



**RHEINZINK®**

THE COMPLETE SYSTEM FOR FAÇADE

RHEINZINK®-SP-LINE

DESIGN AND APPLICATION





## **Foreword**

This document is based on practical experience and our current status of knowledge in research and development, as well as recognized regulations and state-of-the-art technology.

This manual describes the application of the new complete system and is the basis for proper planning and application technology in standard cases. It is also a guideline for the designer and the company executing the work.

The detail drawings in the manual describe the standard details of the system and refer to the utilization of RHEINZINK®-original profiles.

Using these guidelines does not preclude independent thinking and responsibility. This applies particularly to applications in which this new type of façade cladding cannot be used or can only be used conditionally.

It is absolutely essential that the planner takes into account the impact of the system application, the local climatic conditions and the demands in terms of structural physics on the respective building.

Should you have any questions or suggestions, please do not hesitate to contact our Department of Application Engineering or one of our Service Centres.

We reserve the right to make changes which result from further development of the system.

Datteln, April 2009



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## RHEINZINK® MATERIAL

### 1. RHEINZINK® Material

#### 1.1 Alloy and quality

RHEINZINK® is titanium zinc, manufactured in accordance with DIN EN 988. RHEINZINK®-alloy consists of electrolytic high-grade pure zinc with a purity of 99.995% conforming to DIN EN 1179, alloyed with exact percentages of copper and titanium.

All RHEINZINK®-products are certified according to DIN EN ISO 9001:2000 and are subject to voluntary testing by the TÜV Rheinland Group (the relevant local inspection and monitoring body) according to the stringent requirements of the Quality Zinc Criteria Catalogue (available upon request, free of charge).

#### Ecological relevance

RHEINZINK® is a natural material, which meets today's strict ecological requirements in many areas. Environmental protection is evident in material production, transportation and installation.

State-of-the-art facilities, well thought-out logistics and favourable processing properties attest to this. Environmentally conscious handling is documented through the adoption of ISO 14001, tested and certified by the TÜV Rheinland Group.

Other significant aspects of the overall ecological assessment of zinc are:

- **Natural material**
- **Low energy requirement**
- **Durability**
- **An established cycle for valuable material resources**
- **High percentage of recycling**

Other significant properties of the raw material zinc:

- **Vital trace elements**
- **Extensive resources**

RHEINZINK® has been declared as an environmentally sound building product according to ISO 14025 Type 3 by the German Institute Construction and Environment. The environmental product declaration includes the entire life cycle of RHEINZINK®-products, from raw material extraction to production and use phase to recycling/disposal based on ecological balance according to ISO 14040 (declaration is available upon request, free of charge).

#### RHEINZINK® provides protection against electromagnetic radiation

There is a great deal of controversy in the public domain surrounding electromagnetic radiation. Within this context, the International Society for Electro-Smog Research (IGEF e.V.) has analyzed and determined the shielding properties of RHEINZINK®. The result: more than 99% of existing electro-magnetic radiation is shielded. Biological tests conducted on human beings confirm the technical values and indicate a harmonizing effect on the heart, circulation and nervous system – especially when grounded. Relaxation of the body increases.

#### Sustainable value

With a lifetime spanning several generations, RHEINZINK® is a material that sets standards. The 30-year guarantee underscores the durability of this 100% recyclable material. This creates a sense of additional security.



### 1.2 Material properties

- Density (spec. weight) 7,2 g/cm³
- Melting point 418 °C
- Recrystallisation temperature > 300 °C
- Coefficient of thermal expansion: in length as rolled: 2,2 mm/m x 100 K in transverse direction 1,7 mm/m x 100 K
- Modulus of elasticity ≥ 80000 N/mm²
- Non-magnetic
- Non-combustible

#### Mechanical properties (measured lengthwise)

#### RHEINZINK®-bright rolled, "preweathered<sup>pro</sup> blue-grey":

- 0,2 % (yield strength) ( $R_p$  0,2) 110 - 160 N/mm²
- Tensile strength ( $R_m$ ) 150 - 190 N/mm²
- Total elongation ( $A_{50}$ ) ≥ 35 %
- Vickers hardness (HV 3) ≥ 40

#### RHEINZINK®-"preweathered<sup>pro</sup> graphite-grey":

- 0,2 % (yield strength) ( $R_p$  0,2) ≥ 140 N/mm²
- Tensile strength ( $R_m$ ) ≥ 180 N/mm²
- Total elongation ( $A_{50}$ ) ≥ 50 %
- Vickers hardness (HV 3) ≥ 40

Material thickness (mm)	Weight (kg/m²)
0,70	5,04
0,80	5,76
1,00	7,20

RHEINZINK®-weight according to material thickness in kg/m² (numbers have been rounded)



\* recognized environmental symbol for building products put out by the Environmental Agency

### 1.3 RHEINZINK®-bright rolled, "preweathered<sup>pro</sup> blue-grey" and "preweathered<sup>pro</sup> graphite-grey"

Many years ago, RHEINZINK developed the "preweathered<sup>pro</sup> blue-grey" finish and, as of 2003, the "preweathered<sup>pro</sup> graphite-grey" finish, to be used specifically in areas where a "finished look" of the RHEINZINK®-surface is required when the product is delivered. The preweathering process used by RHEINZINK, which is unique worldwide, has two decisive benefits: the pickling lends the surface the look of a patina, which is normally formed by natural weathering over a period of many years. The natural surface properties are not affected by the pickling process – the surface can be soldered without any pre-treatment, nor is the natural formation of the protective layer impaired. Visual "aging with dignity" is not impeded in any way. Preweathering the material reduces the appearance of surface reflections, which are typical for thin sheet metal (the appearance of oil canning). As a result of increased demand, a large-scale production facility was put into operation in 1988, in which coils of up to 1000 mm wide (blue-grey) or 700 mm (graphite-grey) are cleaned and scoured. This process (pickling) results in an even colour, but it cannot be compared to a RAL-colour.

By undergoing a new organic surface treatment, this 100% recyclable material is largely protected from processing traces such as fingerprints. It also provides better protection during storage and transportation. This protective treatment allows for oil-free forming in roll formers.

#### Recommendation:

Oil-free cloth gloves should be used during processing and handling.

Generally speaking, in order to eliminate the possibility of visual disparities, material should be ordered from the same batch for a specific project. Surface disparities are purely visual and, as a rule, disappear bit by bit as the patina forms.

In order to protect the surface during transportation, storage and installation and from negative influences during construction, the façade systems are provided with a thin strippable plastic film.

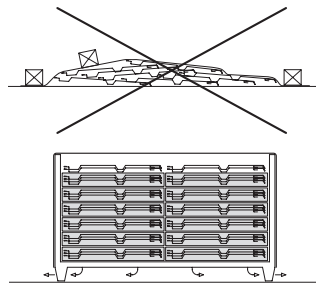
**This is a one-sided protective adhesive film, which should be removed at the end of each working day, immediately following installation.**

#### Note:

The RHEINZINK®-SP-Line is only available without a strippable film in RHEINZINK®-"preweathered<sup>pro</sup> blue-grey"

### 1.4 Storage and transportation

Always store RHEINZINK®-products in a dry-well-ventilated area.



Storage and transportation (diagram)

#### Note:

For optimum storage on the construction site, please ask construction management for a dry, well-ventilated space or use containers.

Do not place cover sheets directly on the material.

### 1.5 Surfaces

RHEINZINK®-"preweathered<sup>pro</sup>" is used for RHEINZINK®-façade systems. This material has a permanent surface coating. When the building is finished, it will have the classical-modern blue-grey/graphite-grey look, typical of zinc. RHEINZINK®-façades do not require cleaning or maintenance. As a result of natural weathering, the façade will get slightly darker with time.

### 1.6 Structural physics

- Weather protection
- Moisture regulation
- Thermal economy
- Rear ventilation
- Sound proofing/fire protection

The rear-ventilated façade 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 rain screen façade from the thermal insulation and supporting structure, the building is protected from the weather.

The 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 façade 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.



## RHEINZINK® MATERIAL

### 1.7 Windproofing

This does not apply to the rear-ventilated façade, as this component itself cannot be windproof.

The building must be windproof before the rear-ventilated façade 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.

### 1.8 Weather protection

Rear-ventilated façade cladding protects the supporting structure, the water-proofed thermal façade insulation, and the substructure, from the weather. Bracket-mounted rear-ventilated façades 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.

### 1.9 Moisture

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

### 1.10 Thermal economy

In order to understand the thermal economy of the rear-ventilated façade, 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.

#### 1.10.1 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.

#### 1.10.2 Summer thermal insulation

Summer thermal insulation should provide comfort: The amount of heat flowing from the outside to the inside should 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 façade, is that a large portion of the heat which streams onto the cladding is diverted through convective air exchange.

#### 1.10.3 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 façade. Thermal bridges can be reduced significantly by installing an insulating strip between the supporting structure and the substructure (Thermostopp). Proper installation of the insulation reduces the formation of thermal bridges.

### 1.11 Fire protection

Metal façades 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 façades, it may be necessary to install firestops.

### 1.12 Rear-ventilation

The free ventilation cavity between the façade cladding and the layer behind it must be at least 20 mm. Building tolerances and the slant of a 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.

#### 1.12.1 Air intake and exhaust openings

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

### 1.13 Soundproofing

To prove that a façade 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.



# PROFILE GEOMETRY

## 2. RHEINZINK®-SP-Line

### 2.1 Profil geometry

Material thickness  
s = 0,70 mm

Cover width of SP-Line s = 0,70 mm	Weight
350 mm	7,20 kg/m <sup>2</sup>

#### Application for outside areas

- Façades
- Gable wall claddings
- Soffits
- Rounded parapets
- Dormers
- Fascias

#### Fasteners

Basic panels are fastened with self-drilling screws that are fastened directly into the top of the panel. Additional brackets or clips are not required.

#### Technical data

Surface	RHEINZINK®- "preweathered <sup>pro</sup> blue-grey"
Coverage area with basic panel	1.05 m <sup>2</sup>
Profile length	3000 mm
Profile width	400 mm
Cover width	350 mm
Profile height	15 mm
Scope of delivery	3 panels per carton, incl. fasteners

#### Tolerances

According to Works Standard WN 21

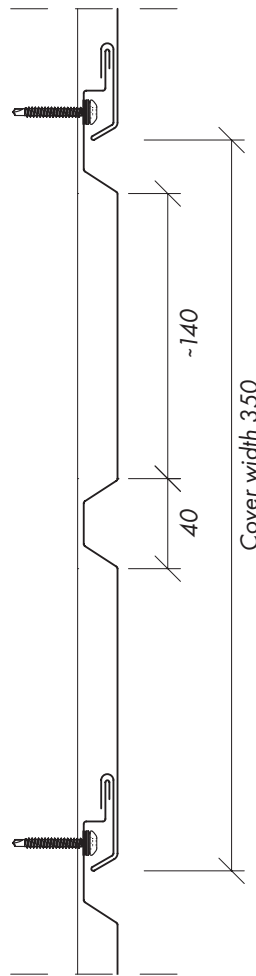
#### Installation

By "inserting" the next row of panels, the fasteners of the row beneath are concealed. Panel geometry ensures that the panels are inserted completely so that they cannot be leveraged out. Panel length is strictly limited to 3000 mm maximum due to thermal expansion and contraction.

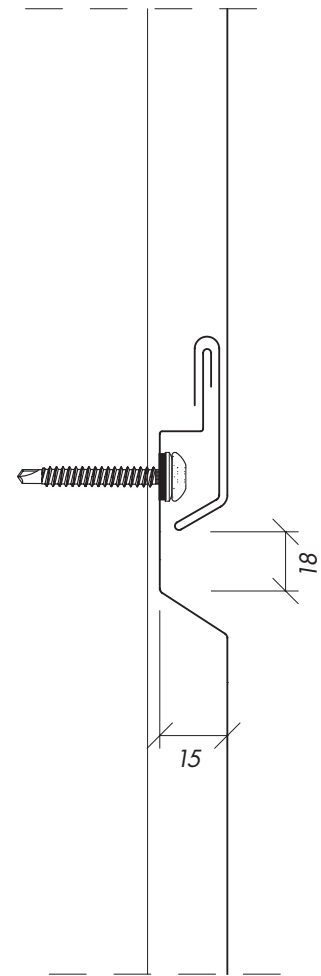
The connection profiles, e.g. lintel profiles and jamb profiles on windows and doors, corner profiles, joint profile spans, etc. are installed first.

Then the basic panels are cut and the reference surface is clad quickly and simply. Using suitable tools, the tradesman machines the individual lateral, longitudinal or diagonal profiles and

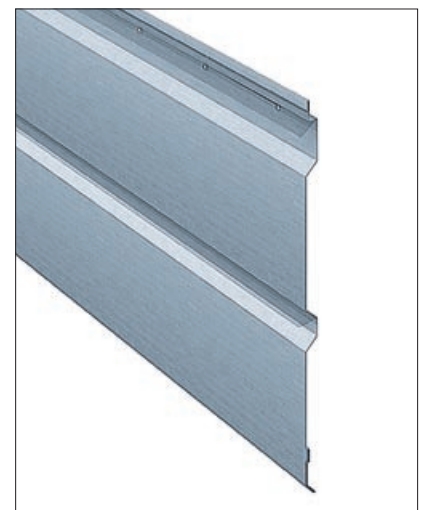
System profile, grid



System profile, illustration of panel connection



notches on the construction site. We recommend using a circular saw with a hack saw blade and stop bar to cut to length. A cordless screwdriver is required to fix the basic panels directly. The RPM is set so that the sealing washer of the screws, which are included in the delivery, are slightly compressed after installation. A suitable Torx-bit is included in the scope of delivery. Perforated profiles are fastened with self-drilling screws; connection profiles are fastened conventionally, using roofing nails.



## WIND LOAD

### 2.2 Span calculations




With the RHEINZINK®-SP-Line System, the designer has the option of realizing grid dimensions up to 3000 mm in length. The width of the basic panel is 350 mm.




The span tables for profiles are based on DIN 18807-2 for cross-section properties.

### Units for loads and strength

Permissible loads and force are given in kN/m<sup>2</sup> in the calculation tables. Deflection values in relation to span width are given for single-, double- or multiple-span conditions.

The following symbol is used in the illustration:

Single-span   
Double-span   
Multiple-span 

Span width in m	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20
permissible wind load in kN/m <sup>2</sup>								
	3.15	2.62	2.25	1.91	1.51	1.22	1.01	0.85
	2.20	1.83	1.57	1.37	1.22	1.10	1.00	0.92
	2.50	2.08	1.78	1.56	1.39	1.25	1.14	1.04

SP-Line basic profile, s = 0.70 mm

*Basis for calculation: Uniformly distributed load, including profile dead load*

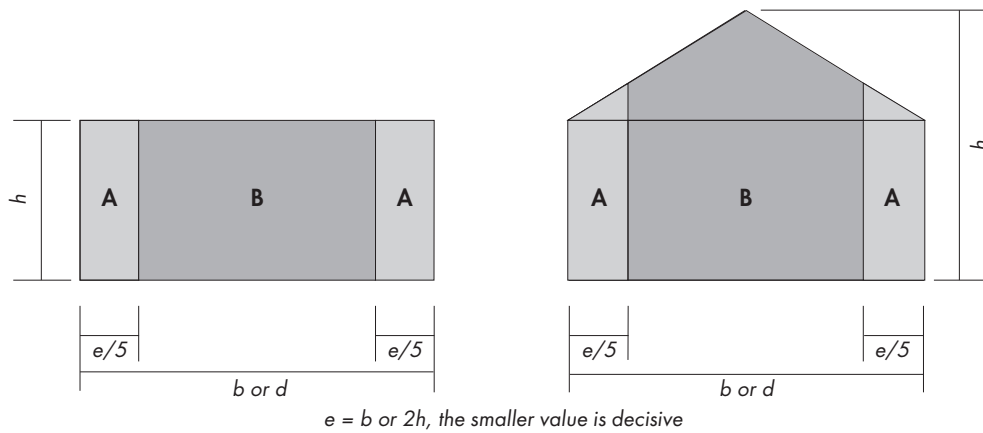
*Safety factor: 1.50*

*Yield limit: 100 N/mm<sup>2</sup>*

*Width of support profile: ≥ 60 mm*

*DIN 18807-2/experimental testing at the University of Karlsruhe, taking into account the DIN 18800-1 safety concept.*

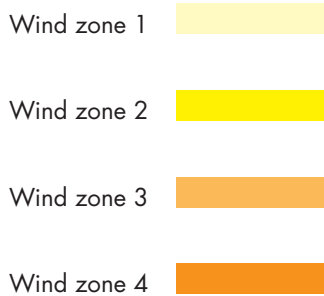
WIND LOAD



Simplified area segmentation for vertical walls with a building height of  $h \leq 10,0 \text{ m}$

Area segmentation	Wind zone 1		Wind zone 2		Wind zone 3	
	A	B	A	B	A	B
Wind load in $\text{kN/m}^2$	1.10	0.80	1.43	1.04	1.76	1.28
max. support span in m	1.10	1.20	0.70	1.00	0.60	0.80

Space between fasteners, resp. span of support for aluminium or wood substructures, support width  $\geq 60 \text{ mm}$ ,  
Fastening with EJOT® stainless steel screws SAPHIR Self-drilling screw JT4-FR-2-4,9\*35-E11



**Note:**

In order to calculate the space between fasteners/support in wind zone 4, static proof of stability pertaining to the project in question is required.

If the building project is on the border of two wind zones, please contact your RHEINZINK representative for the correct calculation.



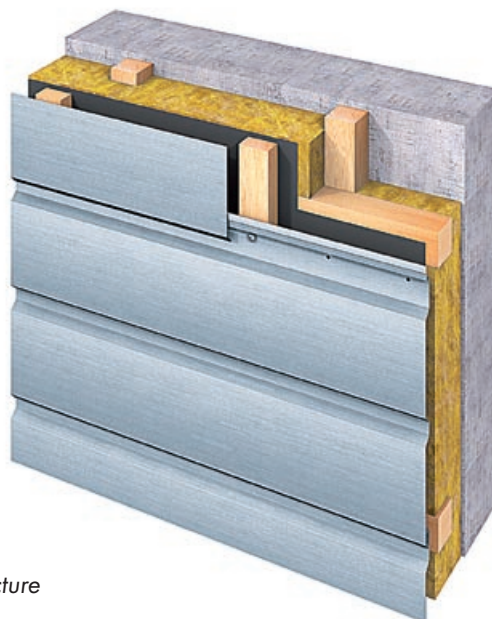
## SUBSTRUCTURES

### 2.3 Substructures

The design of the façade determines the layout of the substructure. In order to determine the position of the substructure with certainty, the façade must be designed prior to installation.

For applications such as façades, dormers, fascias and gable walls, a dry wood substructure with a support of  $\geq 60$  mm is suitable when installing the RHEINZINK®-SP-Line. For cladding large surfaces and multi-storey façades, substructures made up of two-part or multi-part aluminium metal systems (2 mm thick) are best. These systems allow for problem-free equalization of building tolerances.

If the basic panel protrudes more than 300 mm, additional support is required.



Multi-part wood substructure



Two-part aluminium substructure

### 2.4 Fasteners

Basic panels are fastened with self-drilling screws that are fastened directly into the top of the panel. By "inserting" the next row of panels, the fasteners of the row beneath are concealed. They guarantee long-term function capability of the system and are included in the scope of delivery, along with the suitable Torx-bit.

Fasteners in the substructure must be at least 10 mm from the edge.

**EJOT® SAPHIR stainless steel self-drilling screw JT4-FR-2-4,9\***

#### Area of application

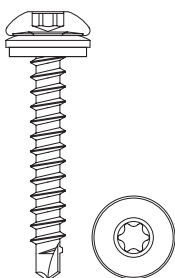
Use self-drilling screws to fasten

- aluminium profile sheets
  - façade sheets
- to
- wood substructures
  - aluminium substructures 2,0 mm

#### Properties

- A2 stainless steel
- Stainless steel sealing washer
- Sealing washer, securely connected
- Thread according to DIN 7998

Marking	Ø x mm	Length mm	Drill capacity $t_1 + t_{II}$ mm	Clamping thickness mm	Drive
* JT4-FR-2-4,9	4,8	35	2,0	30	TORX® T25



**EJOT®**

## CONNECTION PRINCIPLES

## 2.5 Connection principles

## 2.5.1 Horizontal longitudinal connection – vertical joint

Facade cladding is designed as a multi-span system using overlapping vertical joint profiles. The ends of the panel are inserted laterally into the joint profile and thus concealed. The use of vertical joints reinforces the vertical segmentation of the façade, facilitates efficient area installation and functions as a design component.

**Note:****Functioning principle of connection profiles**

Vertical joints and outside/inside corner profiles are equipped with butt joints at the plant so that each individual profile can be connected with a 10 mm joint without any difficulty.

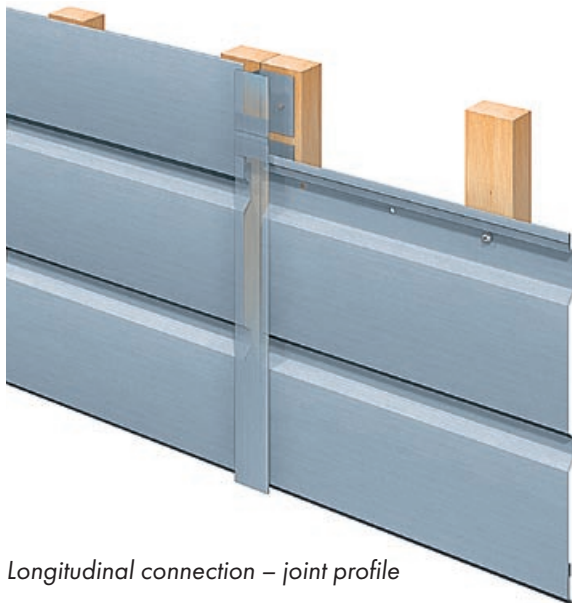
## 2.5.2 Longitudinal connection – slave profile

Alternatively, a longitudinal connection of the basic panels is created using a slave profile. The result: an aesthetically pleasing reserved joint design, which underscores the horizontal or vertical orientation of the panels. The slave profile is always fastened on one side of the panel with an adhesive strip, which has been mounted at the plant. It is underlapping when used with horizontal cladding and overlapping when used with vertical cladding.

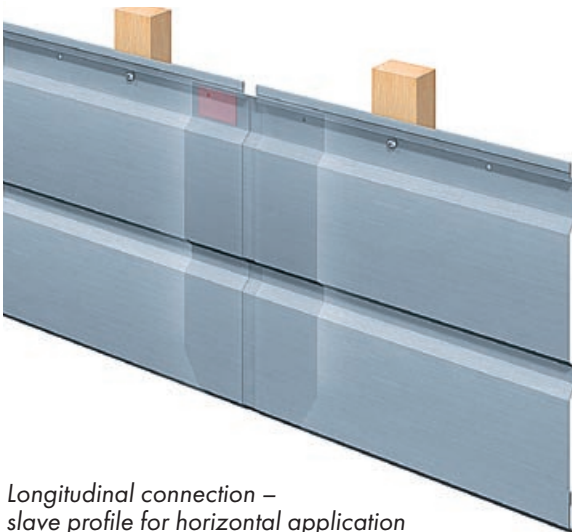
The slave profiles are 15-20 mm wide.

## 2.5.3 Vertical longitudinal connection – cornice profile

Using a cornice profile for vertical cladding produces a horizontally structured façade image. The vertically installed basic profiles are restricted by horizontally running cornice profiles – a design element that underscores horizontal segmentation.



*Longitudinal connection – joint profile*



*Longitudinal connection – slave profile for horizontal application*



*Longitudinal connection – slave profile for vertical application*



*Longitudinal connection – cornice profile*



## DESIGN OPTIONS

### 2.6 Design options

The RHEINZINK®-SP-Line is a complete system made of RHEINZINK®-“preweathered<sup>pro</sup> blue-grey”. It opens up diverse design options within the framework of façade structuring and can be installed both horizontally and vertically.

In so doing, panels are inserted one into the other, then fastened with self-drilling screws.

Versatile connection profiles allow the tradesperson to realize detail solutions efficiently and economically.

It is the details that characterize and sustain façade design. Special profiles are used for corners, reveals, as well as connections and terminations. The RHEINZINK®-SP-Line consists of pre-fabricated, coordinated connection profiles that facilitate and secure detail design. This is realized using the “insert and cover” principle.

#### 2.6.1 Design options for horizontal application

##### **Mirror cladding, even segmentation of butt joints**

The seam will be implemented with a slave profile that corresponds to the geometry of the panel. Aesthetically speaking, it is a very conservative joint design. The horizontal orientation of the panels is strongly emphasized.

##### **“Random structure”**

Staggered vertical joints make the façades come to life. The 3 m long basic panels are installed without ends and cut where the cladding surface ends. The end of the panel is used in the next row of panels as the starter panel. The result is scrap-free installation.

##### **Installation with vertical joints**

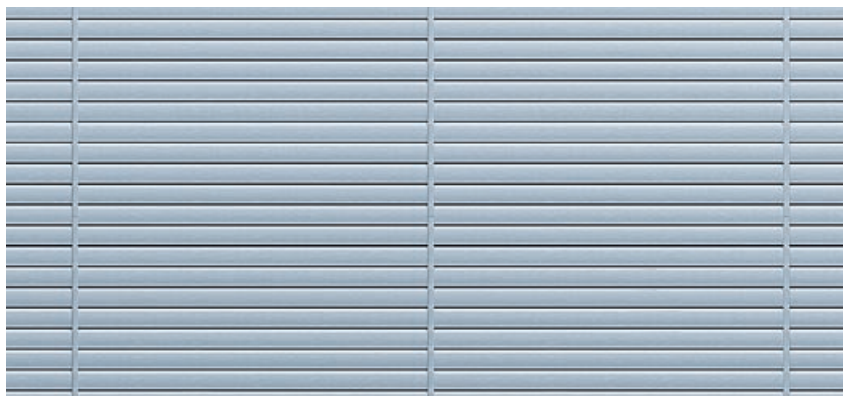
A clear vertical segmentation of the horizontal design emerges. The combination of window reveal – and vertical joints allows for unique design options.



*Mirror cladding*



*Random structure*



*Installation using vertical profiles*

## DESIGN OPTIONS



*Random structure*

### 2.6.2 Design options for vertical application

#### **“Random structure”**

The staggered butt joints make the façades come to life. The “random structure” provides for scrap-free installation without end.

#### **Installation with cornice profiles**

Horizontal segmentation of vertical façade cladding is achieved by using the cornice profile. The combination of a lintel profile for windows and doors with the cornice profile, allows for unique design possibilities



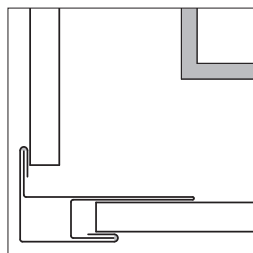
*Installation with cornice profiles*



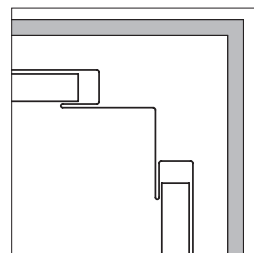
OVERVIEW  
HORIZONTAL DESIGN APPLICATION

**2.7 SP-Line design,  
horizontal application**

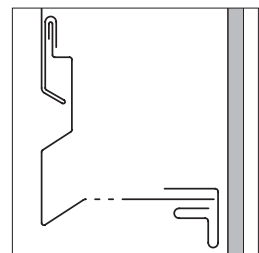
- 2.7.1 Detail H1: Outside corner profile  
Page 18
- 2.7.2 Detail H2: Inside corner profile  
Page 19
- 2.7.3 Detail H3: Base profile  
Page 20
- 2.7.4 Detail H4: Vertical joint profile  
Page 21
- 2.7.5 Detail H5: Lintel profile  
Page 22
- 2.7.6 Detail H6: Jamb profile  
Page 23
- 2.7.7 Detail H7: Termination profile  
Page 24
- 2.7.8 Detail H8: Plug-in profile  
Page 25



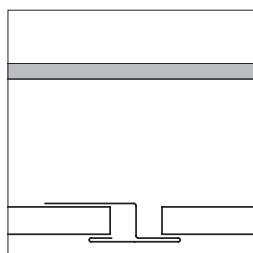
H1



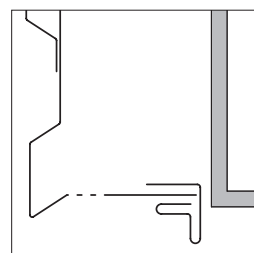
H2



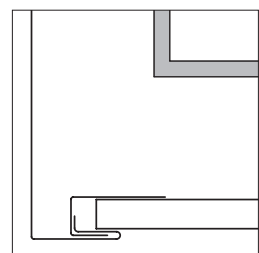
H3



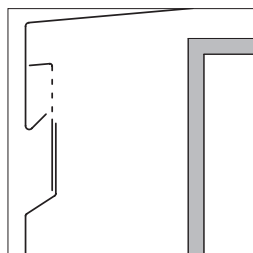
H4



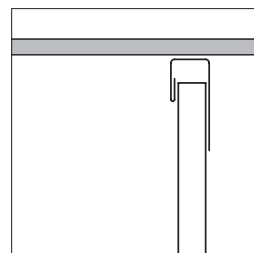
H5



H6

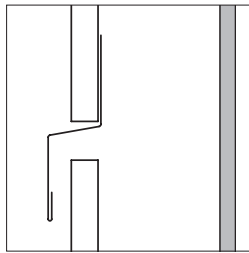


H7

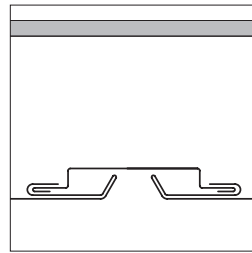


H8

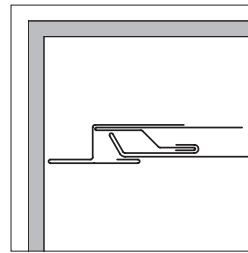
OVERVIEW  
VERTICAL DESIGN APPLICATION



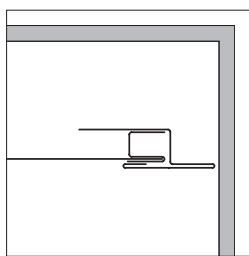
V1



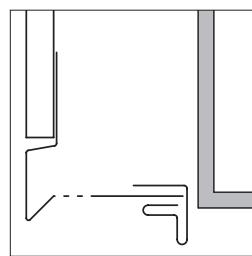
V2



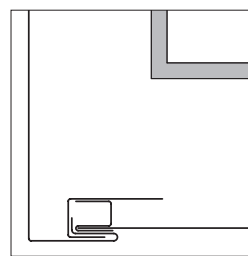
V3



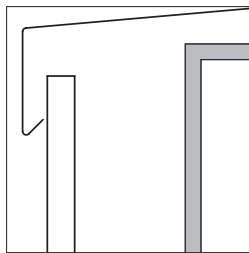
V4



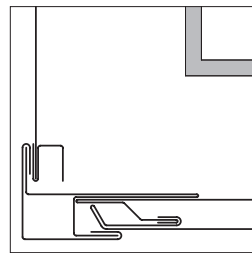
V5



V6



V7

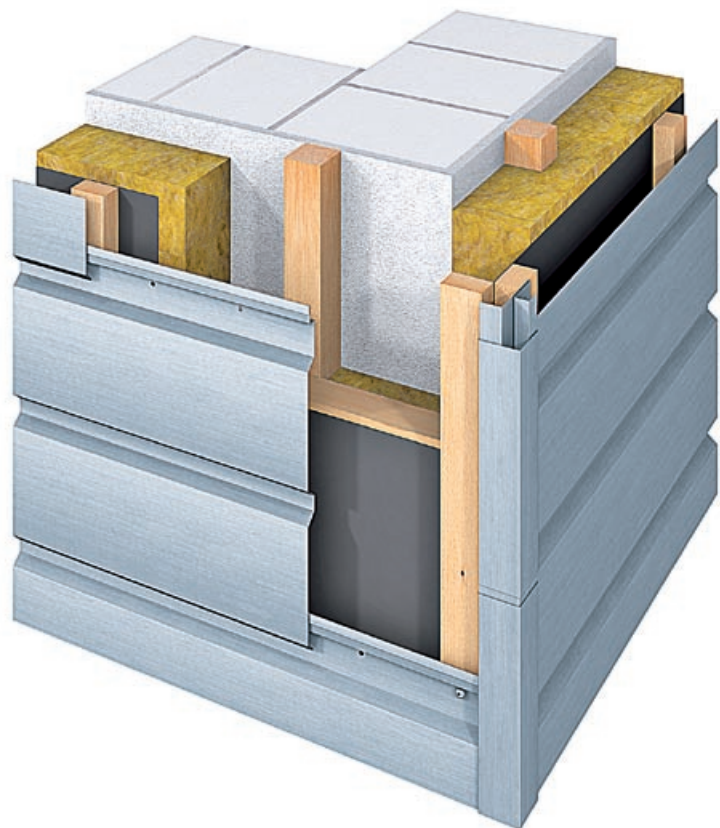
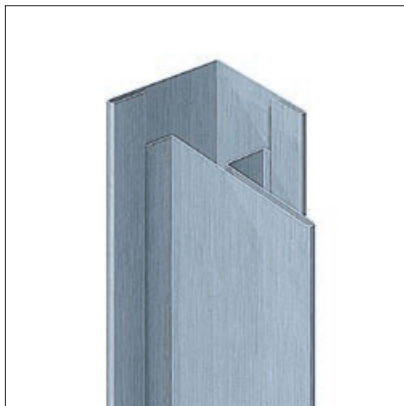


V8

**2.8 SP-Line Design,  
vertical application**

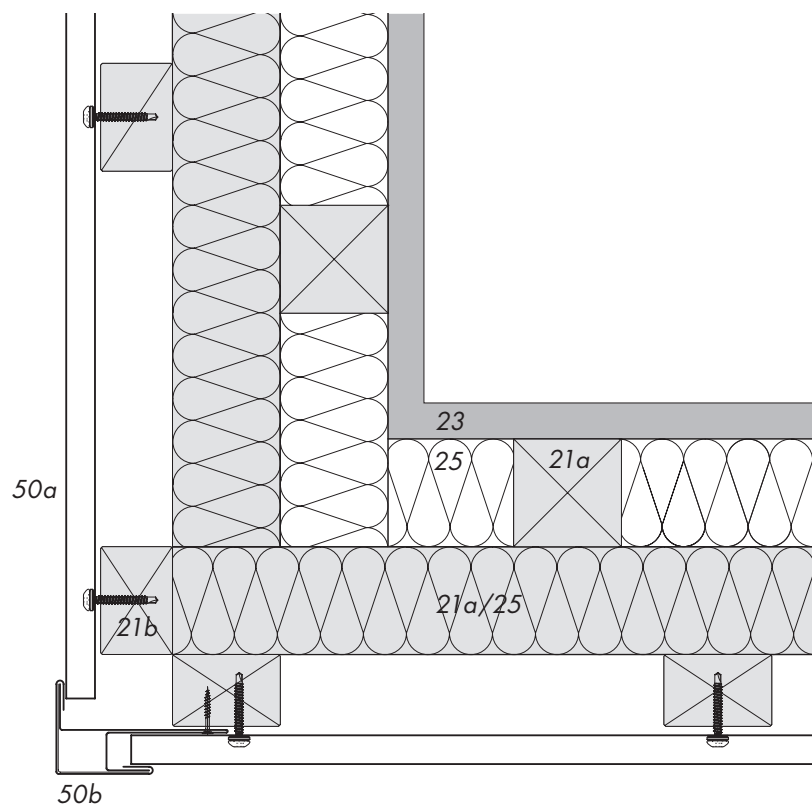
- 2.8.1 Detail V1: Cornice profile  
Page 26
- 2.8.2 Detail V2: Gable starter profile  
Page 27
- 2.8.3 Detail V3: Starter profile  
Page 28
- 2.8.4 Detail V4: End profile  
Page 29
- 2.8.5 Detail V5: Base-/intel profile  
Page 30
- 2.8.6 Detail V6: Jamb profile  
Page 31
- 2.8.7 Detail V7: Window sill coping  
Page 32
- 2.8.8 Detail V8:  
Outside corner profile  
Page 33

HORIZONTAL DESIGN APPLICATION  
DETAIL H1, OUTSIDE CORNER PROFILE

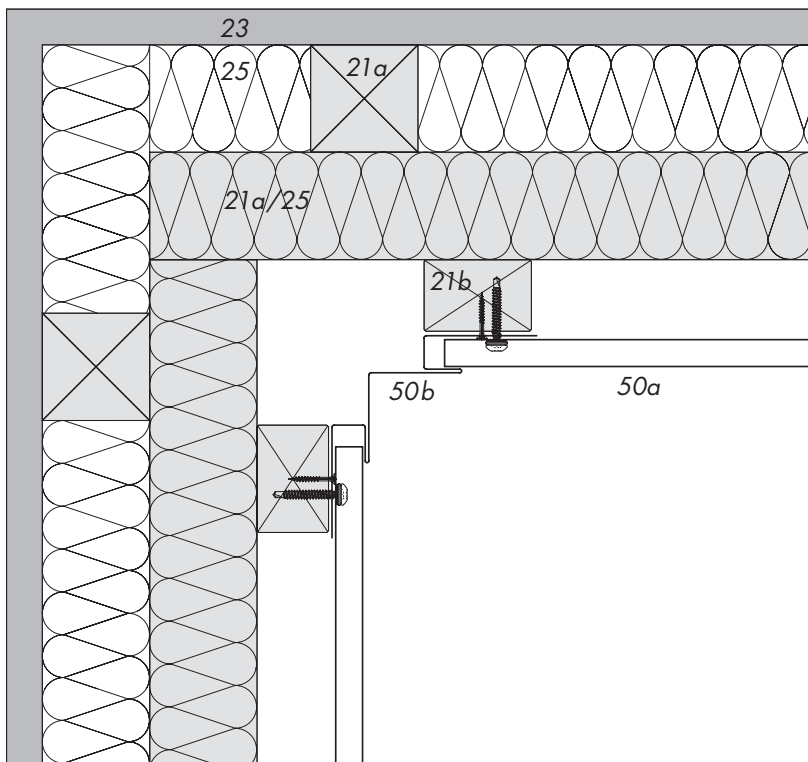
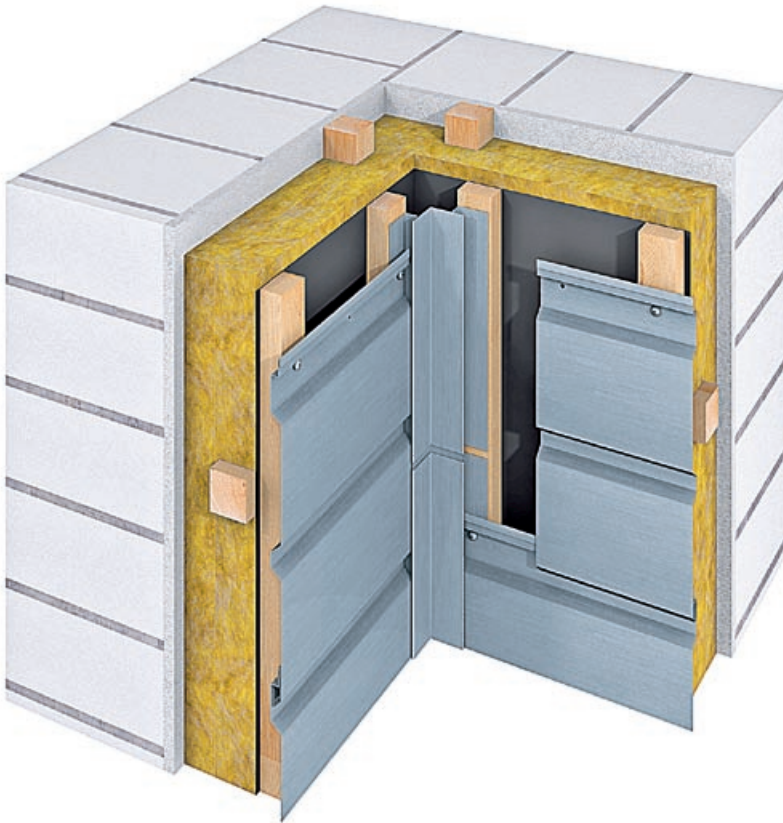


**2.7.1 Detail H1:**  
**Outside corner profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Outside corner profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation



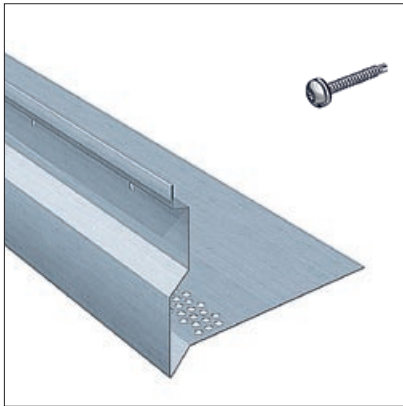
**HORIZONTAL DESIGN APPLICATION  
DETAIL H2, INSIDE CORNER PROFILE**



**2.7.2 Detail H2: Inside corner profile**

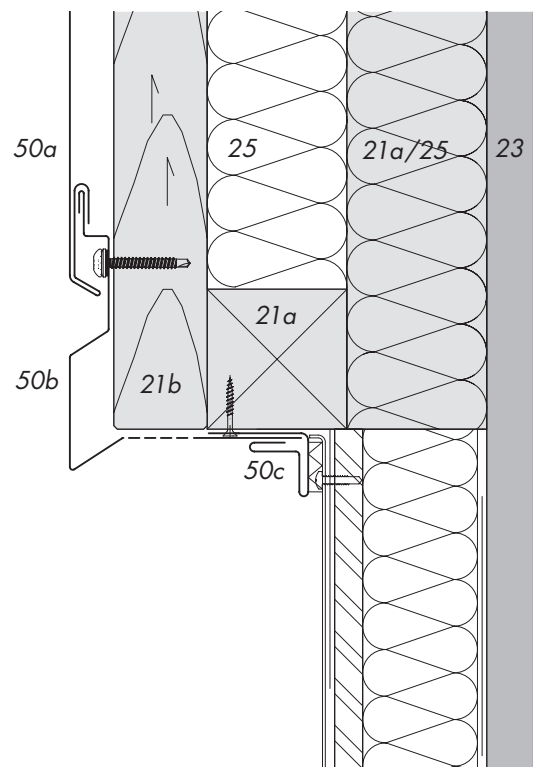
- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Inside corner profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

HORIZONTAL DESIGN APPLICATION  
DETAIL H3, BASE PROFILE

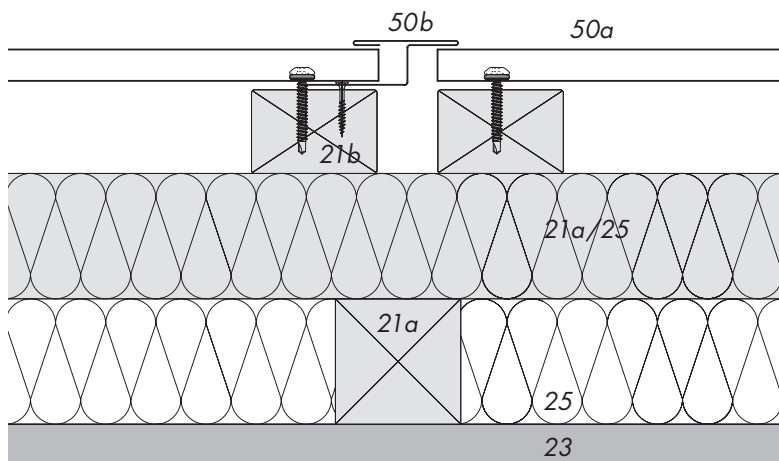


**2.7.3 Detail H3: Base profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Base profile
  - c Receiver strip
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation



**HORIZONTAL DESIGN APPLICATION  
DETAIL H4, VERTICAL JOINT PROFILE**

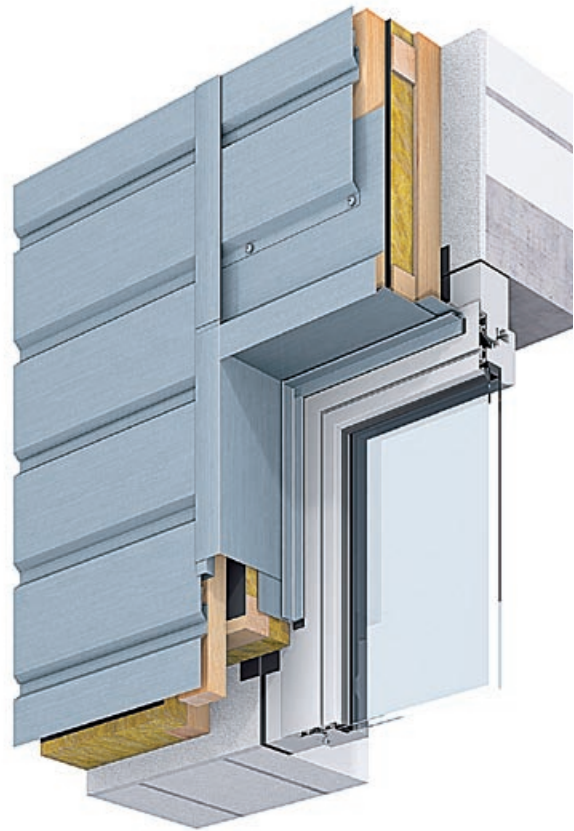
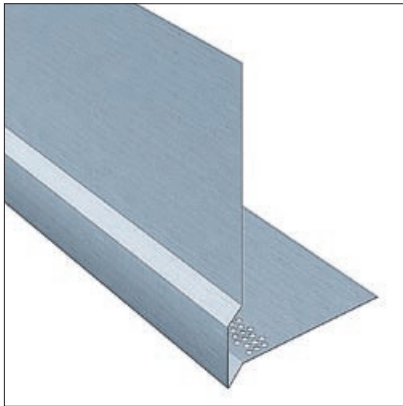


**2.7.4 Detail H4: Vertical joint profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Vertical joint profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

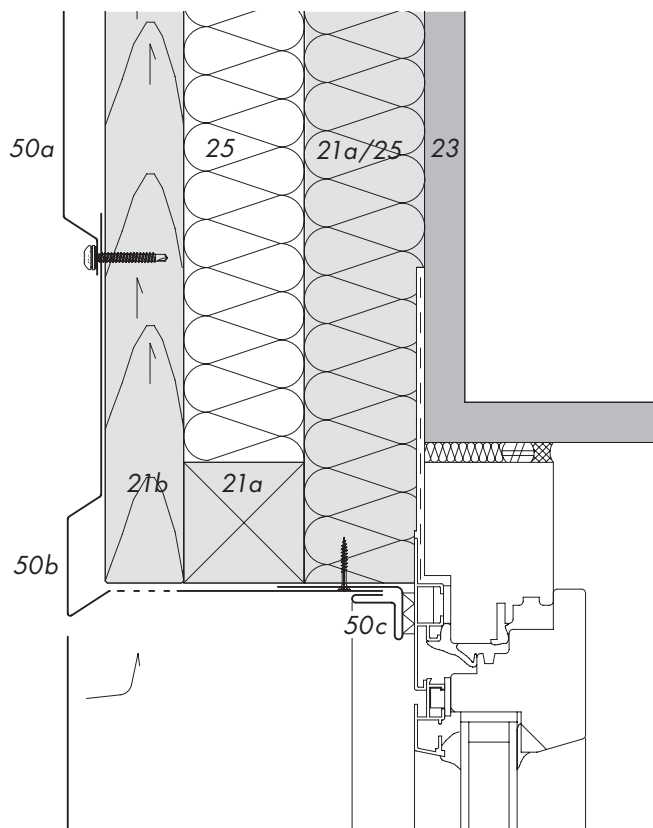


HORIZONTAL DESIGN APPLICATION  
DETAIL H5, LINTEL PROFILE



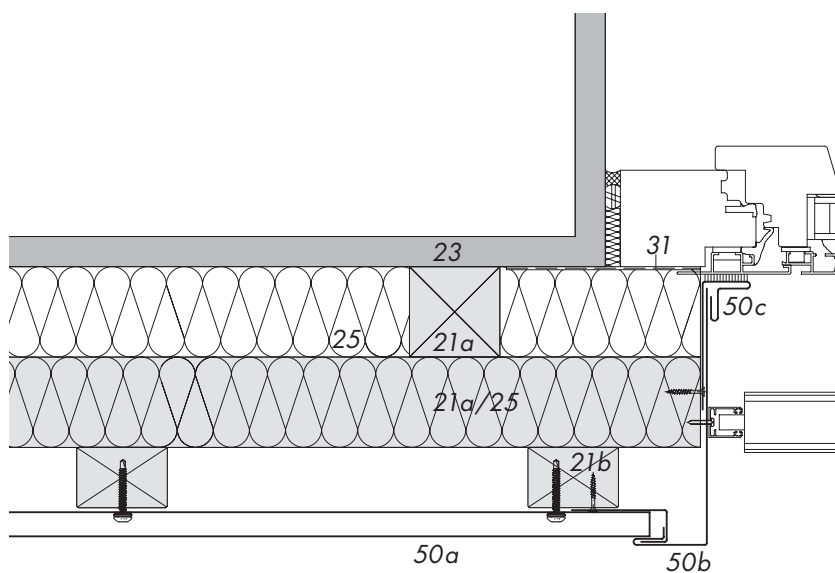
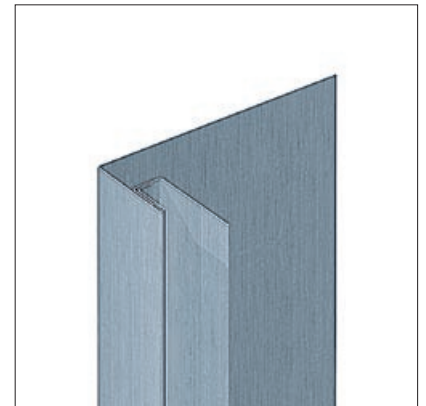
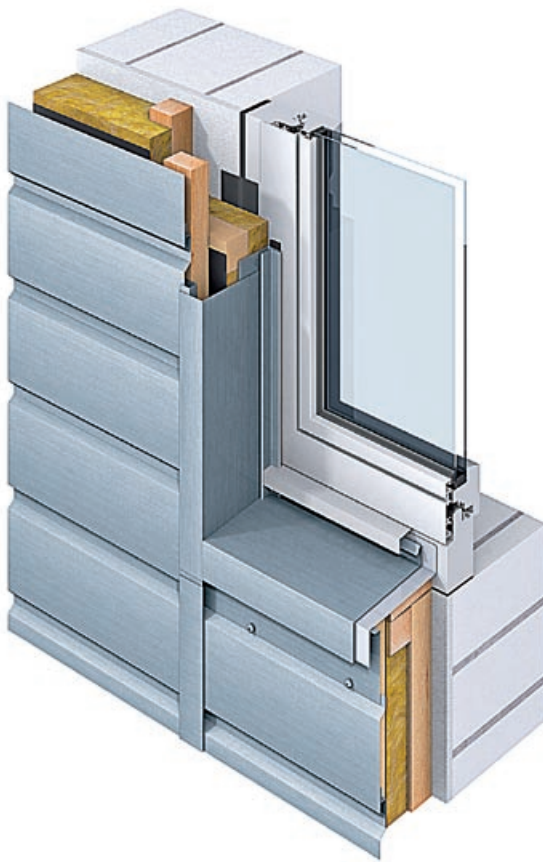
2.7.5 Detail H5: Lintel profile

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Lintel profile, horizontal, partially perforated
  - c Receiver strip
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation





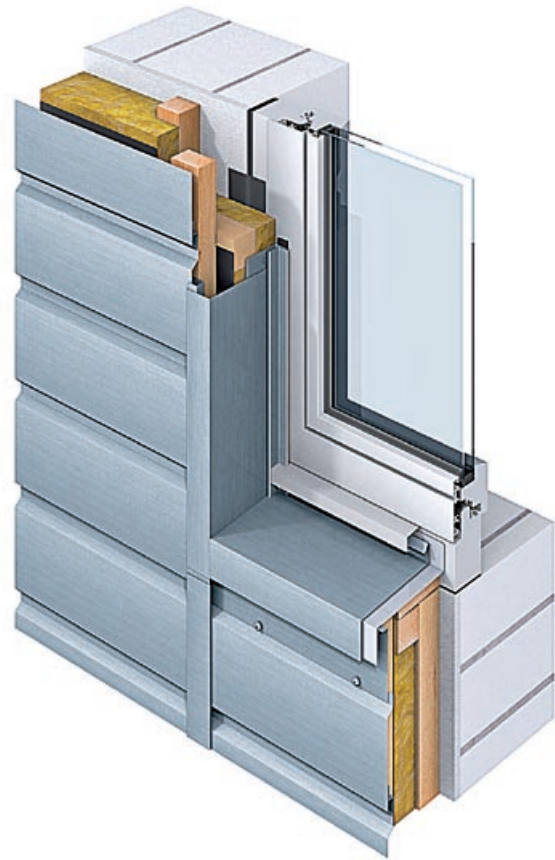
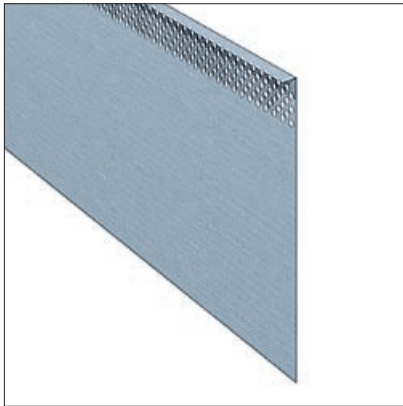
HORIZONTAL DESIGN APPLICATION  
DETAIL H6, JAMB PROFILE



**2.7.6 Detail H6: Jamb profile**

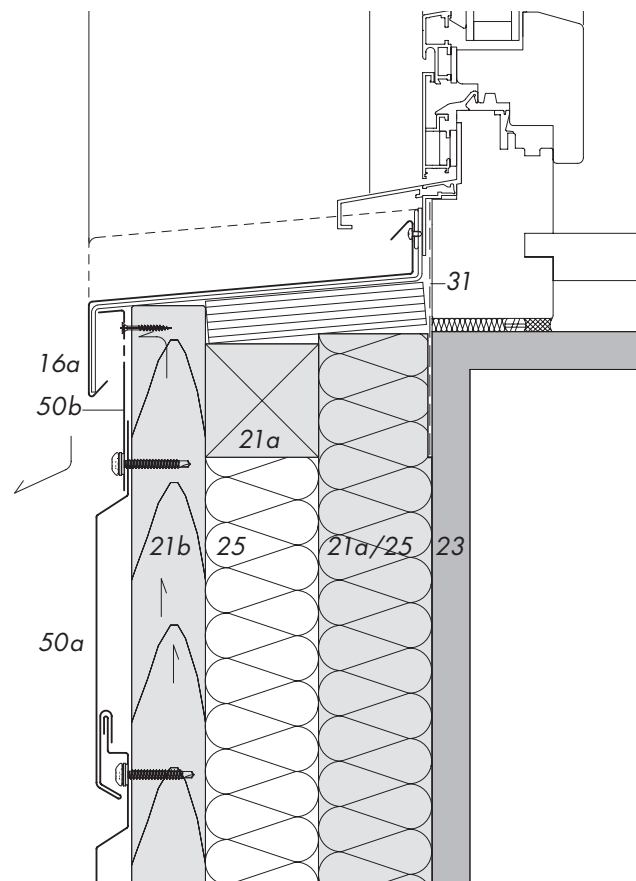
- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Jamb profile
  - c Receiver strip
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation
- 31 Windproofing

HORIZONTAL DESIGN APPLICATION  
DETAIL H7, TERMINATION PROFILE

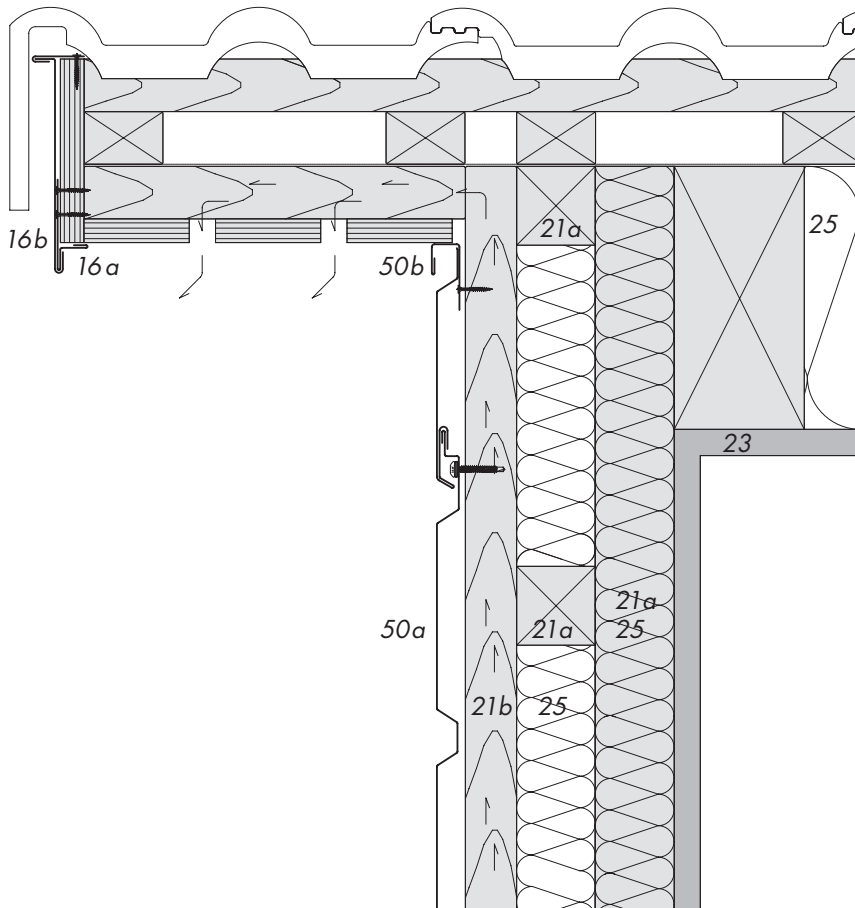
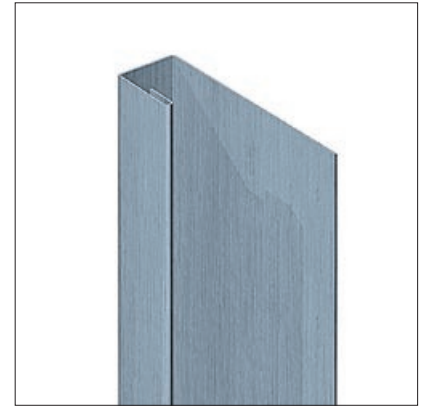


**2.7.7 Detail H7: Termination profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Termination profile, partially perforated
- 16 RHEINZINK®-Building profile
  - a Window sill coping
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation
- 31 Windproofing



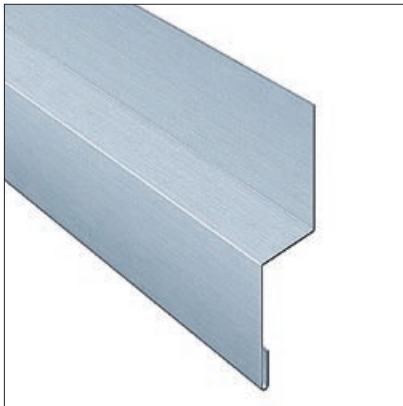
# HORIZONTAL DESIGN APPLICATION DETAIL H8, PLUG-IN PROFILE



## 2.7.8 Detail H8: Plug-in profile

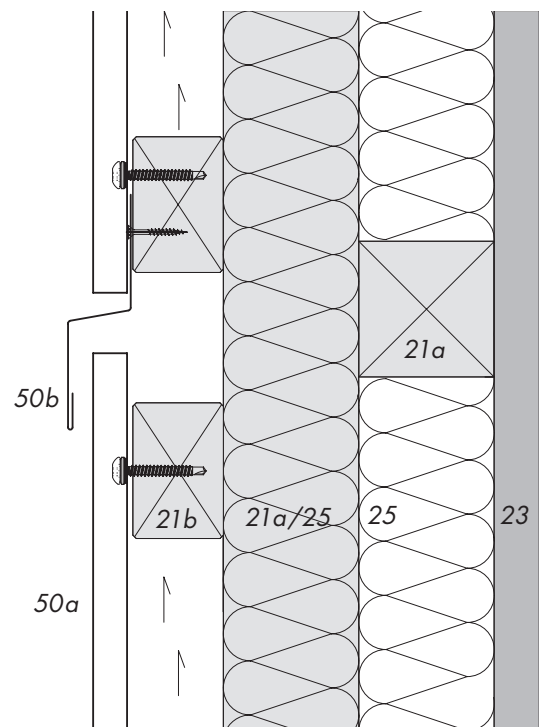
- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Plug-in profile
- 16 RHEINZINK®-Building profile
  - a Support profile
  - b Verge fascia
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

VERTICAL DESIGN APPLICATION  
DETAIL V1, CORNICE PROFILE

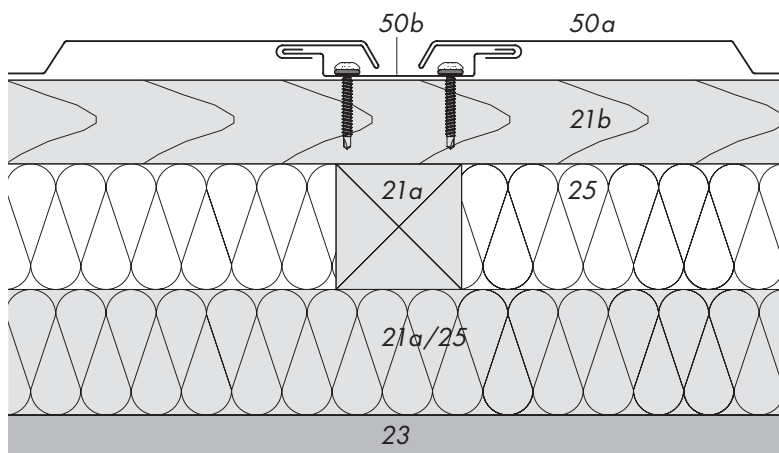
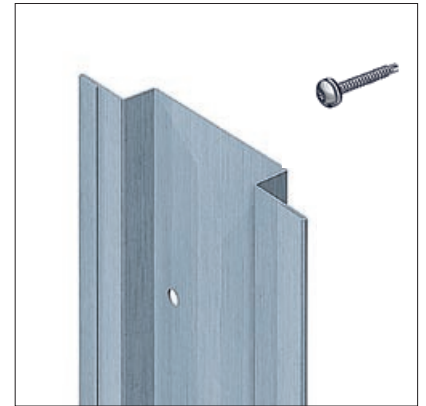
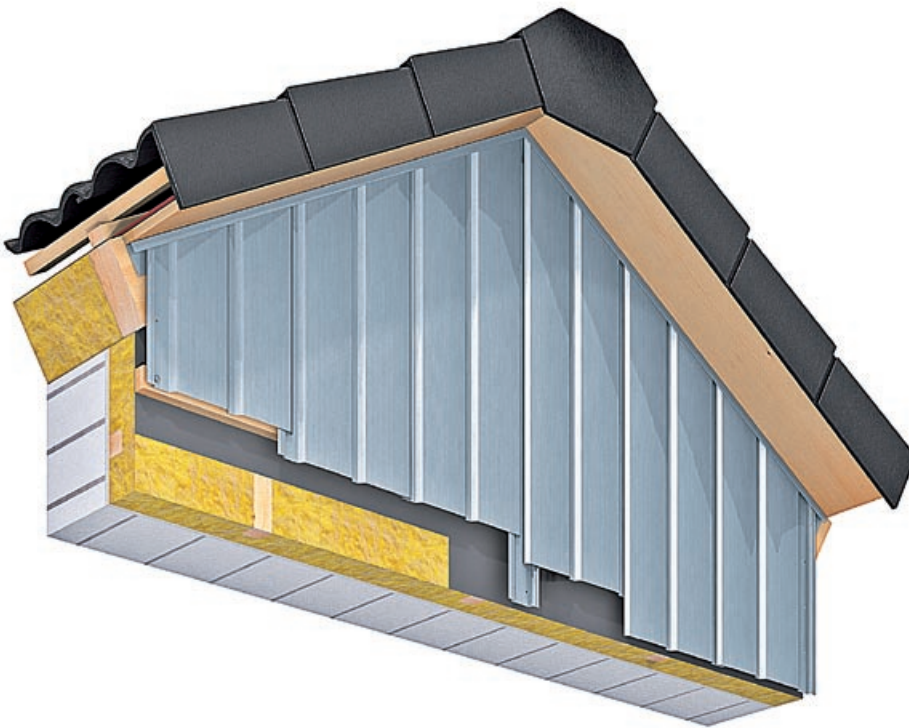


2.8.1 Detail V1: Cornice profile

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Cornice profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation



**VERTICAL DESIGN APPLICATION  
DETAIL V2, GABLE STARTER PROFILE**

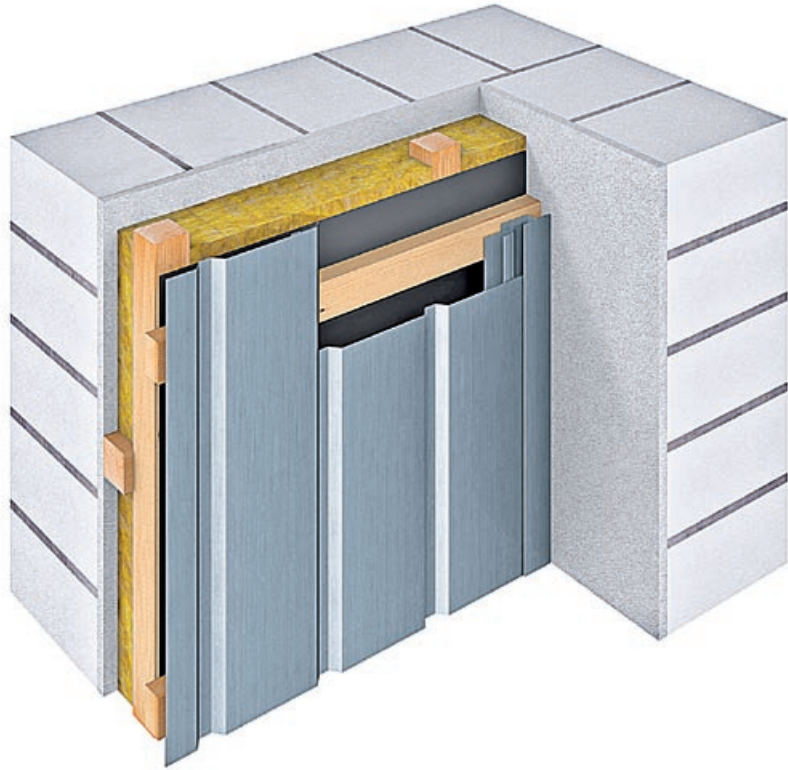
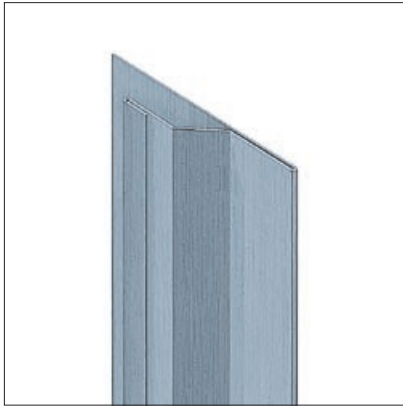


**2.8.2 Detail V2: Gable starter profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Gable starter profile, vertical
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

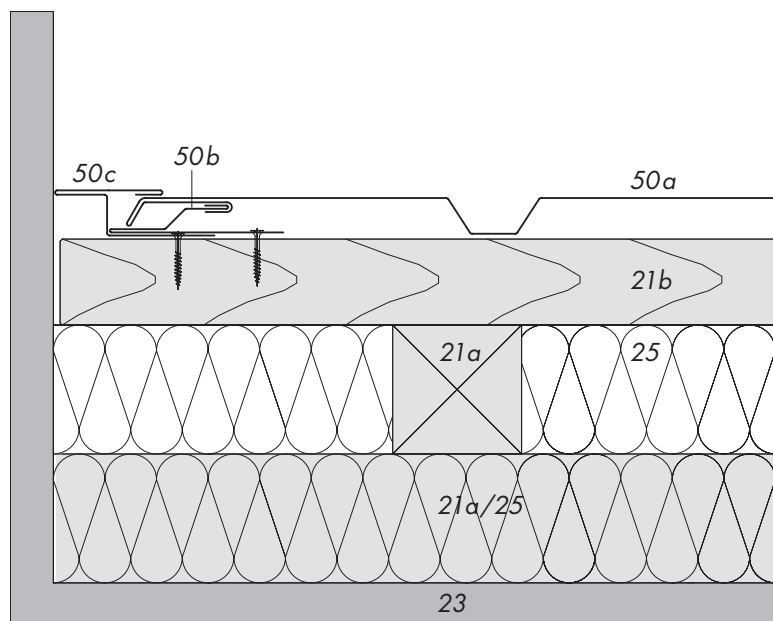


VERTICAL DESIGN APPLICATION  
DETAIL V3, STARTER PROFILE

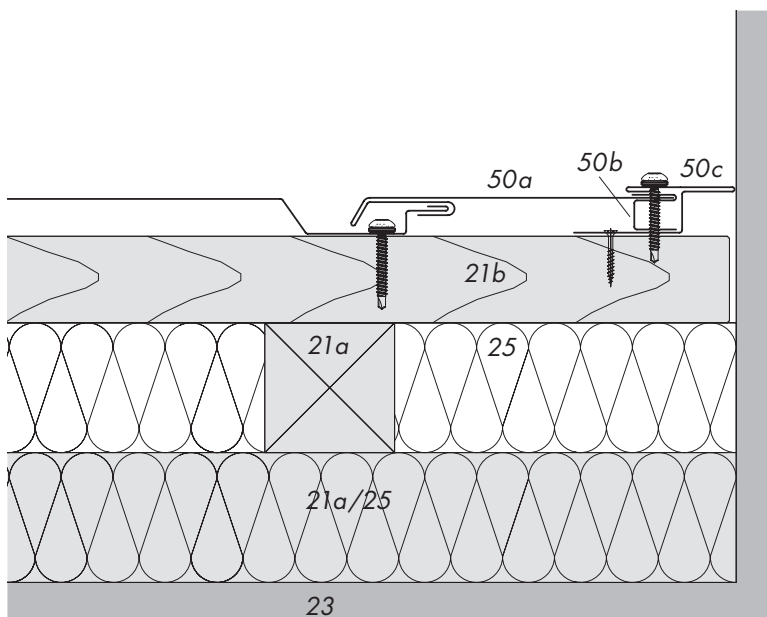
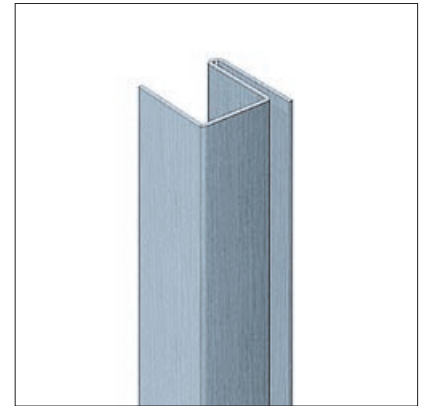


2.8.3 Detail V3: Starter profile

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Starter profile, vertical
  - c Vertical joint profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation



VERTICAL DESIGN APPLICATION  
DETAIL V4, END PROFILE

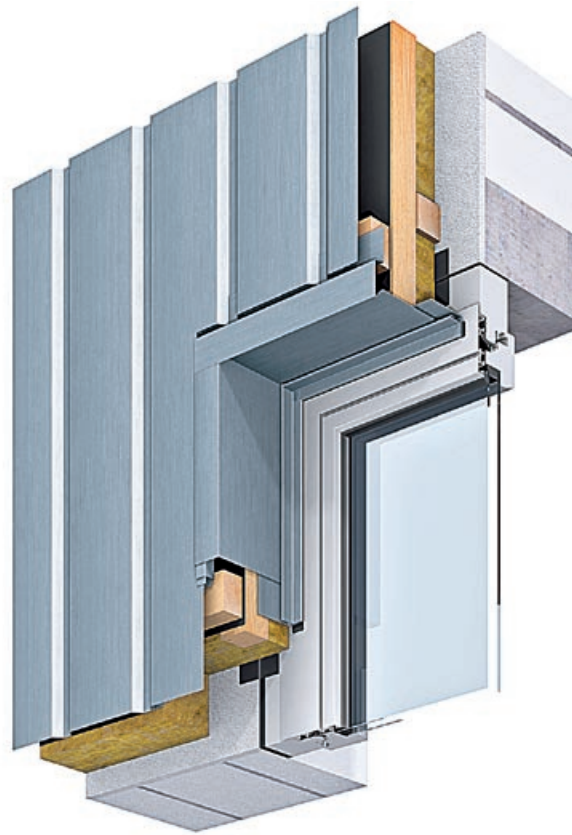
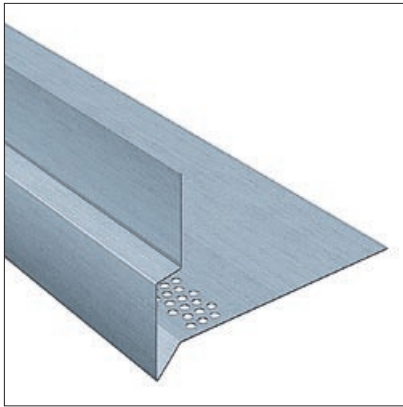


2.8.4 Detail V4: End profile

- 50 RHEINZINK®-SP-Line
  - a Basic pane
  - b End profile, vertical
  - c Vertical joint profile
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

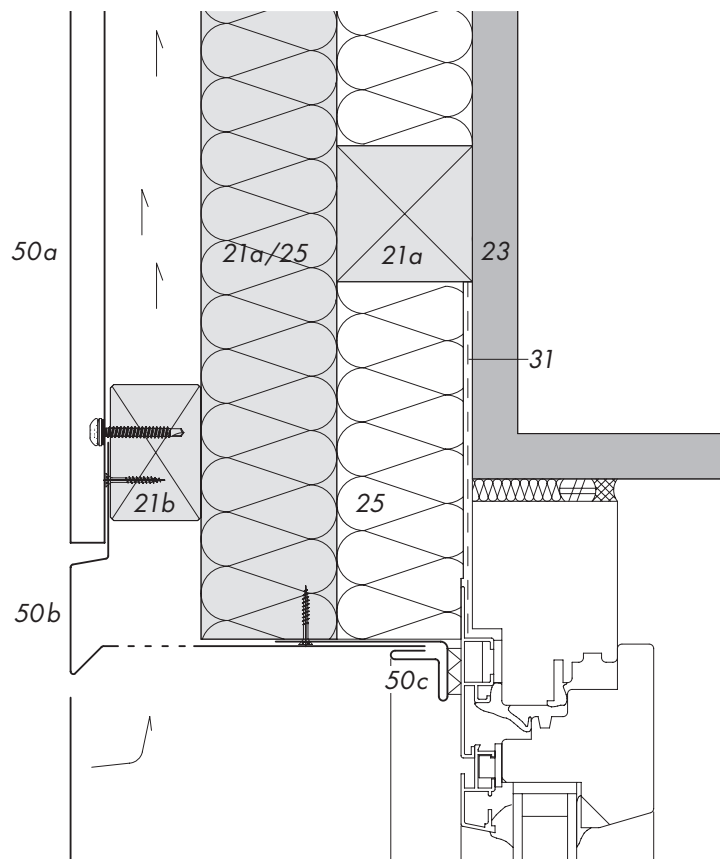


VERTICAL DESIGN APPLICATION  
DETAIL V5, BASE-/LINTEL PROFILE

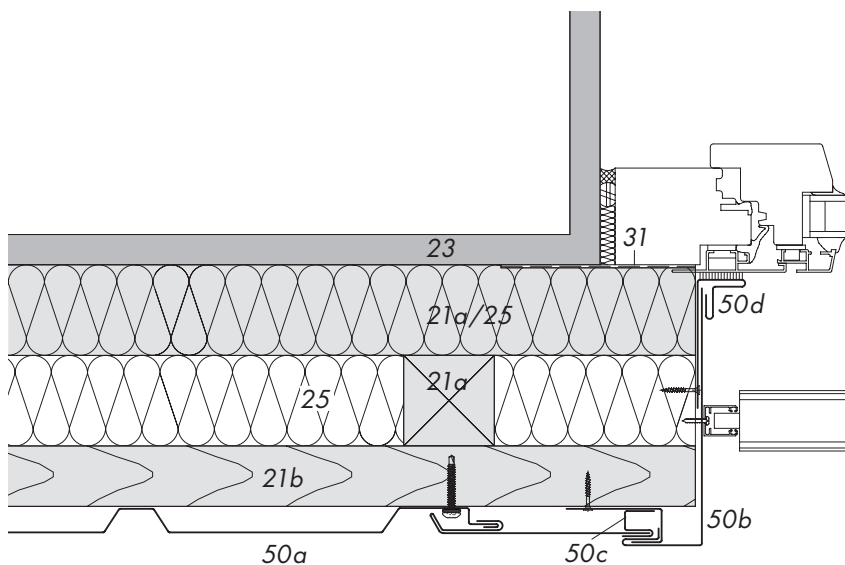
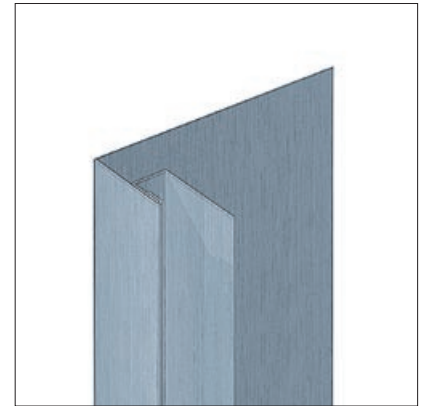
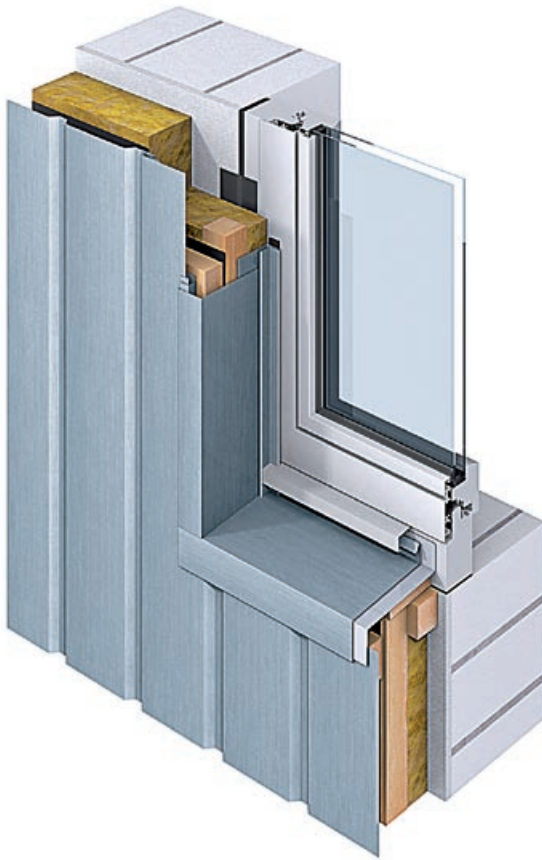


**2.8.5 Detail V5: Base-/lintel profile**

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Base-/lintel profile, vertical, partially perforated
  - c Receiver strip
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation
- 31 Windproofing



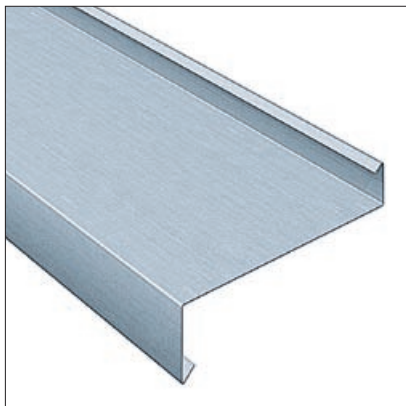
VERTICAL DESIGN APPLICATION  
DETAIL V6, JAMB PROFILE



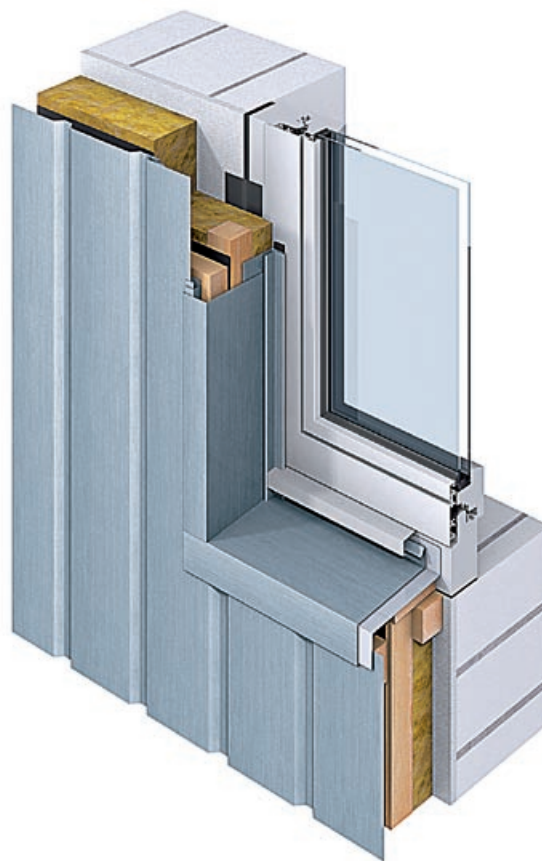
2.8.6 Detail V6: Jamb profile

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Jamb profile
  - c End profile, vertical
  - d Receiver strip
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation
- 31 Windproofing

### VERTICAL DESIGN APPLICATION DETAIL V7, WINDOW SILL COPING

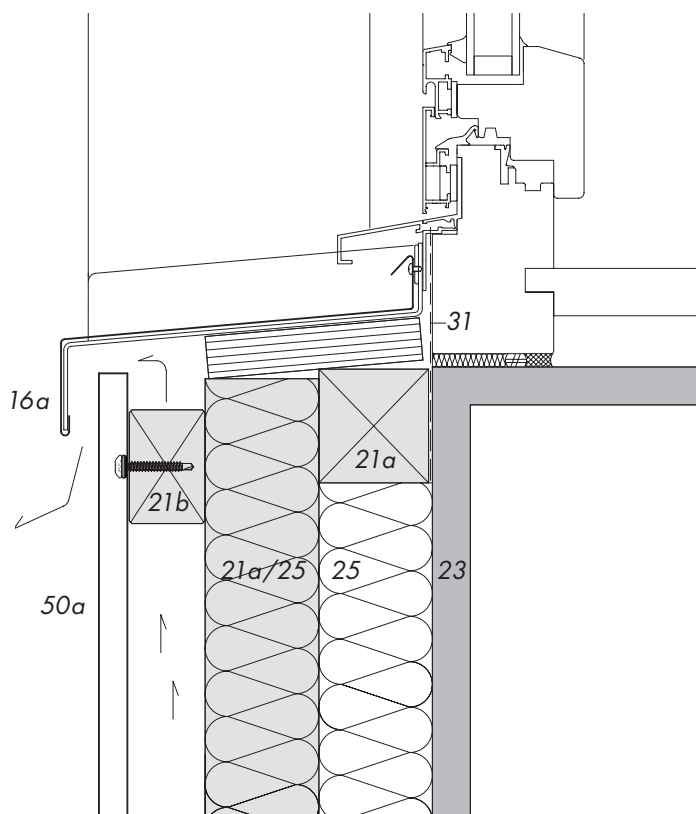


Edging according to specified measurements

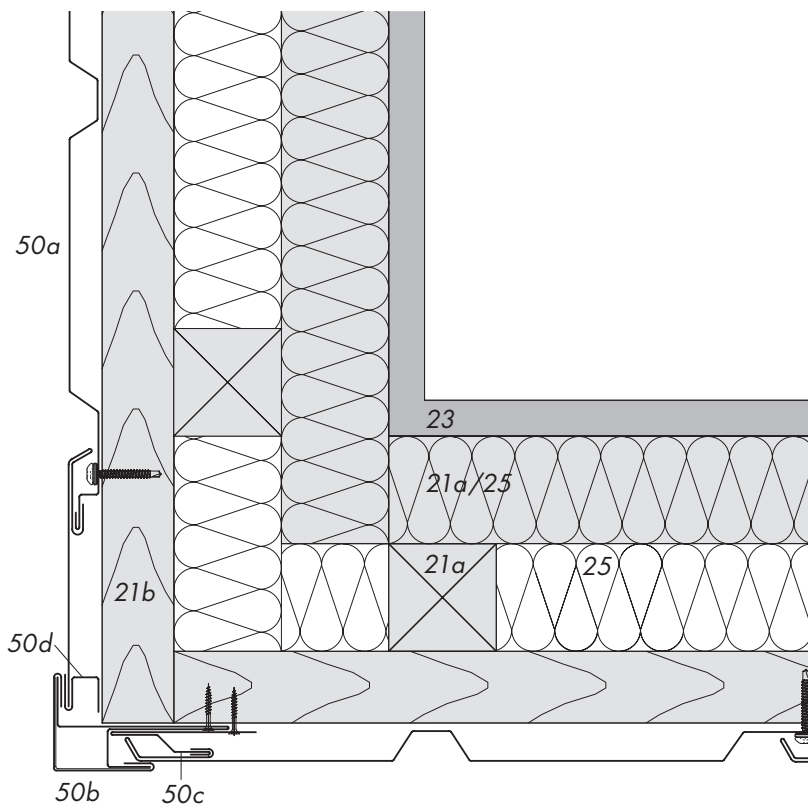
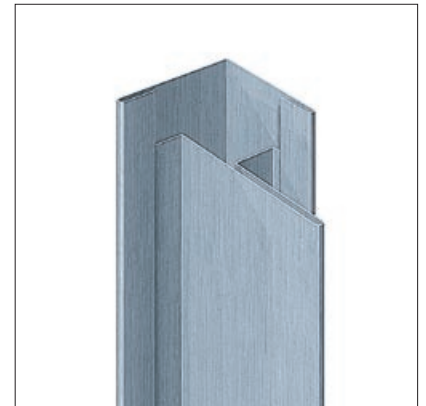
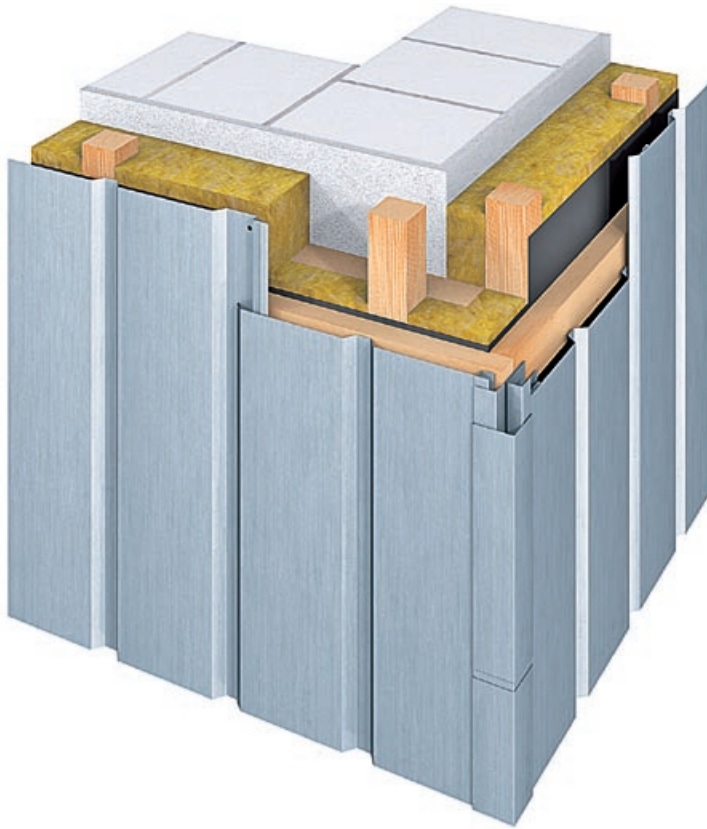


### 2.8.7 Detail V7: Window sill coping

- 50 RHEINZINK®-SP-Line
  - a Basic panel
- 16 RHEINZINK®-Building profile
  - a Window sill coping
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation
- 31 Windproofing



VERTICAL DESIGN APPLICATION  
DETAIL V8, OUTSIDE CORNER PROFILE



2.8.8 Detail V8: Outside corner profile

- 50 RHEINZINK®-SP-Line
  - a Basic panel
  - b Outside corner profile
  - c Starter profile, vertical
  - d End profile, vertical
- 21 Batten/scantling
  - a 60 x 60 mm
  - b 40 x 60 mm
- 23 Supporting structure
- 25 Thermal insulation

**RHEINZINK-SERVICE CENTRES**

**Service centre Hamburg**

Adlerstr. 38-42  
25462 Rellingen  
Tel.: +49 4101 3871-0  
Fax: +49 4101 3871-26  
E-Mail: hamburg@rhein-zink.de

**Service centre Kaiserslautern**

Carl-Billand-Str. 12  
67661 Kaiserslautern  
Tel.: +49 631 534898-0  
Fax: +49 631 534898-23  
E-Mail: kaiserslautern@rhein-zink.de

**Service centre Ulm**

Nicolaus-Otto-Str. 36  
89079 Ulm  
Tel.: +49 731 94606-0  
Fax: +49 731 43185  
E-Mail: ulm@rhein-zink.de

**Service centre Hannover**

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30853 Langenhagen  
Tel.: +49 511 7253519-0  
Fax: +49 511 7253519-29  
E-Mail: hannover@rhein-zink.de

**Service centre Berlin**

Ollenhauerstr. 101  
13403 Berlin  
Tel.: +49 30 417785-0  
Fax: +49 30 4135831  
E-Mail: berlin@rhein-zink.de

**Service centre Bochum**

Hiltroper Str. 260  
44805 Bochum  
Tel.: +49 234 95978-0  
Fax: +49 234 95978-20  
E-Mail: bochum@rhein-zink.de

**Service centre Erfurt**

Fichtenweg 50  
99198 Kerspleben  
Tel.: +49 36203 7697-0  
Fax: +49 36203 7697-18  
E-Mail: erfurt@rhein-zink.de

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**Business hours**

Monday – Thursday    7.30 a.m. – 4.30 p.m.  
Friday                    7.30 a.m. – 3.00 p.m.

If you are calling outside of business hours, please leave a message on our answering machine.  
Your messages and requests will be noted and processed without delay.

RHEINZINK-SERVICE CENTRES







# FAX FORM

## RHEINZINK®-SP-LINE

Parts list for inquiry/  
order at dealer's

Page 1

Hamburg  
Hannover  
Bochum  
Kaiserslautern  
Berlin  
Erfurt  
Ulm

Fax: +49 4101 3871 -26  
+49 511 7253519-29  
+49 234 95978-20  
+49 631 534898-23  
+49 30 4135831  
+49 36203 7697-18  
+49 731 43185



Price inquiry ☐

Order ☐

### Building Project

Street/Postal Code/City

### Installation Company

Street/Postal Code/City

Tel./Fax

### Architect/Designer

Street/Postal code/City

Tel./Fax

### Dealer

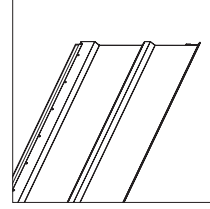
Street/Postal Code/City

Tel./Fax

Date

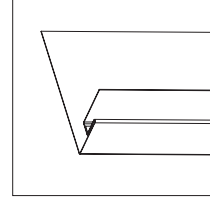
Signature

Tradeperson's stamp



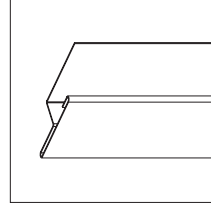
### Basic panel, incl. fasteners, packaging unit 9,0 m

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136401
Slave profile, horizontal				4136460
Slave profile, vertical				4136461



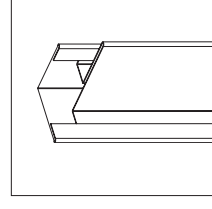
### Jamb profile

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136456



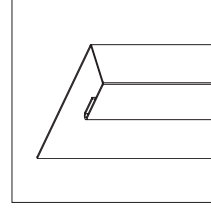
### Vertical joint profile, incl. butt strap

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136446



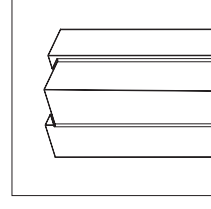
### Outside corner profile, incl. butt strap

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136441



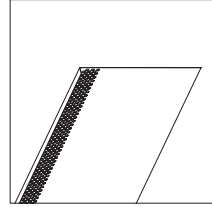
### Plug-in profile

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136415



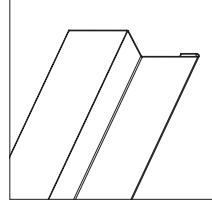
### Inside corner profile, incl. butt strap

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136451



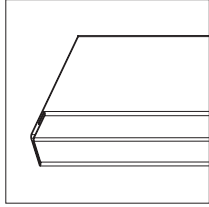
### Termination profile

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136417



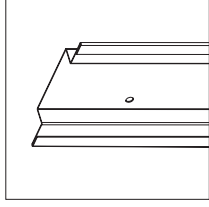
### Cornice profile

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136416
<b>Butt strap, cornice profile</b>				
				4136465



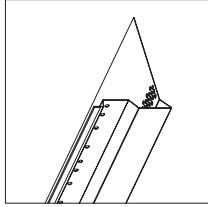
### Receiver strip

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136418



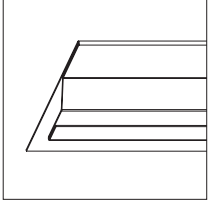
### Gable starter profile, vertical incl. fasteners

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136406



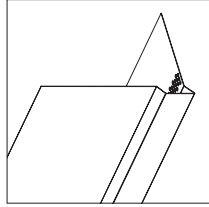
### Base profile, horizontal incl. fasteners

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136411
<b>Butt strap base profile, horizontal</b>				
				4136463



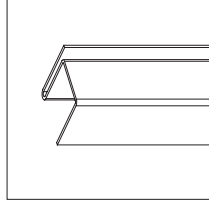
### Starter profile, vertical

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136430



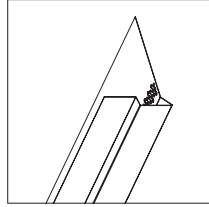
### Lintel profile, horizontal

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136420
<b>Butt strap, lintel profile, horizontal</b>				
				4136464



### End profile, vertical

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136435



### Base/lintel profile, vertical

Length mm	Thickness mm	Qty m	Qty - pieces	Item No. "preweathered <sup>pro</sup> blue-grey"
3000	0,7			4136425

### Butt strap

### base/lintel profile, vertical

				4136462
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