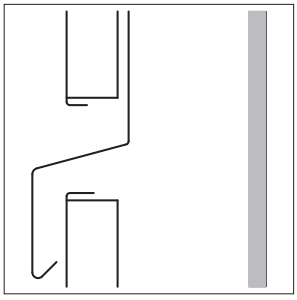


V4.3

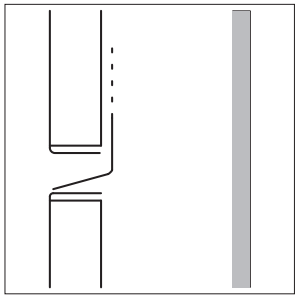
Detail V5: Expansion joint



V5.1



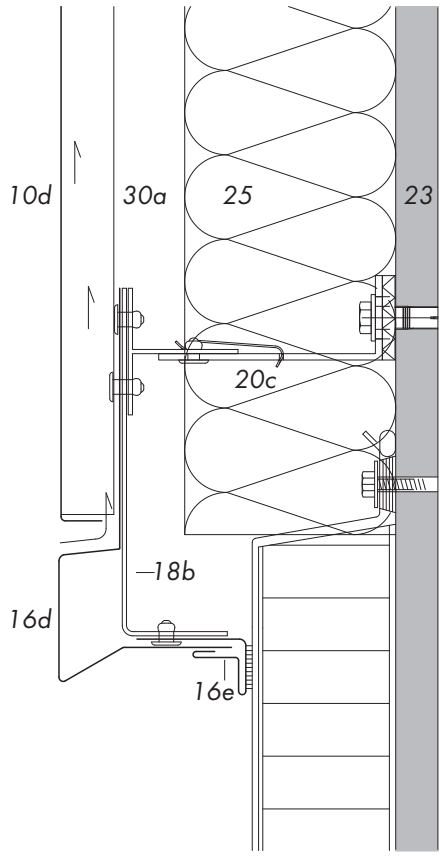
V5.2



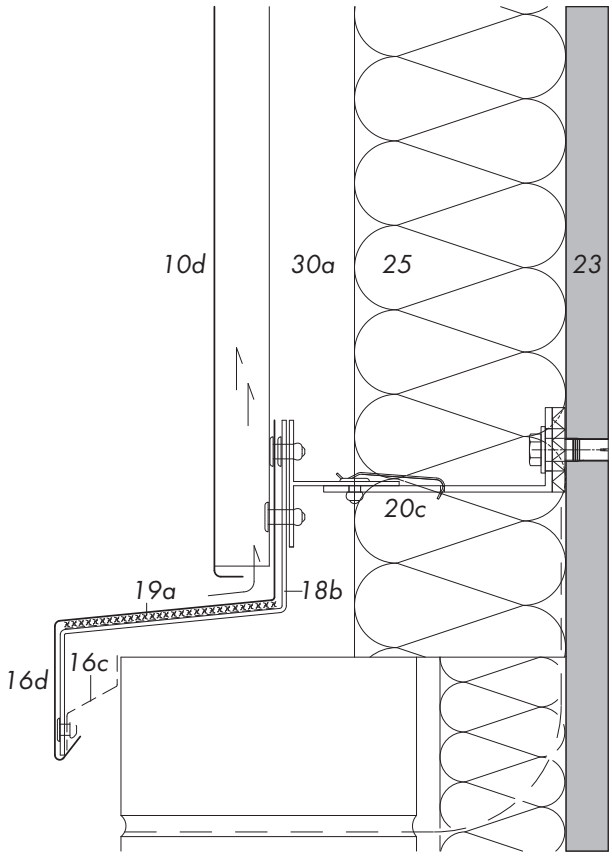
V5.3

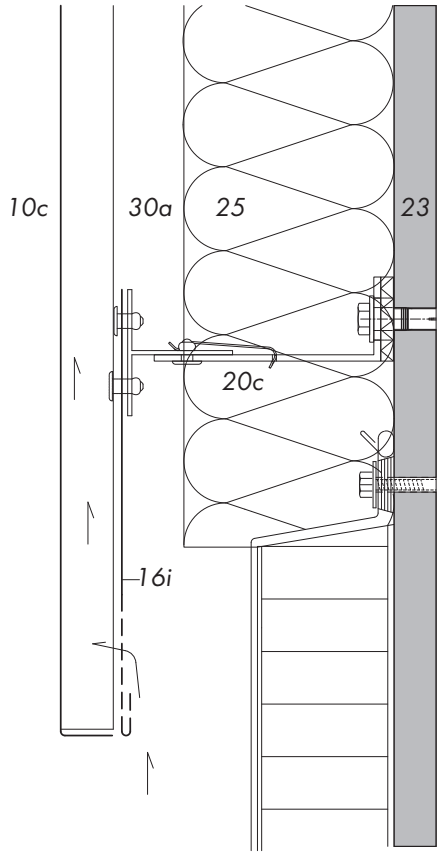
DESIGN
DETAIL V1: BASE

V1.1



V1.2





V1.3

Detail V1: Base

10 RHEINZINK-Reveal Panel SF 25
- c Standard panel, with stopend
- d Standard panel, with stopend short

16 RHEINZINK-Building Profile
- c Perforated strip
- d Base profile
- e Receiver strip, with sealant tape
- i Termination profile, partly perforated

18 Support Profile
- b Aluminium

19 Separating Layer
- a Structured underlay VAPOZINC
- ■ Alternative: glued to support profile over entire surface

20 Substructure
- c Bracket system, with thermal break*

23 Supporting Structure

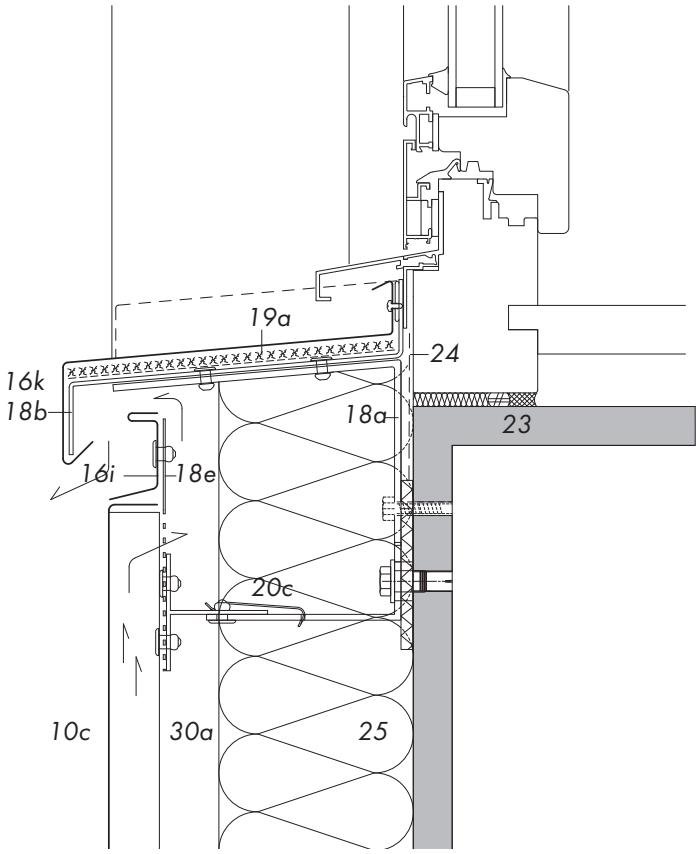
25 Thermal Insulation

30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

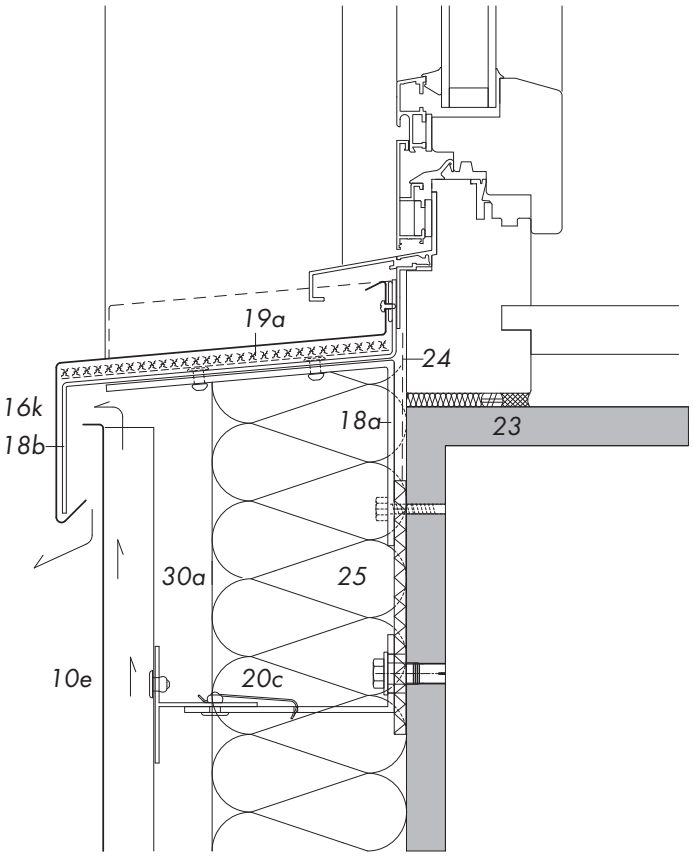
* Manufacturers' guidelines must be complied with

DESIGN
DETAIL V2: WINDOW SILL

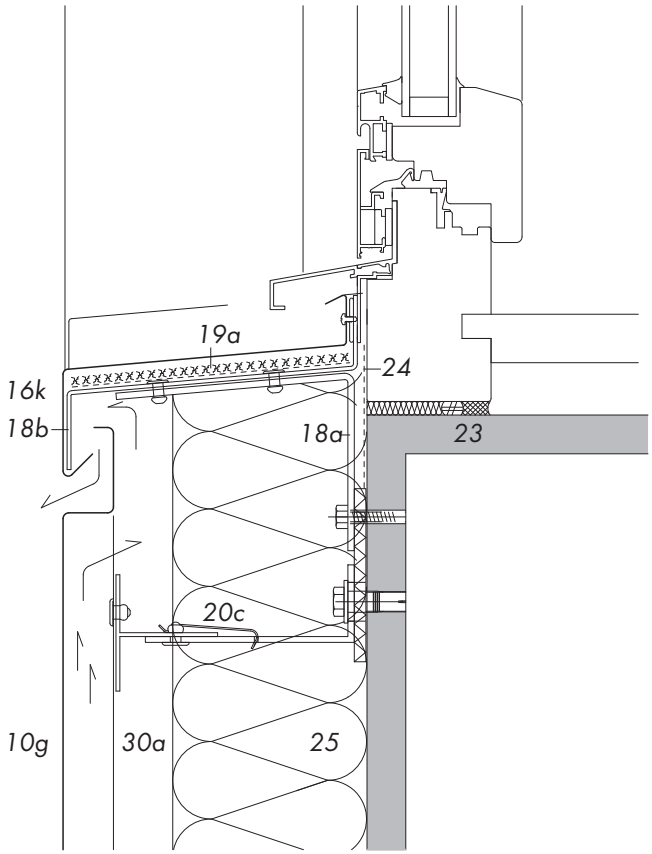
V2.1



V2.2



V2.3



Detail V2: Window sill

10 RHEINZINK-Reveal Panel SF 25
- c Standard panel, with stopend
- e Standard panel, with stopend short, outward-facing
- g Fitting panel, with bent up water drip

16 RHEINZINK-Building Profile
- i Connection/termination profile
- k Window sill coping

18 Support Profile
- a Galvanised steel, support angle with thermal break
- b Aluminium
- e Aluminium, partly perforated

19 Separating Layer
- a Structured underlay VAPOZINC
- ■ Alternative: glued to support profile over entire surface

20 Substructure
- c Bracket system, with thermal break*

23 Supporting Structure

24 Window Foil

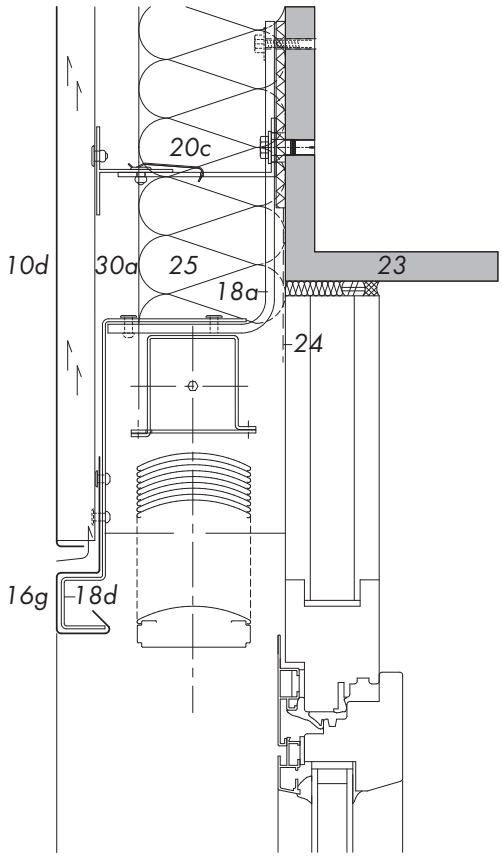
25 Thermal Insulation

30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

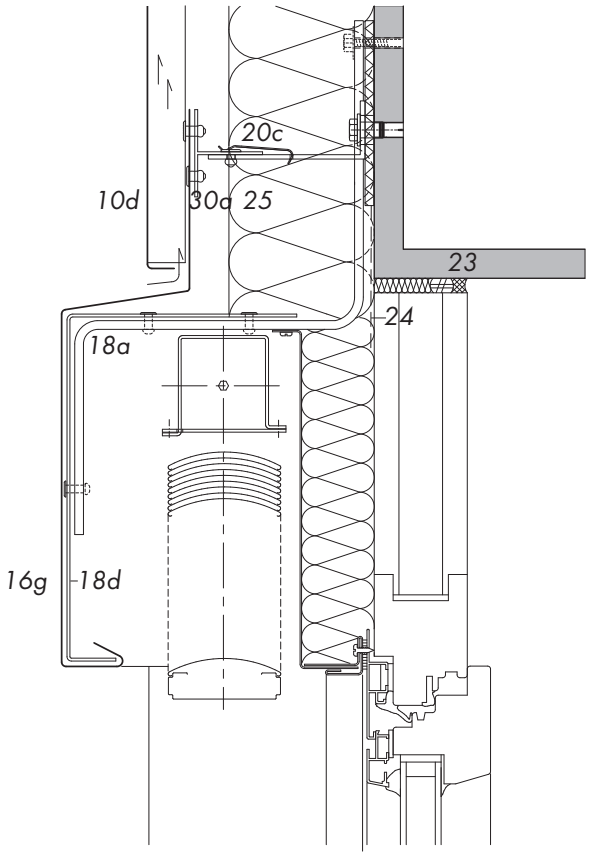
* Manufacturers' guidelines must be complied with

DESIGN
DETAIL V3: WINDOW LINTEL

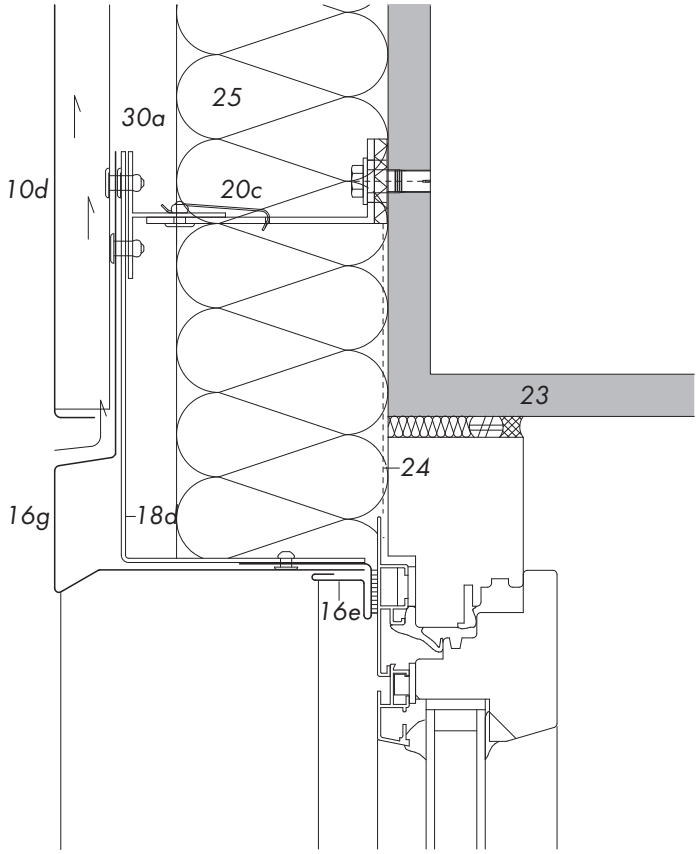
V3.1



V3.2



V3.3



Detail V3: Window lintel

10 RHEINZINK-Reveal Panel SF 25
- d Standard panel, with stopend short

16 RHEINZINK-Building Profile
- e Receiver strip, with sealant tape
- g Lintel profile

18 Support Profile
- a Galvanised steel, support profile with thermal break
- d Aluminium *

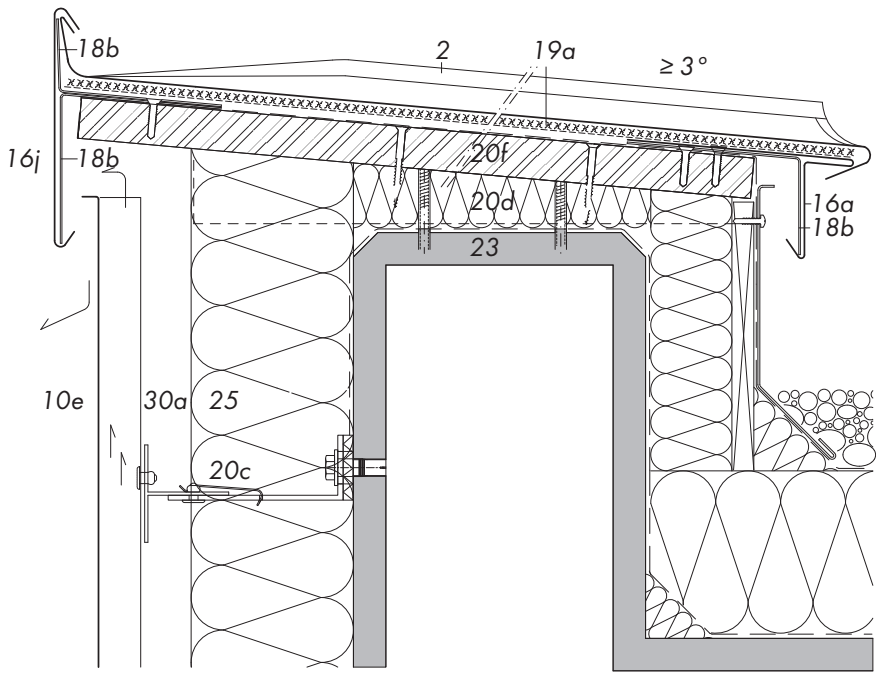
20 Substructure
- c Bracket system, with thermal break **

23 Supporting Structure
24 Window Foil
25 Thermal Insulation
30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

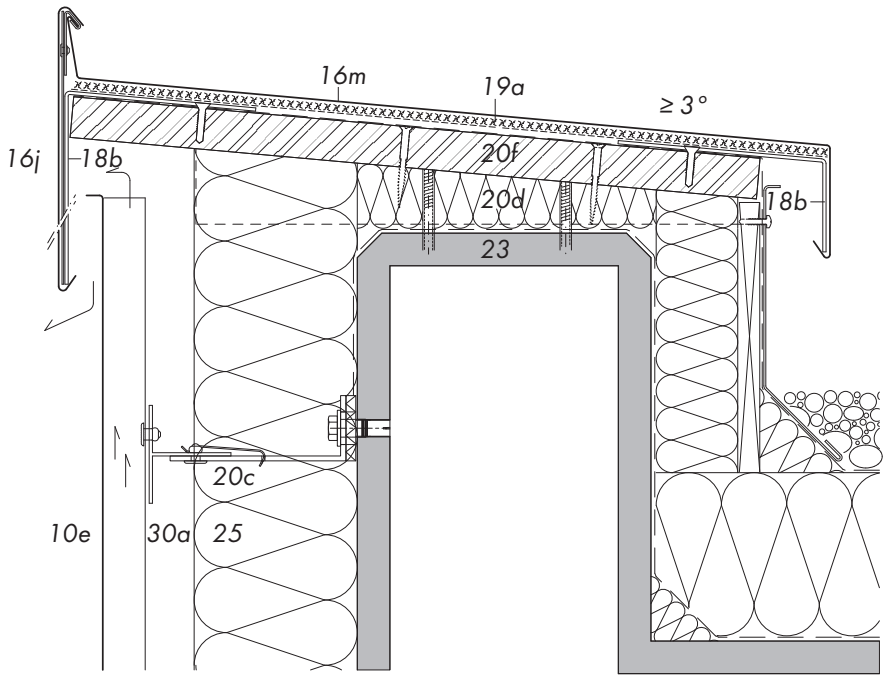
* If fire breaks are required use galvanized steel ≥ 1.0 mm.
** Manufacturers' guidelines must be complied with

DESIGN
DETAIL V4: TWO-PART ROOF EDGE

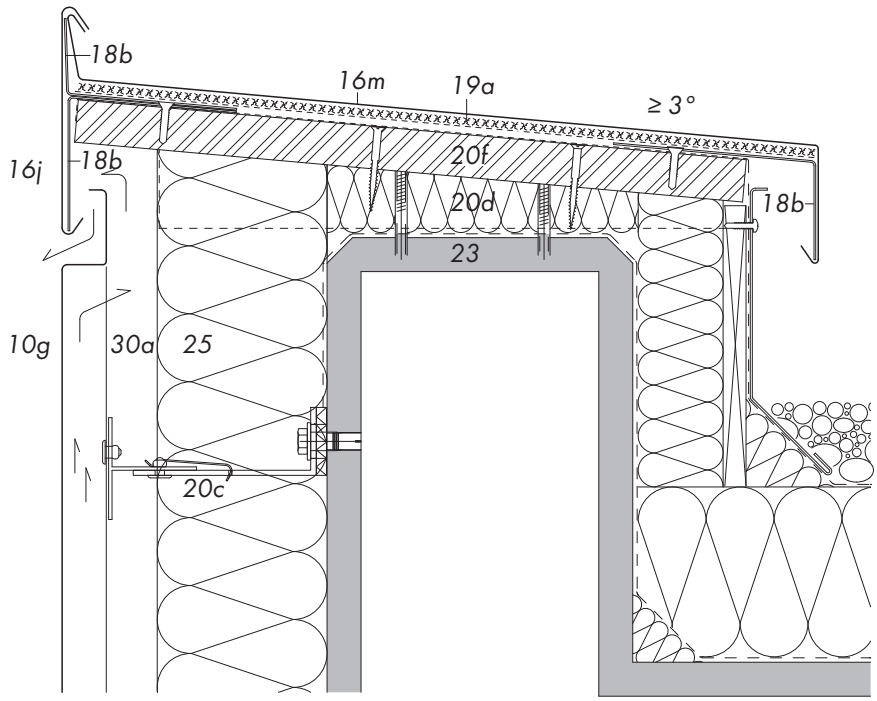
V4.1



V4.2



V4.3



Detail V4: Two-Part Roof Edge

2 RHEINZINK-Double Standing Seam
10 RHEINZINK-Reveal Panel SF 25
- e Standard panel, with stopend short, outward-facing
- g Fitting panel, with bent up water drip

16 RHEINZINK-Building Profile
- a Eaves flashing
- j Fascia profile
- m Wall coping

18 Support Profile
- b Aluminium

19 Separating Layer
- a Structured underlay VAPOZINC
- ■ Alternative: glued to support profile over entire surface

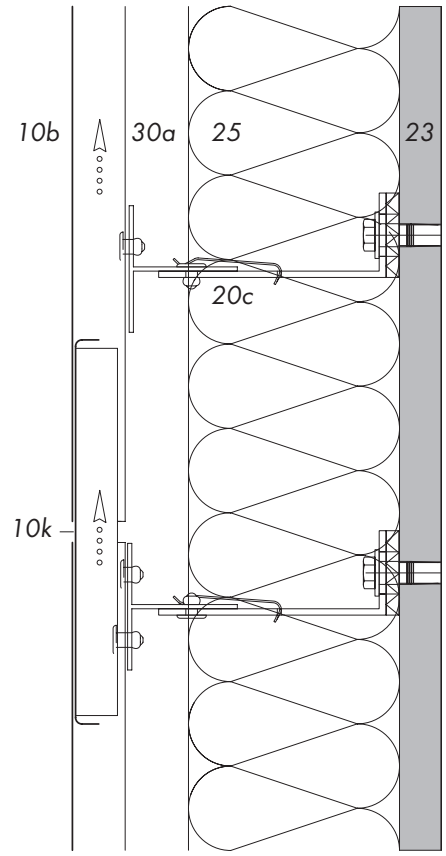
20 Substructure
- c Bracket system, with thermal break*
- d Wood, wedge board
- f OSB/veneer plywood sheathing, thickness min. 22 mm

23 Supporting Structure
25 Thermal Insulation
30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

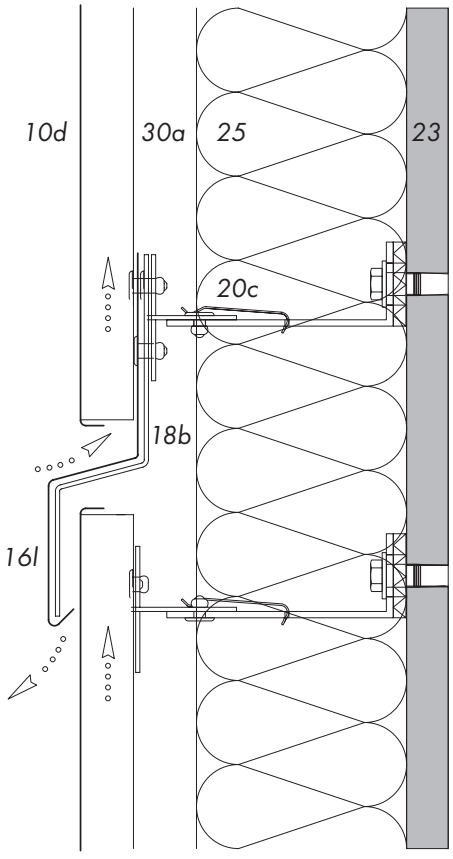
* Manufacturers' guidelines must be complied with

DESIGN
DETAIL V5: EXPANSION JOINT

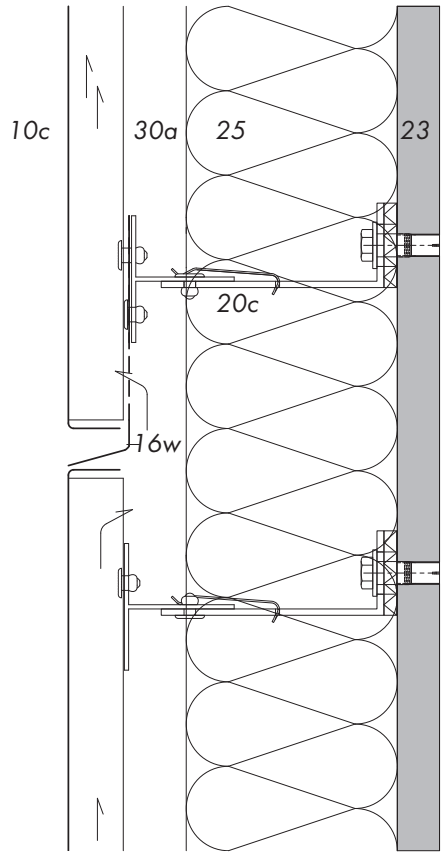
V5.1



V5.2



V5.3



Detail V5: Expansion Joint

10 RHEINZINK-Reveal Panel SF 25
- b Standard panel, without stopend
- c Standard panel, with stopend
- d Standard panel, with stopend short
- k Slave profile, with stopend

16 RHEINZINK-Building Profile
- l Cornice coping
- w Shadow gap profile, partly perforated

18 Support Profile
- b Aluminium

20 Substructure
- c Bracket system, with thermal break*

23 Supporting Structure

25 Thermal Insulation

30 Ventilated Air Space
- a Depth of air space ≥ 20 mm

* Manufacturers' guidelines must be complied with

REFERENCE PROJECTS

1

2

3

4

REFERENCE PROJECTS

5

6

For other project references, please see
www.rheinzink.com

Title: Yellow Square, Lyon, France
Architect: AFAA Architecture, Lyon, France
RHEINZINK-work done by:
Henri Germain, Chazay d' Azergues, France

1. GIS Building, Vejen, Denmark
Supervising Architect: Kærsgaard & Andersen, Aalborg, Denmark
Design Architect: C.F. Møller, Aarhus, Denmark
RHEINZINK-work done by:
Søren Østergaard A/S, Grindsted, Denmark

2./3. Columbarium, De Nieuwe Ooster Begraafplaats, Amsterdam, The Netherlands
Architect: Karres en Brands landschapsarchitecten, Hilversum, The Netherlands
RHEINZINK-work done by:
Loodgietersbedrijf C.J. Ockeloen v.o.f., Amsterdam, The Netherlands

4. Mt. Druitt Court House, Sydney, Australia
Architect: Perumal Pedavoli Pty Ltd., Ultimo, Australia
RHEINZINK-work done by:
Perumal Pedavoli Pty Ltd., Hornsby, Australia

5. Students Hall of Residence, Paris, France
Supervising Architect: DVVD ingénieurs architectes designers, Paris, France
Design Architect: l'AUC, Paris, France
RHEINZINK-work done by:
Antunes Façadier, Servon, France

6. Artemis Square, Brüssel, Belgium
Architect: De Borman + Gerard, Brussels, Belgium
RHEINZINK-work done by:
Platteau Dakwerken, Deurne, Belgium

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