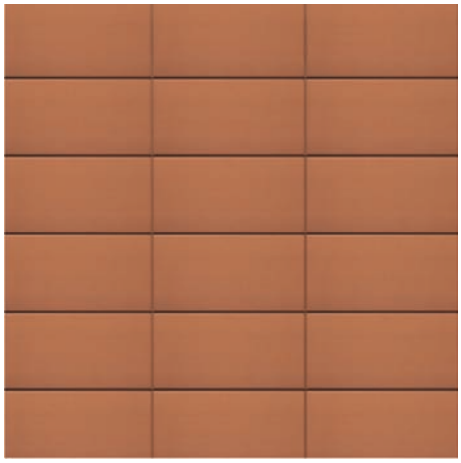
CLADDING TILE TONALITY®

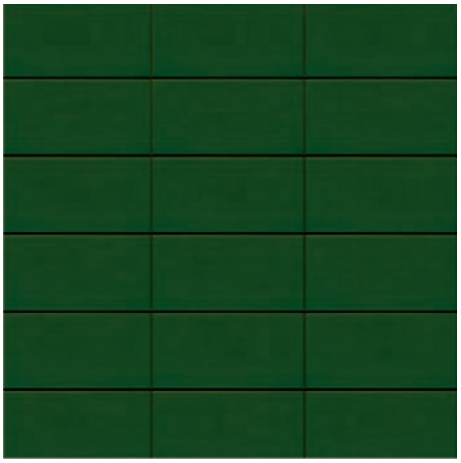
PLANNING & APPLICATION
2009

CREATON®
NATURAL CLAY SETS THE TONE

TONALITY® cladding tiles have represented highest quality, frost resistance and durability for decades now.
The unique variety of colors with select surfaces, the outstandingly attractive joint design, and the consumer-oriented installation constitute the distinguishing features of the high-quality cladding tiles TONALITY®.
The suspended back-vented façade of TONALITY® cladding tiles proved to be a reliable system with desirable building characteristics for new building projects as well as for renovations of existing buildings.

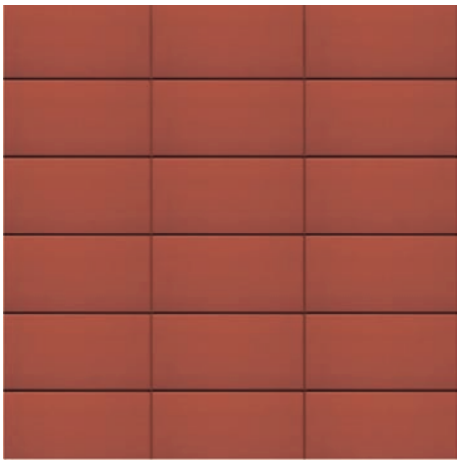


TONALITY® Classic Natural



TONALITY® Color

TONALITY® Classic Finished Surface



TONALITY® Color Natural Red FR3

TONALITY® Classic Special Series

TONALITY® Sun Protection

All notes and information, technical and graphic instructions, correspond to the current codes and standards of technology, as well as to our experiences based on this technology. The described applications represent examples and do not take into consideration custom designs and circumstances of individual cases. The information and the suitability of the material for the intended purposes must be examined with regard to the respective building project at any rate. Liability is excluded. This shall also apply to misprints and later changes of technical data.

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Clay tile façade TONALITY® of Creaton AG

The clay tile façade TONALITY® of Creaton AG extends the product range for suspended back-vented facades with an appealing natural material. TONALITY® cladding tiles have represented highest quality, frost resistance and durability for decades now. The range comprises through-colored burnt-clay tiles with natural surface texture, cladding tiles with matt and glossy surface finish and durable graffiti protection, as well as color-glazed tiles in a large variety of colors. The sun and privacy protection elements “Lamelle” and “Baguette” are completed by the new square-shaped tile “Quadrat”. Components of the Classic range are also available with smooth, pilaster strip and grooved surfaces. As a standard, the cladding tiles TONALITY® are offered with three attachment systems manufactured of a high-quality aluminum alloy. The compatibility of the system consisting of the TONALITY® cladding tile and of the system sub-construction allows for fast, time-saving installation. All cladding tiles of the TONALITY® range are non-combustible (Fire resistance acc. to Building Material Class A1). With formats from 150 x 300 mm up to 400 x 1,600 mm, the range opens up broad possibilities of design and material combinations with fiber cement panels of large format.

The following pages are intended to evoke design ideas, and as a practical guide to construction and realization. Whether it is an office complex, a commercial building or school – the illustrated buildings will convince you with regard to their aesthetic appeal and their economic efficiency. And even in building renovations, the suspended back-vented façade of TONALITY® cladding tiles proves to be a reliable system with favorable building characteristics.

Our qualified façade experts stand ready to give you custom and project-related advice either by phone or on location. We are pleased to assure you of our strong support during the course of all building stages, particularly pertaining to detail planning, invitations of tenders or economical optimization. Take advantage of our knowledge and expertise of future-oriented façade systems. We are open to your ideas.

The TONALITY® cladding tiles are manufactured by

CREATON
NATURAL CLAY SETS THE TONE

Economical Advantages

- Short construction periods as a result of a high degree of prefabrication
- Installation carried out irrespective of weather conditions
- Scaffolding required to be in place only for short periods
- No preparation of the underlying surfaces necessary
- Simple compensation of the building tolerances possible
- Time-saving installation resulting from standardized fastening systems
- Simple exchange of individual tiles
- Durable material

Possibilities of Design

- Individual planning as a result of tile formats from 150 x 300 mm up to 400 x 1,600 mm
- Individual planning as a result of color variety and wide product range
- Color and material combinations are possible
- Choice of open or closed joints
- Colored accentuation of the joint is possible
- Surfaces: smooth, grooved, pilaster strip

Ecological Advantages

- High-quality reuse
- Environmental Managing System DIN EN ISO 14000
- Dismantling with sorted separation of materials possible
- Material recycling in the course of the production process

Product Overview

1 2
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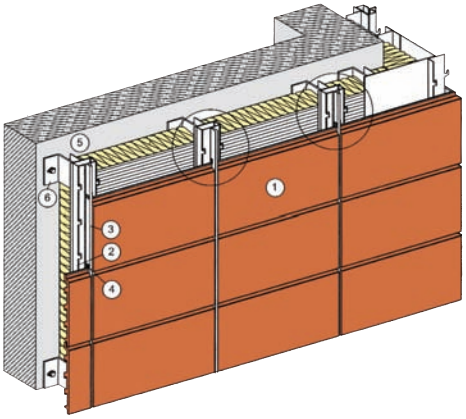
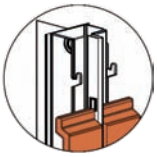
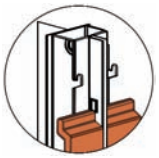
1. TONALITY® Classic Natural, through-colored cladding tile manufactured according to Keralis® procedure, surface natural Page 8
2. TONALITY® Classic Finished Surface, through-colored cladding tile manufactured according to Keralis® procedure, with lasting graffiti protection Page 8
3. TONALITY® Classic Special Series, through-colored cladding tile manufactured according to Keralis® procedure, surface natural Page 10
4. TONALITY® Color, colored glazing on natural-red basic fragments Page 12
5. TONALITY® Color Natural Red FR3, non-glazed through-colored cladding tile, surface natural Page 12
6. TONALITY® Sun and Privacy Protection Page 14

Adaptive System Sub-construction

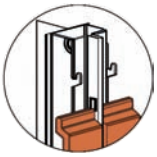




Closed joint profile, joint 8 mm



Open joint profile, joint 8 mm



Closed, “not visible” joint profile, joint 2 mm

End profile for border, no dismantling protection

Adaptive System (ADS)

1 TONALITY® Cladding tile
2 TONALITY® Adaptive vertical profile aluminum
3 TONALITY® Adaptive joint profile aluminum
4 TONALITY® Protection against dismantling
5 Primary sub-construction aluminum T-profile
6 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

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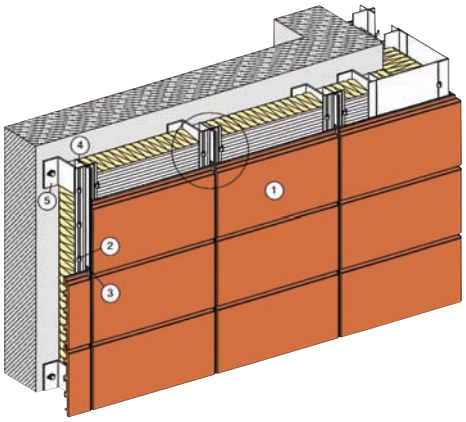
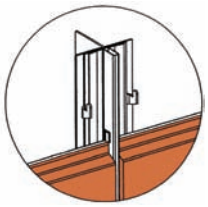
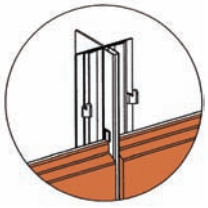
Base Clinch Rail System Sub-construction





Closed joint 8 mm



Closed, “not visible” joint profile, joint 2 mm

Base Clinch Rail System (BAS)

1 TONALITY® Cladding tile
2 TONALITY® Base clinch rail profile
3 TONALITY® Protection against dismantling
4 Primary sub-construction aluminum T-profile
5 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

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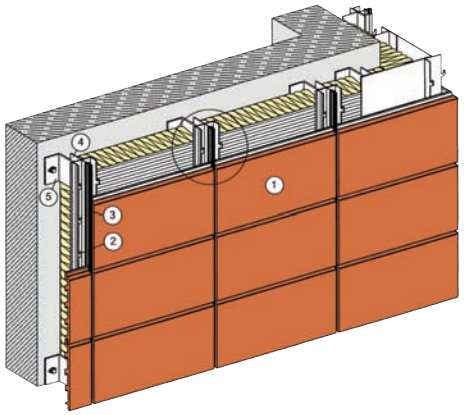
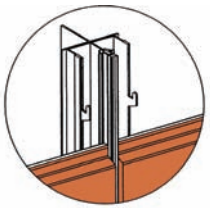
Classic Profile System Sub-construction





Classic profile system on vertical primary sub-construction with Neoprene joint profile in black

Classic Profile System (CLS)

1 TONALITY® Cladding tile
2 TONALITY® Vertical profile
3 TONALITY® Neoprene joint profile
4 Primary sub-construction aluminum T-profile
5 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

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TONALITY® Classic Natural and Classic Finished Surface with Graffiti Protection

Material: high-quality kinds of clay, burnt at over 1,200°C, Keralis procedure
Classic Natural: 6 color shades, through-colored, without coating
Classic Finished Surface: 17 color shades on through-colored basic fragments with lasting graffiti protection
Colors: page 43
Classification of fire resistance: A1 (DIN EN 13501-1)
Application: Suspended back-vented façade for all kinds of buildings and building heights, as well as for interior design.
Fastening: system-specific for the Adaptive System (ADS) and Base Clinch Rail System (BAS)

The TONALITY® Classic Finished Surface range includes a lasting graffiti protection. The protection is effective as of the first day, i.e. already in the building phase. The freshening up or renewal of the protection required for conventional systems is not necessary here.

Delivery range

TONALITY® Classic, smooth execution

Max. module size (mm)	Module height (mm)	Tile height (mm)	Tolerance (mm)	Module width (mm)	Tile width (mm)	Tolerance (mm)
150 x 900	150	158	± 2.0	900	Module width – joint width	± 1.0
175 x 900	175	183	± 2.0	900		± 1.0
200 x 1,600	200	208	± 2.0	1,600		± 1.0
225 x 1,600	225	233	± 2.0	1,600		± 1.0
250 x 1,600	250	258	± 2.0	1,600		± 1.0
300 x 1,600	300	308	± 2.0	1,600		± 1.0
400 x 1,600	400	408	± 2.0	1,600		± 1.0

Surface

Execution smooth

Execution grooved

Execution pilaster strip

Execution grooved or pilaster strip (one-lined) in the tile heights (module size) 150, 200, 250, 300 or 400 on request.

TONALITY® Classic Special Series

Material: high-quality kinds of clay, burnt at over 1,200°C, Keralis procedure
Surface: 4 color shades, through-colored, surface natural with streaked appearance
Colors: page 43
Classification of fire resistance: A1 (DIN EN 13501-1)
Application: Suspended back-vented façade for all kinds of buildings and building heights, as well as for interior design.
Fastening: system-specific for the Adaptive System (ADS) and Base Clinch Rail System (BAS)

Delivery range

TONALITY® Classic Special Series

Max. Module size (mm)	Module height (mm)	Tile height (mm)	Tolerance (mm)	Module width (mm)	Tile width (mm)	Tolerance (mm)
175 x 400	175	183	± 2.0	400	Rasterbreite – Fugenbreite	± 1.0
175 x 450	175	208	± 2.0	450		± 1.0
200 x 400	200	183	± 2.0	400		± 1.0
200 x 450	200	208	± 2.0	450		± 1.0

Surface

Execution smooth

TONALITY® Classic Special Series

TONALITY® Color

Material: high-quality kinds of clay, burnt at approx. 1,050°C
Surface: Carrier pieces through-colored natural red, color-glazed
Permanent graffiti protection optionally possible
Colors: page 44
Classification of fire resistance: A1 (DIN EN 13501-1)
Application: Suspended back-vented façade for all kinds of buildings and building heights, as well as for interior design.
Fastening: system-specific for the Adaptive System (ADS) and Base Clinch Rail System (BAS)

TONALITY® Color Natural Red FR3

Material: high-quality kinds of clay, burnt at approx. 1,050°C
Surface: color shade natural red, surface natural, through-colored natural red, without coating
Colors: page 43
Classification of fire resistance: A1 (DIN EN 13501-1)
Application: Suspended back-vented façade for all kinds of buildings and building heights, as well as for interior design.
Fastening: system-specific for the Adaptive System (ADS) and Base Clinch Rail System (BAS)

Delivery range

TONALITY® Color

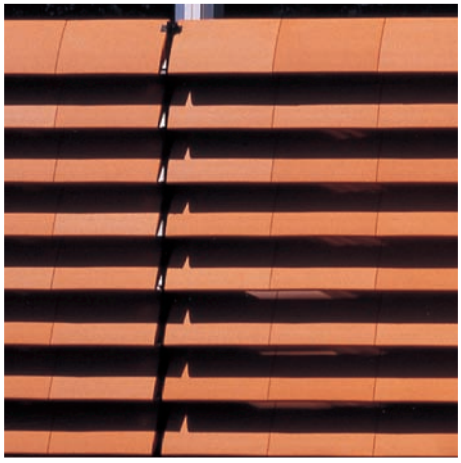
Max. Module size (mm)	Module height (mm)	Tile height (mm)	Tolerance (mm)	Module width (mm)	Module width (mm)	Tolerance (mm)
175 x 400	175	183	± 2.0	400	Module width – joint width	± 1.0
200 x 400	200	208	± 2.0	400		± 1.0

Surface

Execution smooth

TONALITY® Color

TONALITY® Baguette and Lamelle Tiles, Square-shaped Quadrat



Material: high-quality kinds of clay, burnt at 1,200°C, Keralis procedure, through-colored
Surface: natural, without coating
Colors: brick red (natural), manganese
Application: Privacy and sun protection
Fastening: Due to the extremely different requirements, the fastening must be realized individually for the respective building project.
Recommendation: Maurus Metallbauservice
Wörishoferstrasse 50, D-86842 Türkheim, Germany
Phone: +49 (0) 8245 - 90 912
Fax +49 (0) 8245 - 90 913

Delivery range Lamelle

Lamelle	
Trimmed size (mm) d x b	Tile height (mm)
Lamelle 1: 60 x 450	260
Lamelle 2: 50 x 450	150

The maximum length is 1,800 mm (consists of four individual elements).

Lamelle 1

Lamelle 2 2 (special color)

Delivery range Baguette

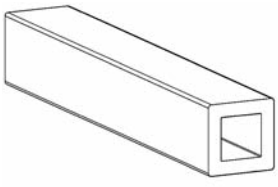
Baguette	
Trimmed size (mm) d x b	Tile height (mm)
Baguette 65 x 450	150

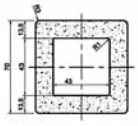
The maximum length is 1,800 mm (consists of four individual elements).

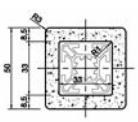
Delivery range square-shaped Quadrat

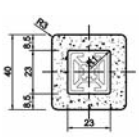
Quadrat		
Trimmed size (mm) d x b		Tile height (mm)
Quadrat 1:	40 x 450	40
Quadrat 2:	50 x 450	50
Quadrat 3:	70 x 450	70

The maximum length is 1,800 mm (consists of four individual elements).





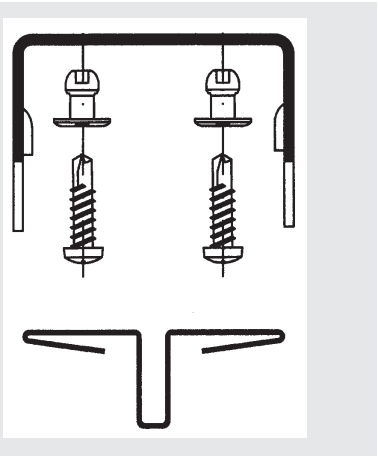




TONALITY® Lamelle Tiles

Kreiskrankenhaus Buchen
Entwurf: Ecker Architekten, Buchen
Foto: Dietmar Strauß, Besigheim

TONALITY® System Sub-Construction Adaptive System on Metal Sub-Construction



The TONALITY® Adaptive System (ADS) can be fastened on a horizontal or vertical primary sub-construction. The vertical profiles of the TONALITY® Adaptive System can take joint profiles with closed, fine or open end profiles without joint. Miter cut corners require the use of the external corner profiles available for the left and right side, in the 3 system depths of 46, 56 and 66 mm. In the event of open corners with profiles and a system depth of 56 and 66 mm, the installation requires the use of the TONALITY® external corner profile of 30 x 30 mm. The TONALITY® supporting profile prevents the generation of noise in the agraffe retainers. Reveal/lintel profiles are available for the fastening in the area of windows and doors. Bias-cut tiles are fixed using TONALITY® gable clamps with special glue.

Choice of profile	**Tile height (mm)**	**Profile length (mm)**
The agraffe retainers produce different profiles and profile lengths of the sub-construction as a result of the respective tile height	150	2,694
	175	2,794
	200	2,794
	225	2,694
	250	2,744
	300	2,694
	400	2,794

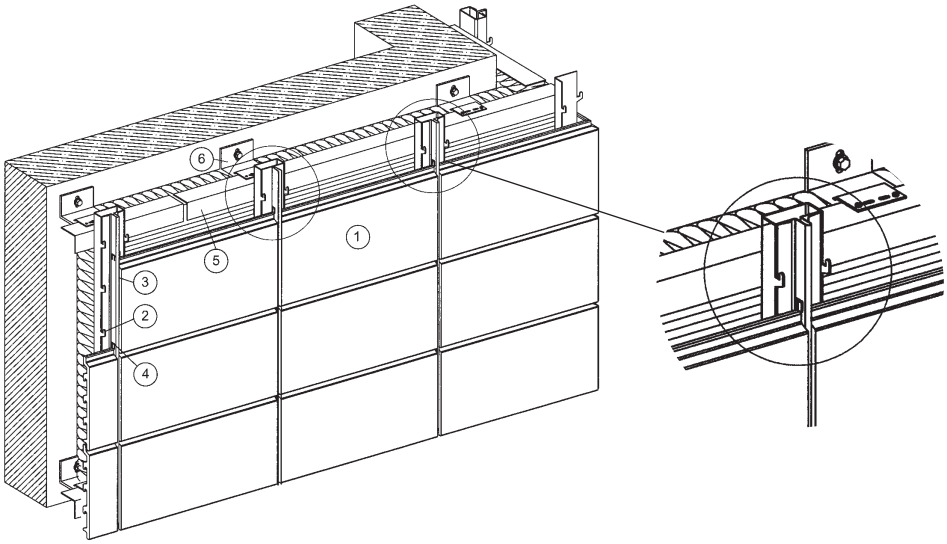
Delivery range:

Illustration	Description	Color / Material
	TONALITY® Adaptive Vertical Profile 46 35 x 60 x 35 mm for system depth 46 mm	Semimachined Aluminum
	TONALITY® Adaptive Vertical Profile 56 45 x 60 x 45 mm for system depth 56 mm	Semimachined Aluminum
	TONALITY® Adaptive Vertical Profile 66 55 x 60 x 55 mm for system depth 66 mm	Semimachined Aluminium
	TONALITY® Joint profile closed (8 mm) 56 x 23 mm for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Joint profile closed (8 mm) 56 x 30 mm, flush for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Joint profile open 56 x 31mm for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Joint profile “Fine Joint” (2 mm) 56 x 23 mm for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Joint profile “Fine Joint” (2 mm) 56 x 30 mm, flush for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Reveal/lintel profile narrow, profile width 40 mm for all system depths	Semimachined Aluminium
	TONALITY® Reveal/lintel profile wide, profile width 100 mm for all system depths	Semimachined Aluminium

Illustration	Description	Color / Material
	TONALITY® Vertical profile external corner 46, 74 / 35 mm, usable on both sides for system depth 46 mm	Semimachined Aluminium
	TONALITY® Vertical profile external corner 56, 74 / 35 mm, usable on both sides for system depth 56 mm	Semimachined Aluminium
	TONALITY® Vertical profile external corner 66, 74 / 45 mm, usable on both sides for system depth 66 mm	Semimachined Aluminium
	TONALITY® End profile for border 56 x 5 mm for all system depths	Semimachined Aluminium
	TONALITY® Supporting profile 60 mm For all system depths and modules	Black CR-Neoprene
	TONALITY® External corner profile 30 x 30 mm, For all modules with system depth 56 / 66 mm	Anodized E6EV1
	TONALITY® Gable clamps For all system depths and modules	Semimachined Aluminium
	Glue for gable clamps Consumption: 1 cartridge for 30 clamps	
	Sealing gasket profile for wind barrier 27 x 64 mm	Semimachined Aluminium
	Joint profile (wind barrier) 8 / 17 mm	CR Neoprene black

Aluminium quality EN AW 5754 according to DIN EN 755-2

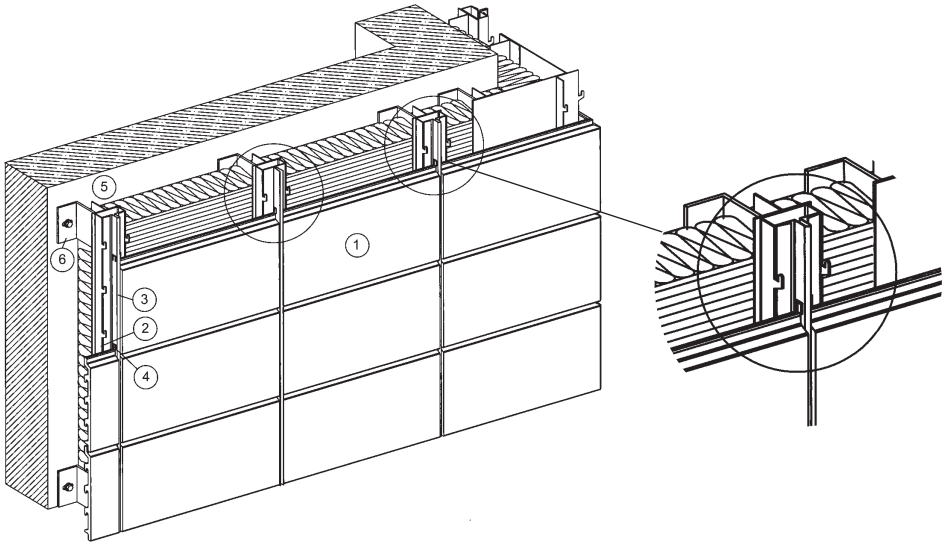
Adaptive System on Horizontal Sub-Construction



Adaptive system (ADS)
1 TONALITY® Cladding tile
2 TONALITY® Adaptive vertical profile aluminum
3 TONALITY® Adaptive joint profile aluminum
4 TONALITY® Protection against dismantling
5 Primary sub-construction aluminum L-profile
6 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

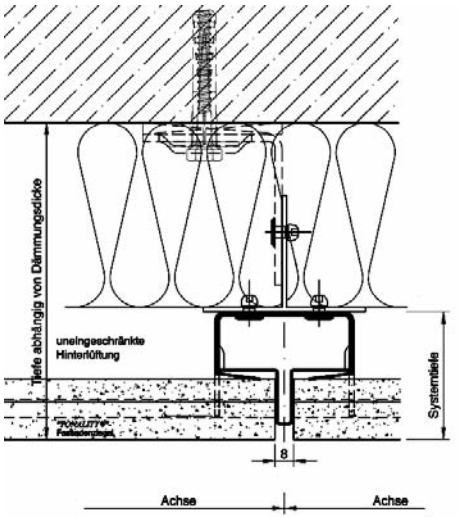
Adaptive System on Vertical Sub-Construction

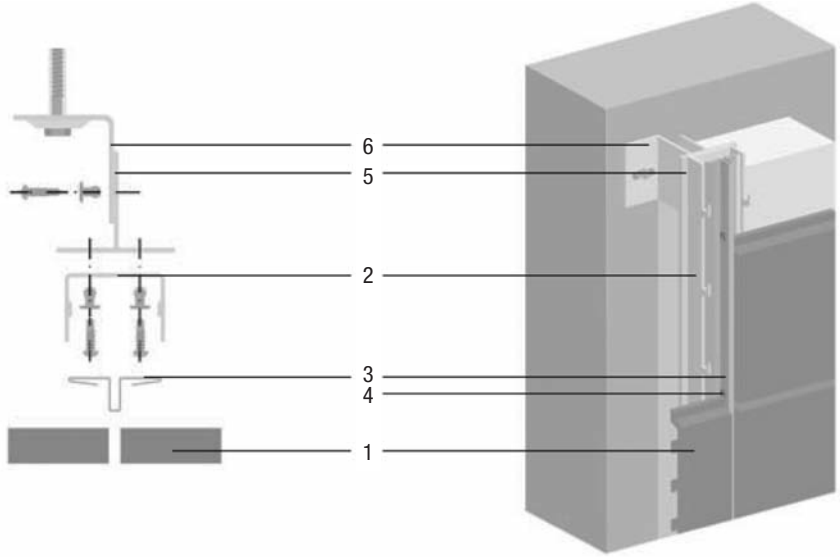


Adaptive system (ADS)
1 TONALITY® Cladding tile
2 TONALITY® Adaptive vertical profile aluminum
3 TONALITY® Adaptive joint profile aluminum
4 TONALITY® Protection against dismantling
5 Primary sub-construction aluminum T-profile
6 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

Primary sub-construction
Distances, kinds of brackets and plugs, as well as rivets resp. drilling screws are subject to structural calculation for the respective building project!

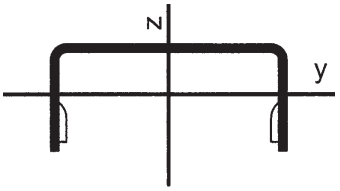




TONALITY® Adaptive System

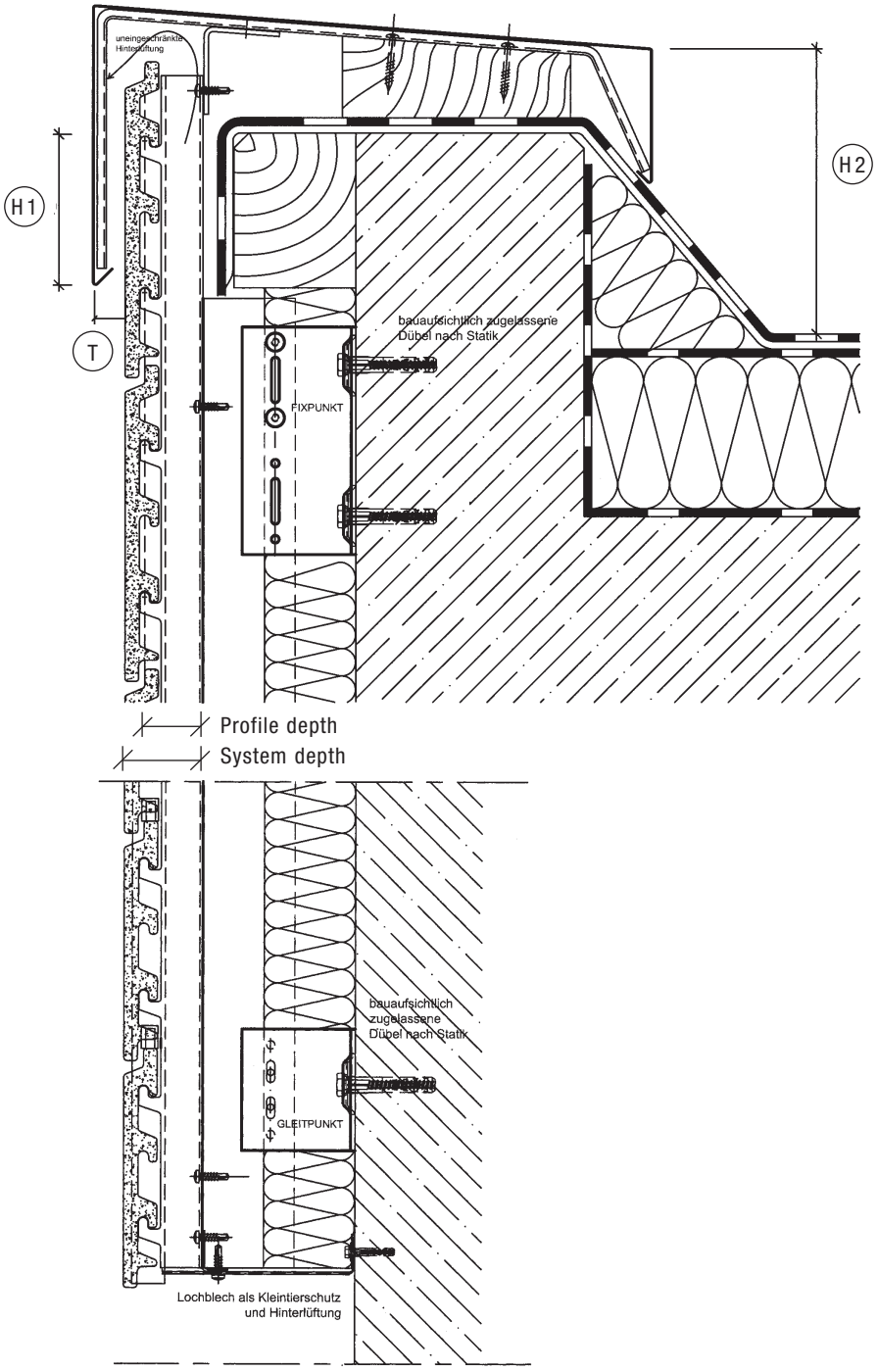
Calculation values

Profile depth/system depth	17 mm / 46 mm	27 mm / 56 mm	37 mm / 66 mm
Cross-sectional area	1.72 cm^2	2.12 cm^2	2.52 cm^2
Moment of inertia	I_y = 0.28 cm^4 I_z = 7.97 cm^4	I_y = 1.22 cm^4 I_z = 11.34 cm^4	I_y = 3.13 cm^4 I_z = 14.71 cm^4
Moment of resistance	W_{yo} = 0.24 cm^3 W_{yu} = 0.86 cm^3 W_{yz} = 2.66 cm^3	W_{yo} = 0.66 cm^3 W_{yu} = 1.90 cm^3 W_{yz} = 3.78 cm^3	W_{yo} = 1.26 cm^3 W_{yu} = 3.08 cm^3 W_{yz} = 4.90 cm^3



E-module = 70,000 N/mm2, acc. to DIN 4113-1

Detail Roof Parapet Edge, Detail Base Joint - Adaptive System



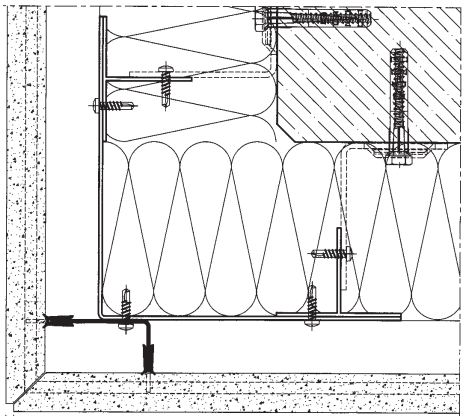
Adaptive System (ADS)
Vertical section roof parapet
Requirements acc. to pitched roof regulations

(H1) The external vertical side of coverings or edge profiles should overlap the upper edge of the plaster or claddings.
Building height:
up to 8 m: min. 50 mm
over 8 up to 20 m: min. 80 mm
over 20 m: min. 100 mm

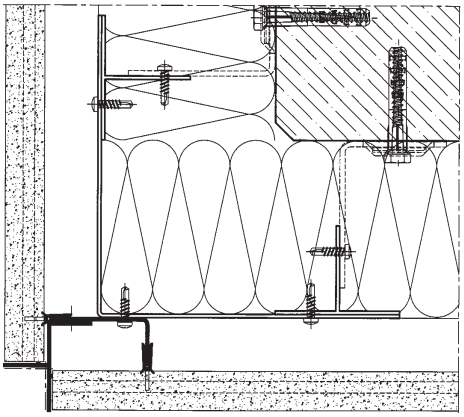
(H2) The height of roof edge borders should be approx. 100 mm with roof pitches of up to 5°
approx. 50 mm with roof pitches > 5°
above the covering surface resp. gravel layer.
Roof edge borders must have an inclination towards the roof side.

(T) The projection of coverings or edge profiles must maintain a drip edge of at least 20 mm distance from the building components to be protected.

Detail External Corner of Building – Adaptive System on Vertical Sub-Construction



A



B

External corner 90° - TONALITY® on vertical primary sub-construction.

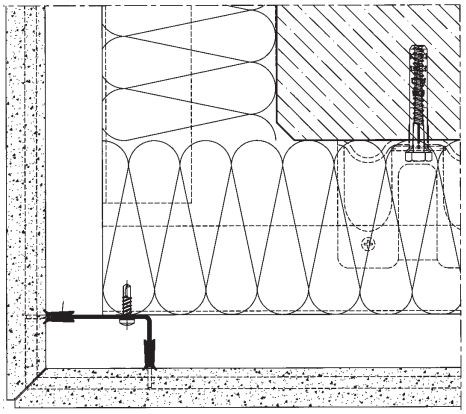
A) External corner: TONALITY® with miter cut
   – Vertical profile external corner 45 x 74
   – Supporting profile

In case of miter cut, the edges must have a bevel of 4 mm. The fixation of the vertical profile is effected on an aluminum bracket.

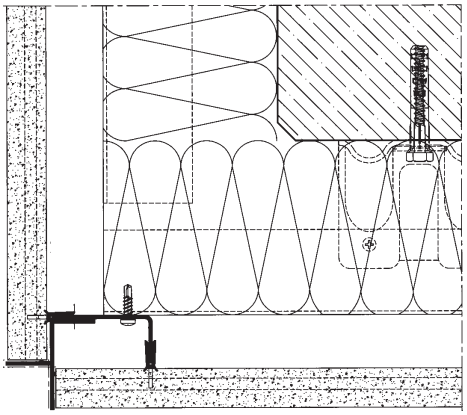
B) External corner: TONALITY® with corner profile
   – Vertical profile external corner 45 x 74
   – Supporting profile
   – Visible external corner profile

The fixation of the vertical profile is effected on an aluminum bracket.

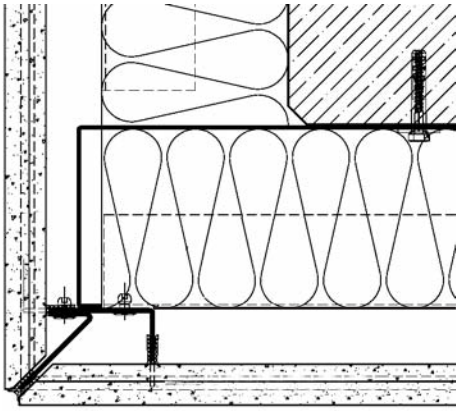
Detail External Corner of Building – Adaptive System on Horizontal Sub-Construction



C



D



E

External corner 90° - TONALITY® on horizontal primary sub-construction.

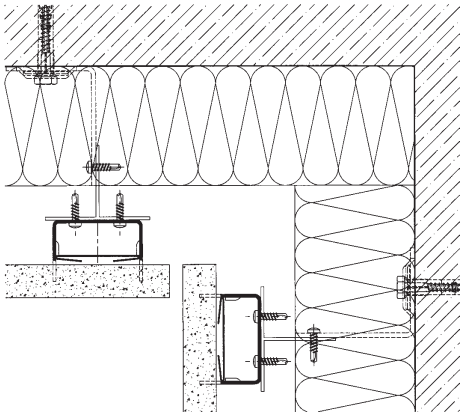
C) External corner: TONALITY® with miter cut
   – Vertical profile external corner 45 x 74
   – Supporting profile

In case of miter cut, the edges must have a bevel of 4 mm.

D) External corner: TONALITY® with corner profile
   – Vertical profile external corner 45 x 74
   – Supporting profile
   – Visible external corner profile (anodized E6EV1 / semimachined)

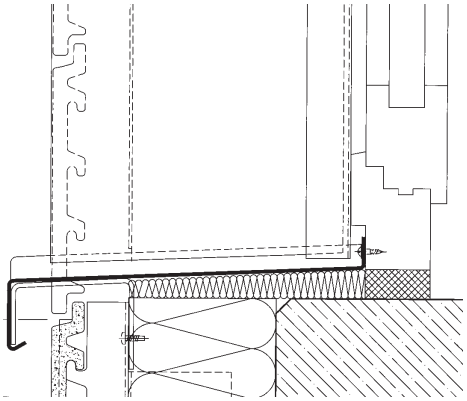
E) External corner: TONALITY® with vertical wind barrier for reduced wind pressure according to DIN 1055-4:2005-03

Detail Internal Corner of Building – Adaptive System

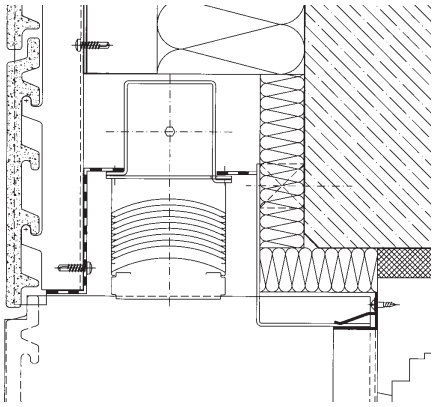


Internal corner 90° with adaptive system end profile

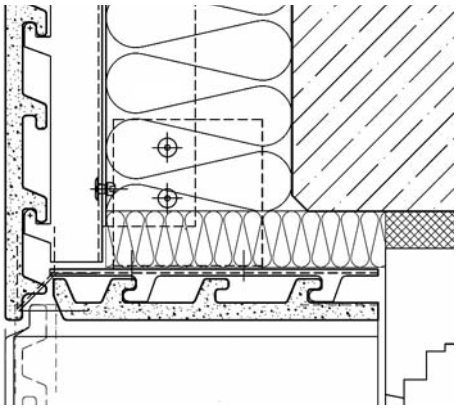
Detail Window – Adaptive System



A



B



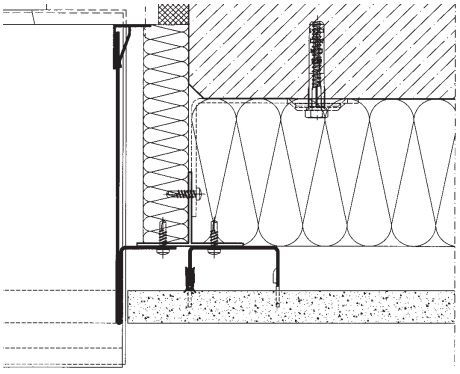
C

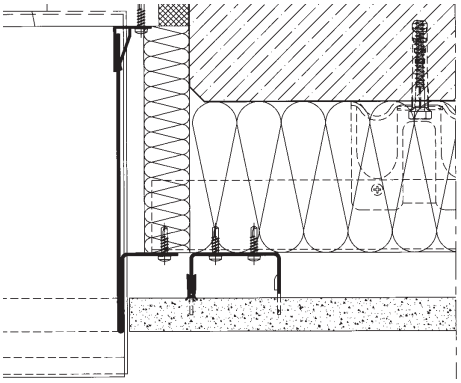
Vertical section
Window, lintel and parapet

A) without sun protection

B) with integrated sun protection

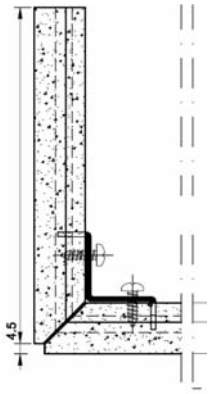
C) parapet of cladding tiles

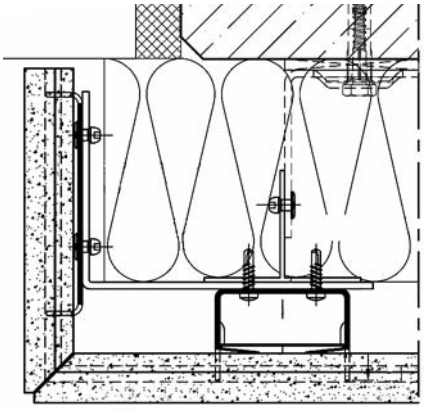




Horizontal section
Window reveal with vertical primary sub-construction.

Horizontal section
Window reveal with horizontal primary sub-construction.

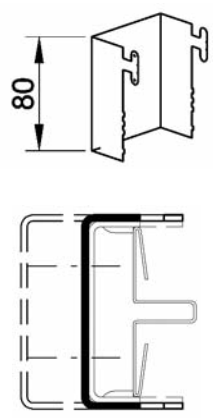


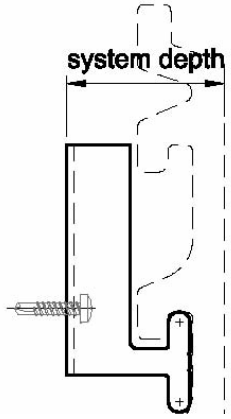


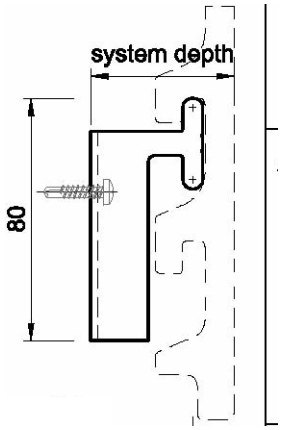
Horizontal section
Window reveal of cladding tiles with reveal clamp.
Tile length up to max. 150 mm.

Horizontal section
Window reveal of cladding tiles with reveal / lintel profile on vertical primary sub-construction.

Adaptive Piece Additional Support

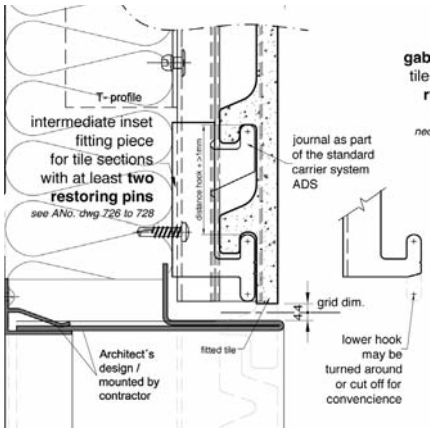




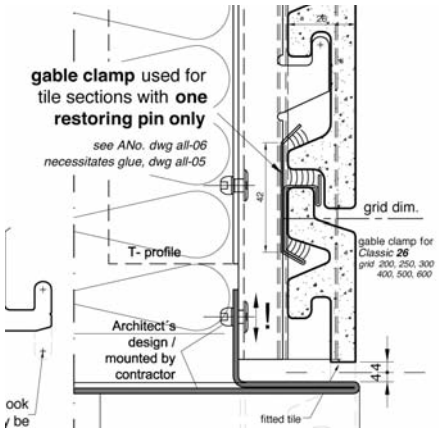


The adaptive piece is used in connection with horizontally slit fitting tile. A second mounting possibility must be given on the profile of the adaptive system. Fastening pinned from the back onto the profile of the adaptive system.

Detail – Window Fitting Tile with Adapter Piece or Gable Clamp for Adaptive System



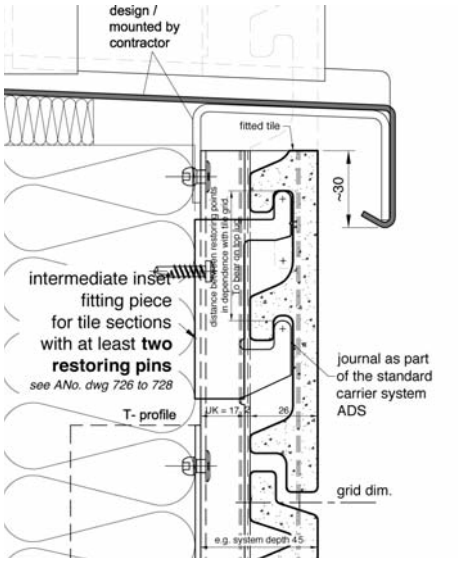
A



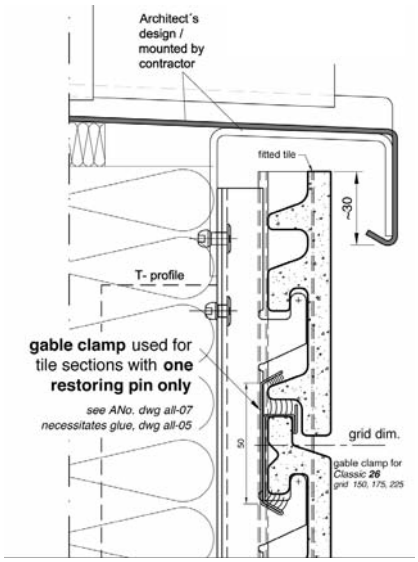
B

A) Vertical section
Adapter piece for tile segments with at least two mounting agraffes

B) Vertical section
Pediment clamp for tile segments with only one mounting agraffes



C

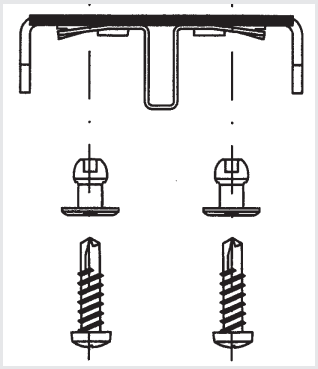


D

C) Vertical section
Adapter piece for tile segments with at least two mounting agraffes

D) Vertical section
Pediment clamp for tile segments with only one mounting agraffes

TONALITY® System Sub-Construction Base Clinch Rail System



The TONALITY® Base Clinch Rail System (BAS) can be fastened on a vertical primary sub-construction. Joints and bearing profile are already permanently joined by the manufacturer. Corners with miter cut require the use of the TONALITY® external corner profile 90° and in case of open corners, the installation requires the use of the TONALITY® external corner profile of 30 x 30 mm. Reveal/lintel profiles are available for the fastening in the area of windows and doors. Bias-cut tiles are fixed using TONALITY® gable clamps with special glue.

Choice of profile	**Tile height (mm)**	**Profile length (mm)**
The agraffe retainers produce different profiles and profile lengths of the sub-construction as a result of the respective tile height	150	2,694
	175	2,794
	200	2,794
	225	2,694
	250	2,744
	300	2,694
	400	2,794

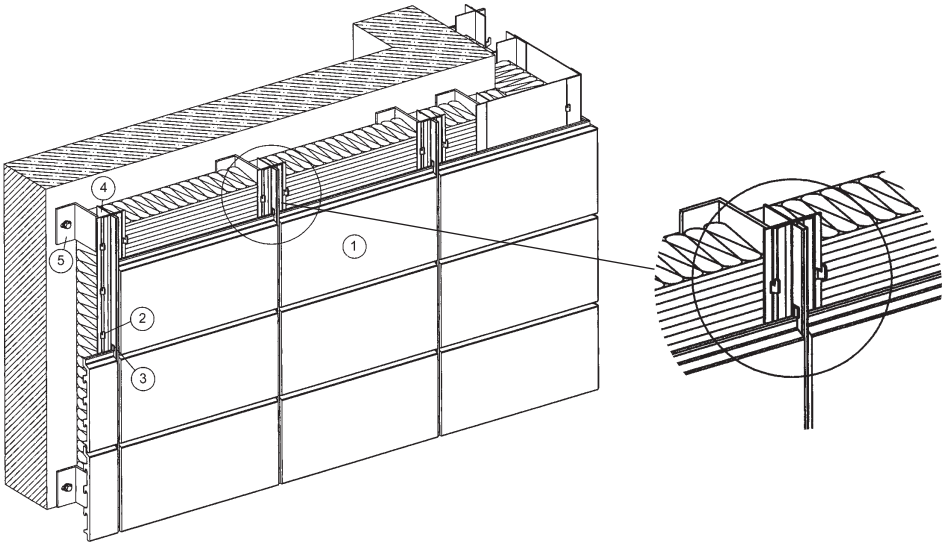
Delivery range: The profiles have a length of approx. 2,800 mm

Illustration	Description	Color / Material
	TONALITY® Base Clinch Rail Profile 20 x 60 x 20 mm, system depth 31 mm, closed joint 21 mm	Semimachined Aluminium
	TONALITY® Base Clinch Rail Profile 20 x 60 x 20 mm, system depth 31 mm, closed joint 29 mm	Semimachined Aluminium
	TONALITY® Base Clinch Rail Profile 20 x 60 x 20 mm, system depth 31 mm, fine joint 21 mm	Semimachined Aluminium
	TONALITY® Base Clinch Rail Profile 20 x 60 x 20 mm, system depth 31 mm, fine joint 29 mm	Semimachined Aluminium
	TONALITY® End profile 20 x 40 x 20 mm system depth 31 mm	Semimachined Aluminium
	TONALITY® External corner profile 20 x 40 x 40 x 20 mm system depth 31 mm	Semimachined Aluminium
	TONALITY® Reveal/lintel profile narrow, profile width 40 mm for all system depths	Semimachined Aluminium

Illustration	Description	Color / Material
	TONALITY® Reveal/lintel profile wide, profile width 100 mm for all system depths	Semimachined Aluminium
	TONALITY® External corner profile 30 x 30 mm	Anodized E6EV1 (Special: Semimachined)
	TONALITY® Gable clamps for all system depths and modules	Semimachined Aluminium
	Glue for gable clamps Consumption: 1 cartridge for 30 clamps	Semimachined Aluminium
	Sealing gasket profile for wind barrier 27 x 64 mm	Semimachined Aluminium
	Joint profile (wind barrier) 8 / 17 mm	CR Neoprene black

Aluminium quality = EN AW 5754 according to DIN EN 755-2

Base Clinch Rail System on Vertical Sub-Construction



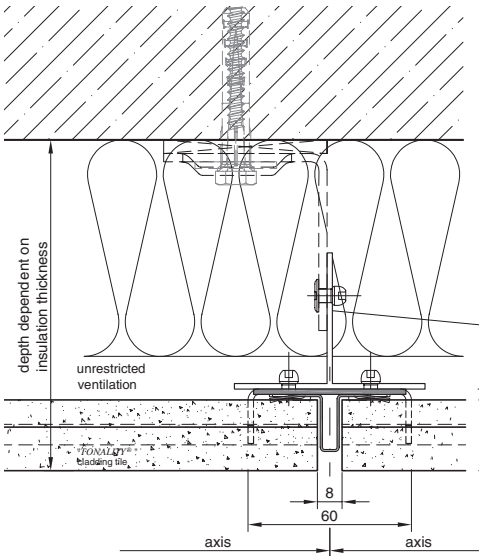
Base Clinch Rail System (BAS)

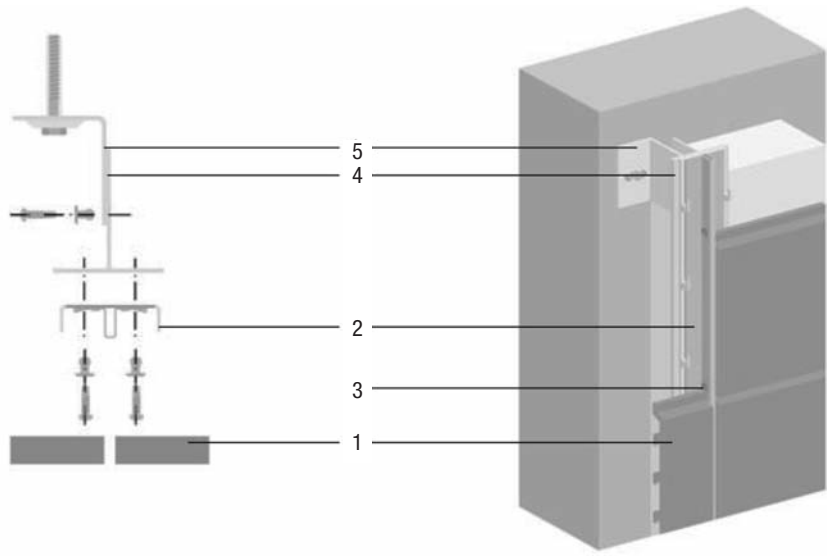
1 TONALITY® Cladding tile
2 TONALITY® Base Clinch Rail System
3 TONALITY® Protection against dismantling
4 Primary sub-construction aluminum T-profile
5 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

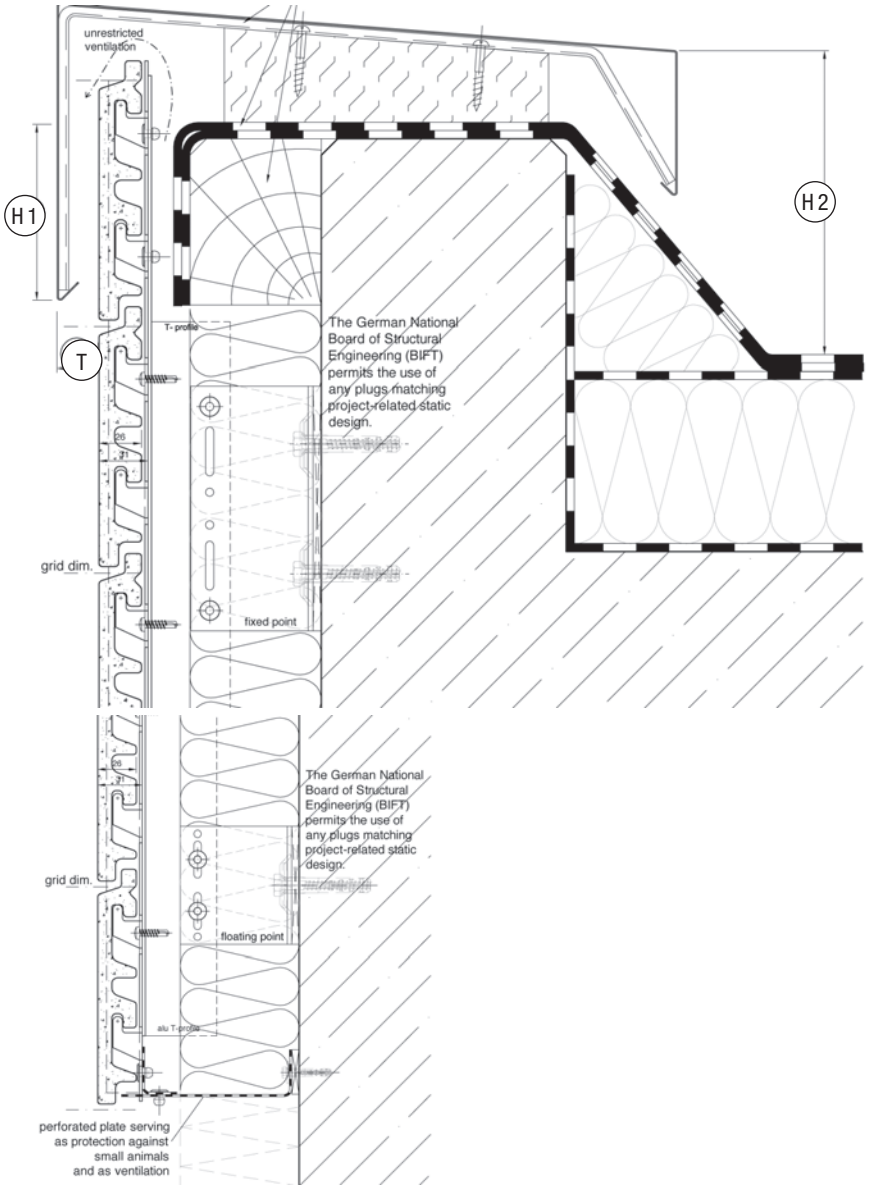
Primary sub-construction

Distances, kinds of brackets and plugs, as well as rivets resp. drilling screws are subject to structural calculation for the respective building project!





Detail Roof Parapet Edge, Detail Base Joint - Base Clinch Rail System



Base Clinch Rail System (BAS)
Vertical section roof parapet
Requirements acc. to pitched roof regulations

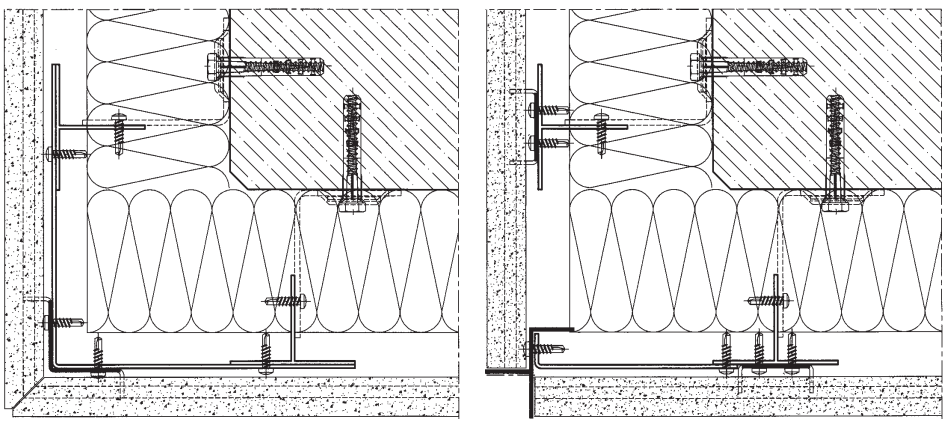
(H1) The external vertical side of coverings or edge profiles should overlap the upper edge of the plaster or claddings.
Building height:

up to 8 m:	min. 50 mm
over 8 up to 20 m:	min. 80 mm
over 20 m:	min. 100 mm

(H2) The height of roof edge borders should be approx. 100 mm with roof pitches of up to 5°
approx. 50 mm with roof pitches > 5°
above the covering surface resp. gravel layer.
Roof edge borders must have an inclination towards the roof side.

(T) The projection of coverings or edge profiles must maintain a drip edge of at least 20 mm distance from the building components to be protected.

Detail External Corner of Building – Base Clinch Rail System



A B

External corner 90° – TONALITY® on vertical primary sub-construction.

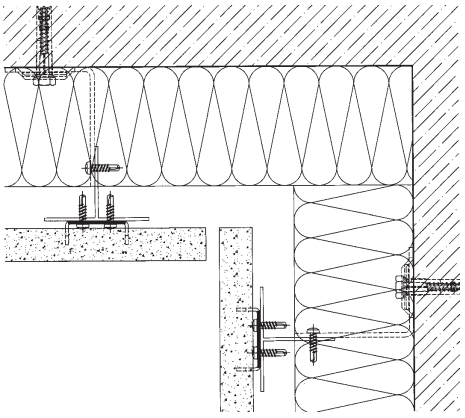
A) External corner: TONALITY® with miter cut
– External corner profile 90° 16 x 40 x 40 mm

In case of miter cut, the edges must have a bevel of 4 mm. The fixation of the external corner profile is effected on an aluminum bracket.

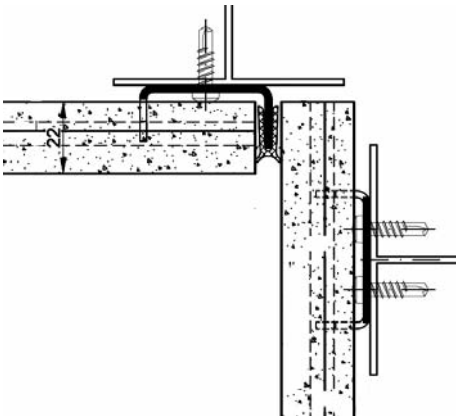
B) External corner: TONALITY® with corner profile
– Visible external corner profile 30 x 30 mm (anodized E6EV1 / Semimachined)

The fixation of the external corner profile is effected on an aluminum bracket.

Detail Internal Corner of Building – Base Clinch Rail System

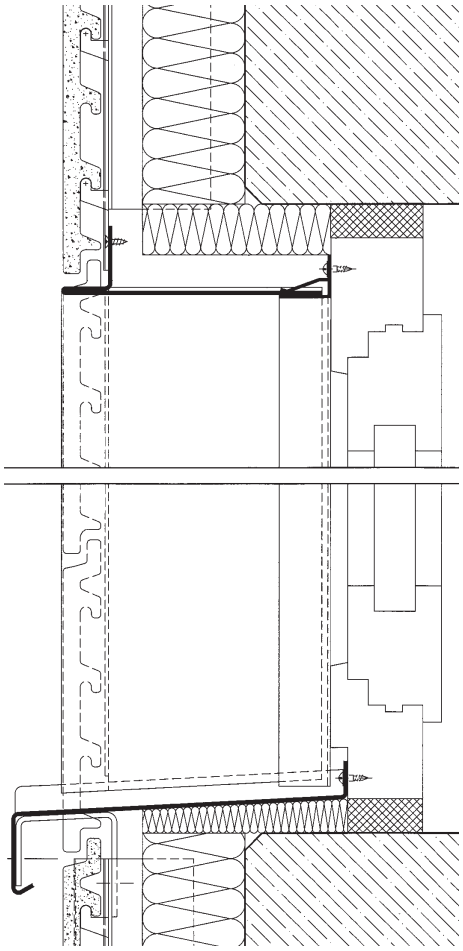


Horizontal section
Internal corner 90° with Base Clinch Rail profile

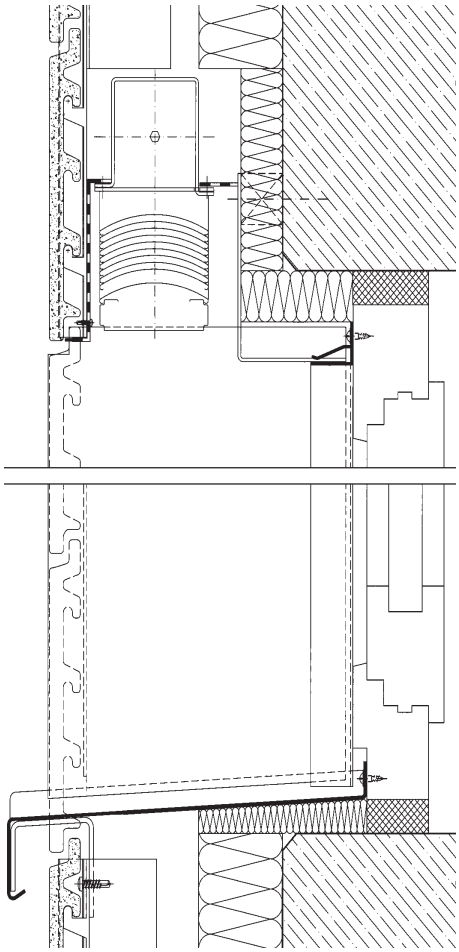


Horizontal section
Internal corner 90° with Base Clinch Rail end and sealing profile

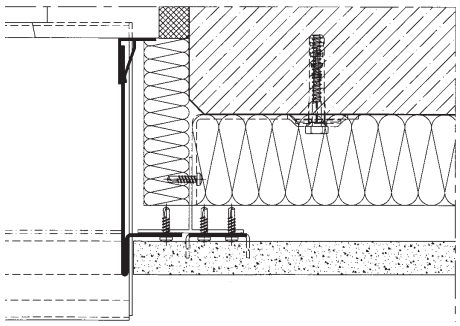
Detail Window – Base Clinch Rail System



Vertical section
Window, lintel and parapet
without sun protection

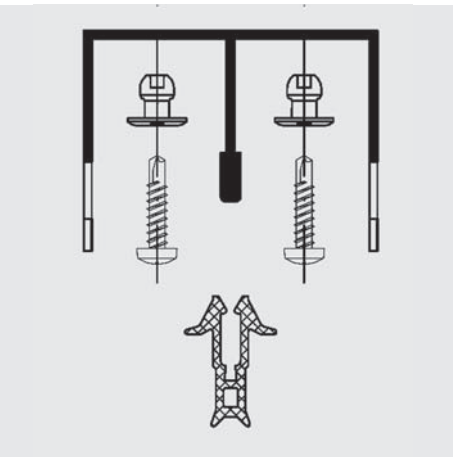


Vertical section
Window, lintel and parapet
with integrated sun protection



Horizontal section
Window reveal with vertical primary sub-construction Base Clinch Rail System.

TONALITY® System Sub-Construction Classic Profile System on Metal Sub-Construction



The TONALITY® Classic Profile System (CLS) can be fastened on a horizontal or vertical primary sub-construction. The vertical profiles of the TONALITY® Classic Profile System has a vertical plate on which the TONALITY® Classic joint profile of Neoprene is put on. This will produce a joint of 9 mm. Miter cut corners require the use of the external corner profiles available for the left and right side and for all system depths. In the event of open corners with profiles and system depths of 56 and 66 mm, the installation requires the use of the TONALITY® external corner profile of 30 x 30 mm. The TONALITY® supporting profile prevents the generation of noise in the agraffe retainers. Reveal/lintel profiles are available for the fastening in the area of windows and doors. Bias-cut tiles are fixed using TONALITY® gable clamps with special glue.

Choice of profile	**Tile height (mm)**	**Profile length (mm)**
The agraffe retainers produce different profiles and profile lengths of the system sub-construction as a result of the respective tile height	150	2,694
	175	2,794
	200	2,794
	225	2,694
	250	2,744
	300	2,694
	400	2,794

Delivery range: Profiles have a length of approx. 2,800 mm

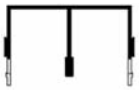
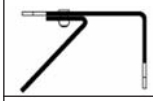
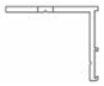
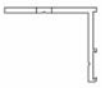
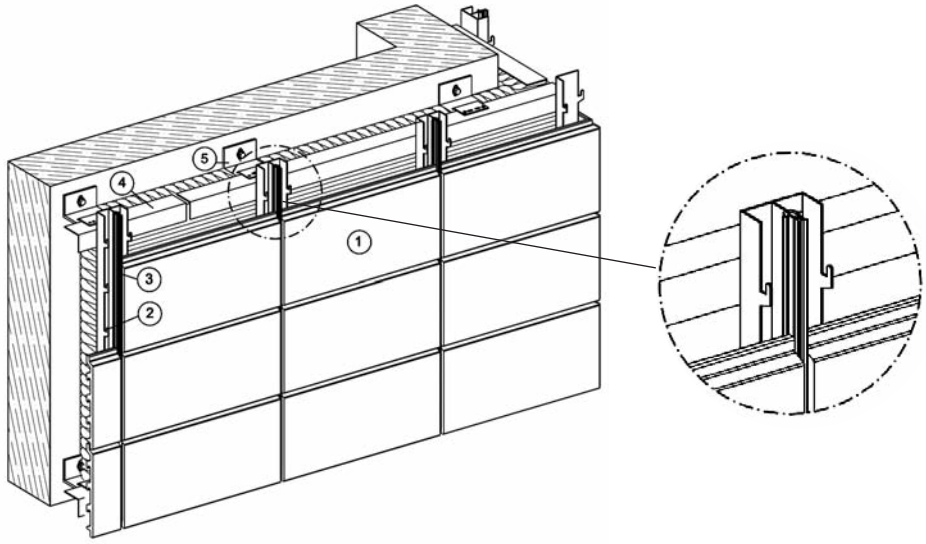
Illustration	Description	Color / Material
	TONALITY® Classic vertical profile 45 x 62 x 45 mm, system depth 56 mm	Semimachined Aluminium
	TONALITY® Classic Adapter piece for vertical profile 45 x 62 x 45 mm, system depth 56 mm	Semimachined Aluminium
	TONALITY® Vertical profile external corner 74 x 45 mm, usable on both sides, system depth 56 mm	Semimachined Aluminium
	TONALITY® Vertical profile external corner 74 x 45 mm, sealing gasket profile on the left, system depth 56 mm	Semimachined Aluminium
	TONALITY® Vertical profile external corner 74 x 45 mm, sealing gasket profile on the right, system depth 56 mm	Semimachined Aluminium
	TONALITY® Reveal/lintel profile narrow, 20 x 40 x 20 mm, system depth 31 mm	Semimachined Aluminium
	TONALITY® Vertical profile as end profile 45 x 60 x 45 mm, system depth 56 mm	Semimachined Aluminium
	TONALITY® Protection against dismantling, 45 x 20 mm, system depth 56 mm	Semimachined Aluminium
	TONALITY® Slide bearing, 31 x 31 mm, pre-punched short pieces, system depth 56 mm	Semimachined Aluminium

Illustration	Description	Color / Material
	TONALITY® Slide bearing, 31 x 31 mm, bar-shaped, system depth 56 mm	Semimachined Aluminium
	TONALITY® Joint profile for the vertical profile	Black CR-Neoprene
	TONALITY® Supporting profile, 60 mm for all system depths and modules	Black CR-Neoprene
	TONALITY® Joint profile for corner and end joints	Black Cr-Neoprene
	TONALITY® External corner profile, 30 x 30 mm, for all modules with system depth 56 / 66 mm	Anodized E6EV1
	TONALITY® Installation template please indicate tile length	Semimachined Aluminium
	TONALITY® Gable clamps for all system depths and modules	Semimachined Aluminium
	Glue for gable clamps Consumption: 1 cartridge for 30 clamps	

Aluminium quality = EN AW 5754 according to DIN EN 755-2

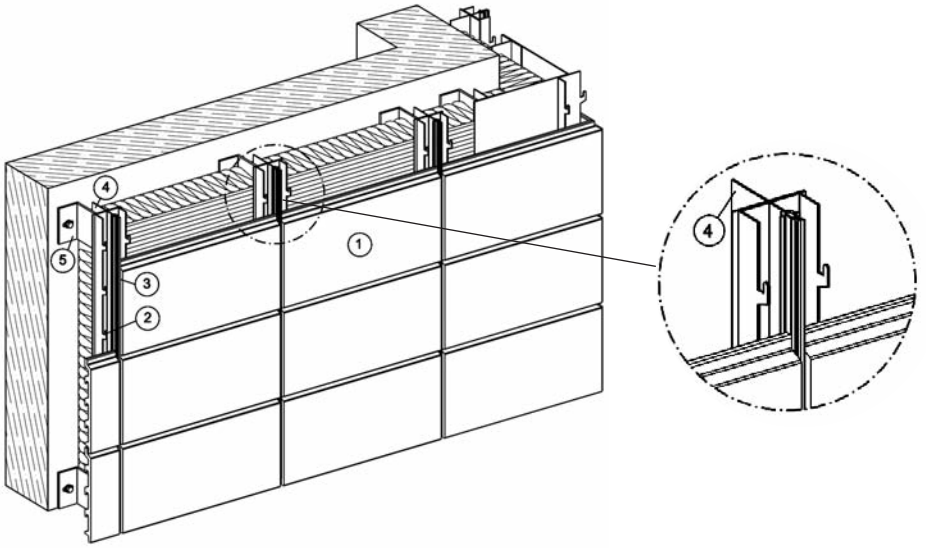
Classic Profile System on Horizontal Sub-Construction



Classic Profile System (CLS)
1 TONALITY® Cladding tile
2 TONALITY® Classic vertical profile metal
3 TONALITY® Classic joint profile Neoprene
4 Primary sub-construction aluminum T-profile
5 Primary sub-construction metal wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

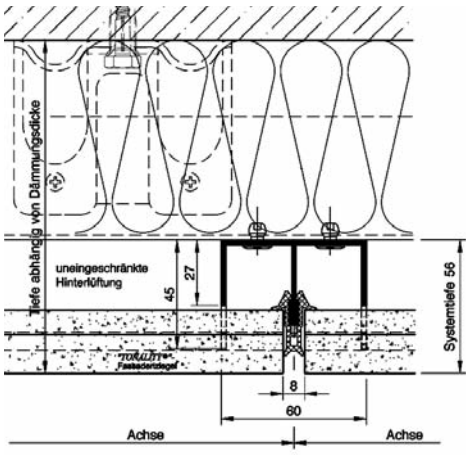
Classic Profile System on Vertical Sub-Construction



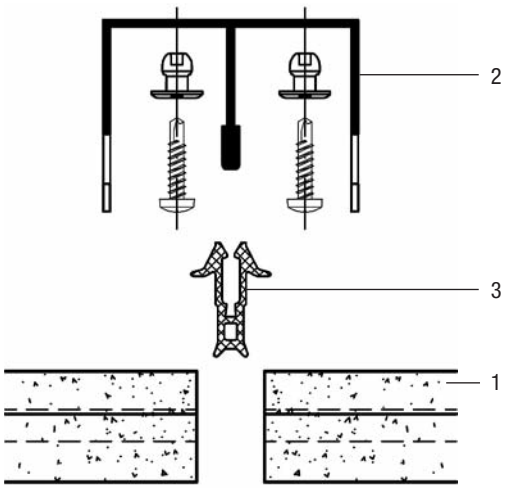
Classic Profile System (CLS)
1 TONALITY® Cladding tile
2 TONALITY® Classic vertical profile metal
3 TONALITY® Classic joint profile Neoprene
4 Primary sub-construction aluminum T-profile
5 Primary sub-construction aluminum wall fastening

The primary sub-construction is subject to structural analysis suited to the respective building project and does not constitute a component of the TONALITY® system range.

Primary sub-construction
Distances, kinds of brackets and plugs, as well as rivets resp. drilling screws are subject to structural calculation for the respective building project!

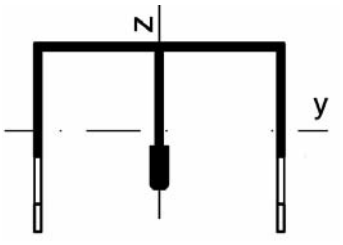


TONALITY® Classic Profile System



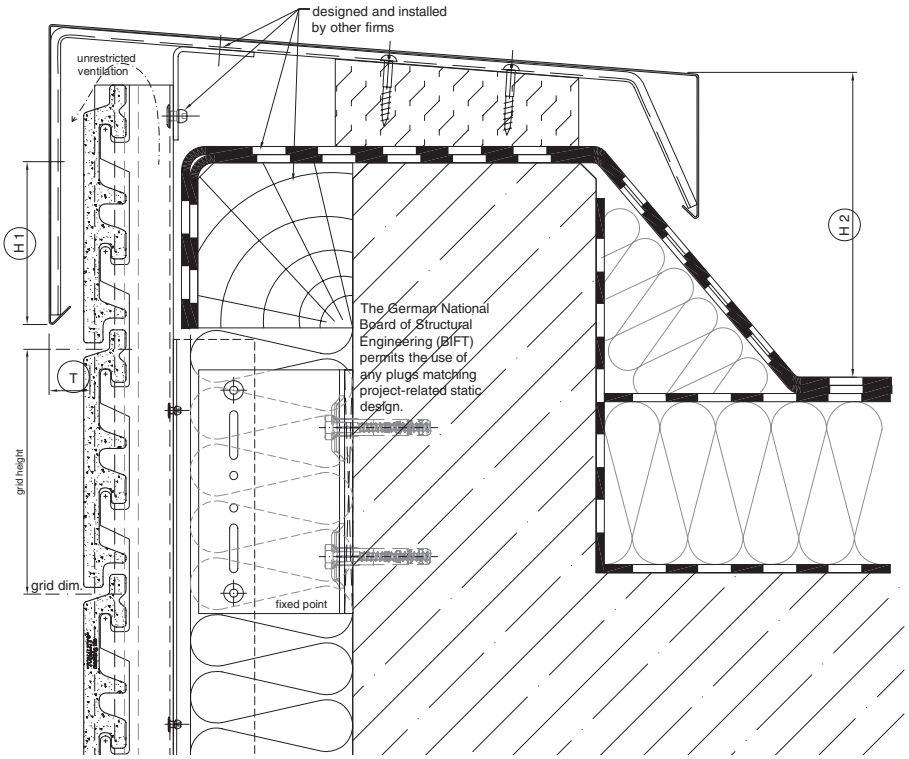
Calculation values

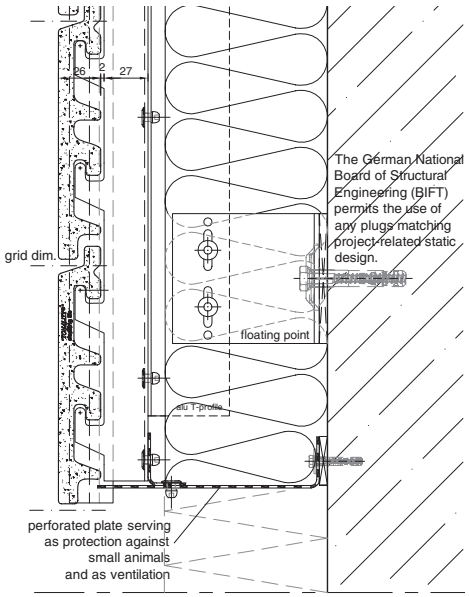
Profile depth/system depth	31 mm
Cross-sectional area	2.76 cm^2
Moment of inertia	I_y = 3.37 cm^4 I_z = 11.61 cm^4
Moment of resistance	W_{yo} = 1.49 cm^3 W_{yu} = 2.73 cm^3 W_{yz} = 3.77 cm^3



E-module = 70,000 N/mm2, acc. to DIN 4113-1

Detail Roof Parapet Edge, Detail Base Joint – Classic Profile System





Classic Profile System (CLS)
Vertical section roof parapet
Requirements acc. to pitched roof regulations

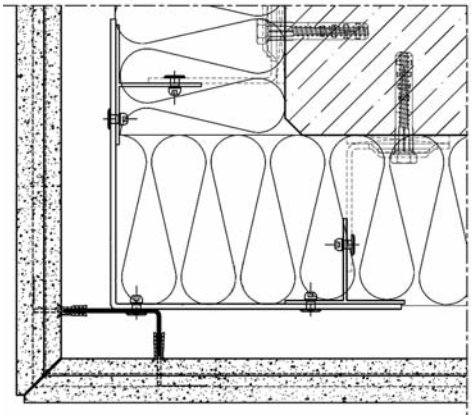
(H1) The external vertical side of coverings or edge profiles should overlap the upper edge of the plaster or claddings.
Building height:

up to 8 m:	min. 50 mm
over 8 up to 20 m:	min. 80 mm
over 20 m:	min. 100 mm

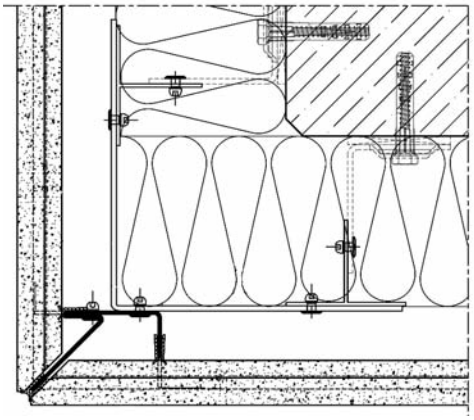
(H2) The height of roof edge borders should be approx. 100 mm with roof pitches of up to 5°
approx. 50 mm with roof pitches > 5°
above the covering surface resp. gravel layer.
Roof edge borders must have an inclination towards the roof side.

(T) The projection of coverings or edge profiles must maintain a drip edge of at least 20 mm distance from the building components to be protected.

Detail External Corner of Building – Classic Profile System on Vertical Sub-Construction



A



B

External corner 90° – TONALITY® on vertical primary sub-construction.

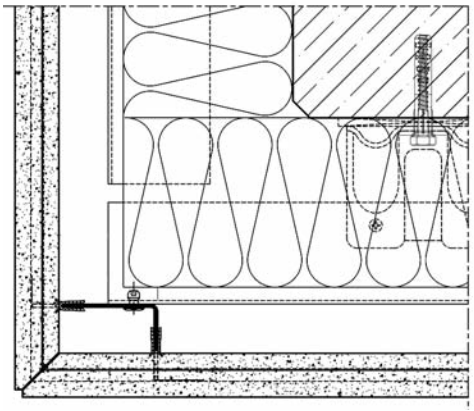
A) External corner: TONALITY® with miter cut
   – Vertical profile external corner 45 x 70 x 2 mm
   – Supporting profile

In case of miter cut, the edges must have a bevel of 4 mm. The fixation of the vertical profile is effected on an aluminum bracket.

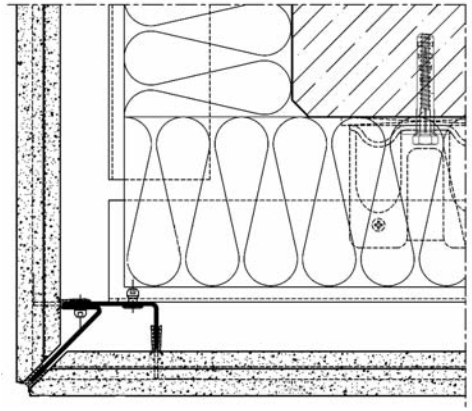
B) External corner: TONALITY® with corner profile
   – Vertical profile external corner
   – Supporting profile
   – Joint profile of Neoprene

The fixation of the vertical profile is effected on an aluminum bracket.

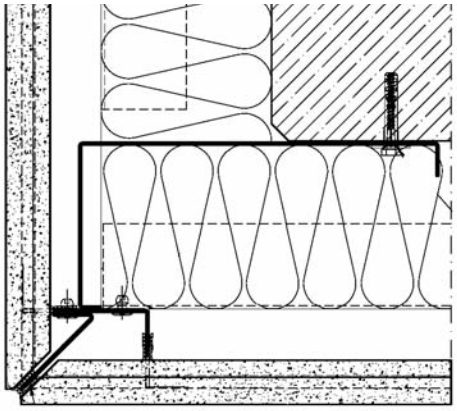
Detail External Corner of Building – Classic Profile System on Horizontal Sub-Construction



C



D



E

External corner 90° – TONALITY® on horizontal primary sub-construction.

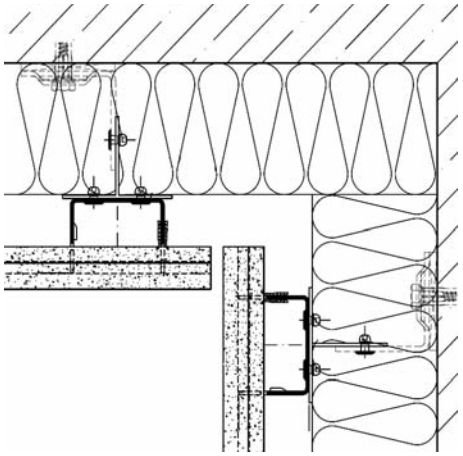
C) External corner: TONALITY® with miter cut
   – Vertical profile external corner 41 x 70 x 2
   – Supporting profile

In case of miter cut, the edges must have a bevel of 4 mm.

D) External corner: TONALITY® with corner profile
   – Vertical profile external corner
   – Supporting profile
   – Joint profile of Neoprene

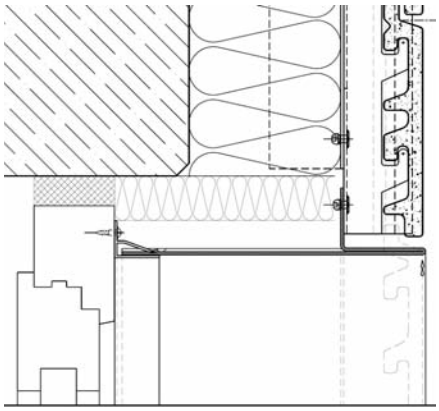
E) External corner: TONALITY® with vertical wind barrier for reduced wind pressure according to DIN 1055-4:2005-03

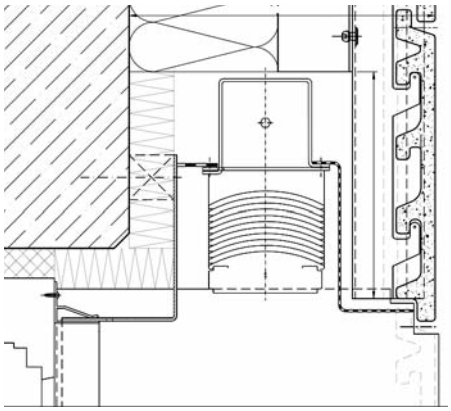
Detail Internal Corner of Building – Classic Profile System



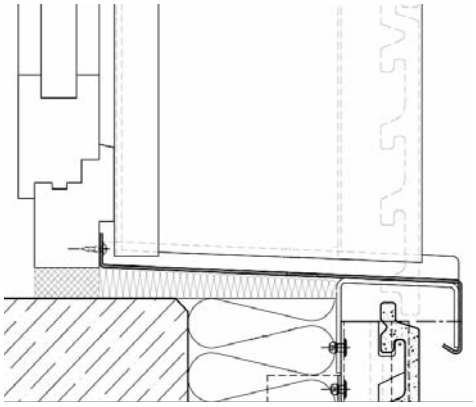
Internal corner 90° with Classic Profile System

Detail Window – Classic Profile System





B

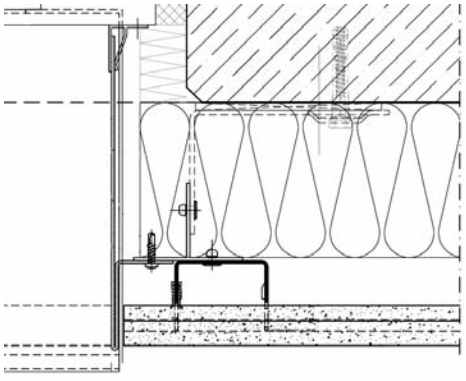


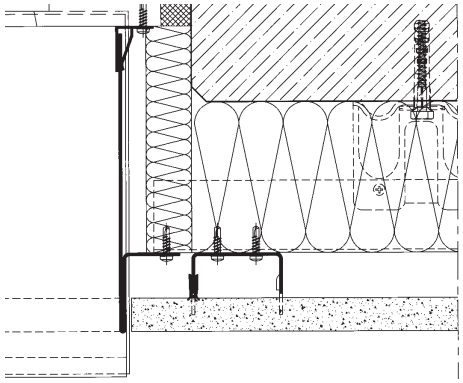
A

Vertical section
Window, lintel and parapet

A) without sun protection

B) with integrated sun protection

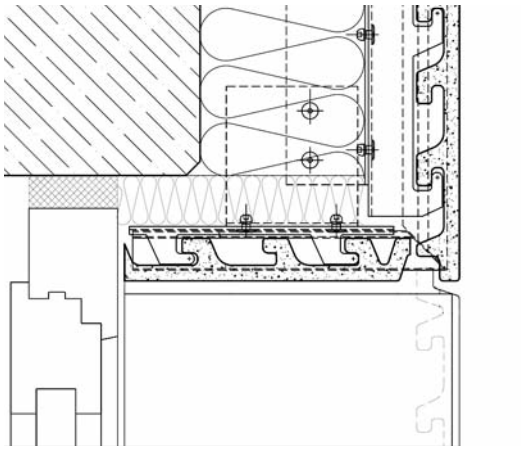




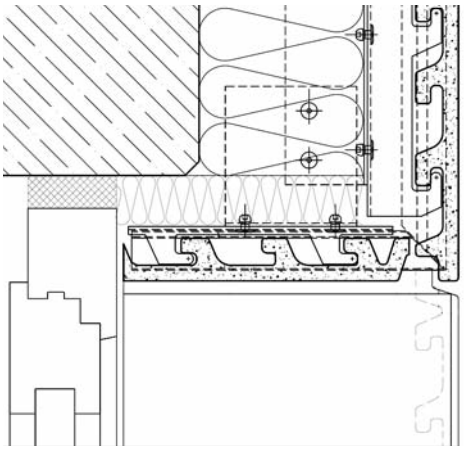
Horizontal section
Window reveal with vertical primary sub-construction.

Horizontal section
Window reveal with horizontal primary sub-construction

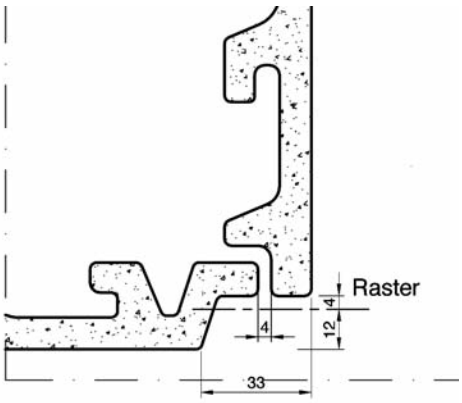
Detail – Window with Tile Reveal of the Classic Profile System



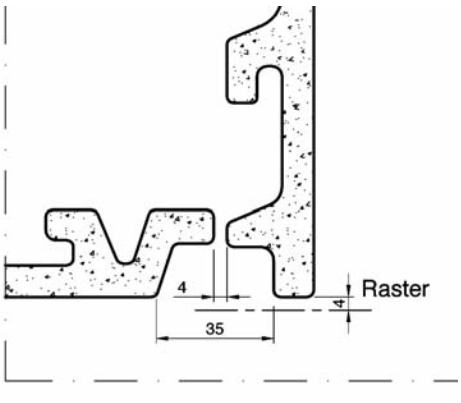
Vertical section window lintel with tile reveal



Variant 1: Installation from the back

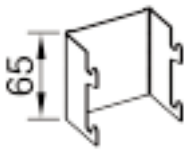


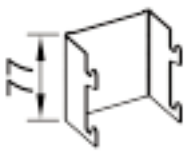
Variant 2: Tile height-staggered



Variant 3: Tile uncut

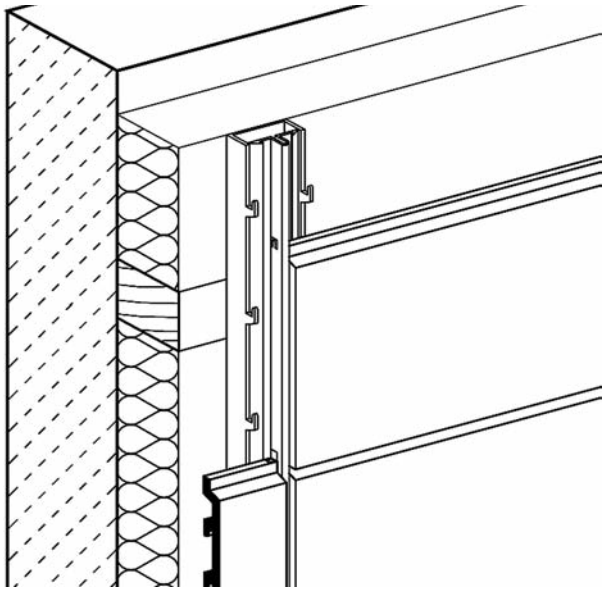
Adaptive Piece Additional Support





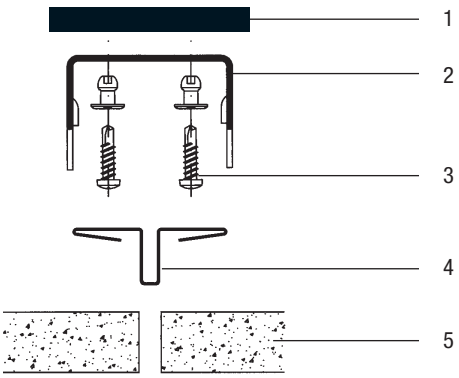
The adaptive piece is used in connection with horizontally slit fitting tile. A second mounting possibility must be given on the profile of the classic profile system. Fastening pinned from the back onto the profile of the classic profile system.

TONALITY® System Sub-Construction of Adaptive, Base Clinch Rail and Classic Profile Systems on Wooden Primary Sub-Construction

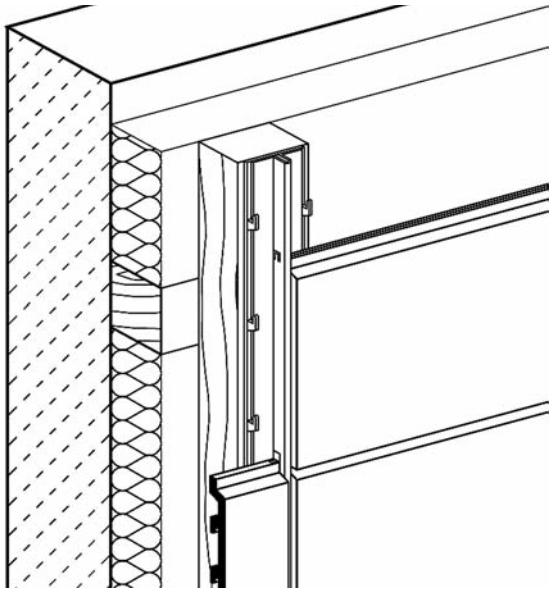


Adaptive System on horizontal wooden sub-construction

System structure of the Adaptive System

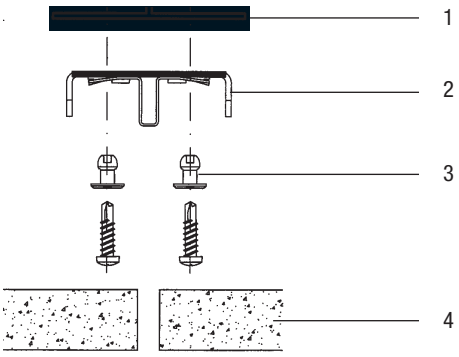


1 Wooden sub-construction
2 Vertical profile of the TONALITY® Adaptive System
3 Rivet / drilling screw / woodscrew
4 Joint profile of TONALITY® Adaptive System
5 TONALITY® Cladding tile



Base Clinch Rail Profile on vertical wooden sub-construction

System structure of the Base Clinch Rail System

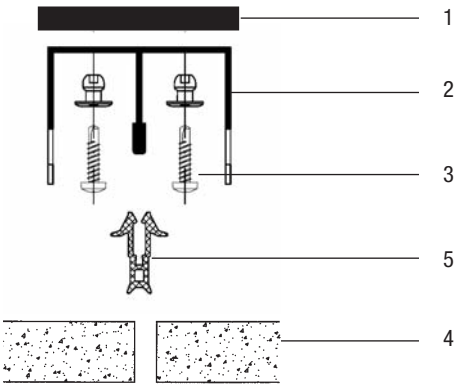


1 Wooden sub-construction
2 Profile of the TONALITY® Base Clinch Rail System
3 Rivet / drilling screw / woodscrew
4 TONALITY® Cladding tile

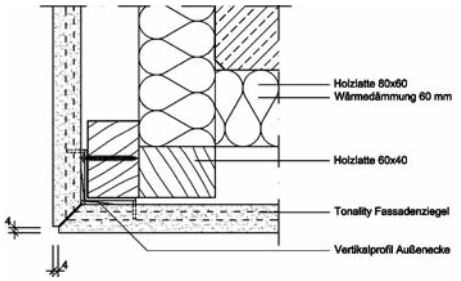
The installation of the Classic Profile System on a wooden sub-construction is possible as well.

1 Wooden sub-construction
2 Profile of the TONALITY® Classic Profile System
3 Rivet / drilling screw / woodscrew
4 TONALITY® Cladding tile
5 Joint profile of the Classic Profile System

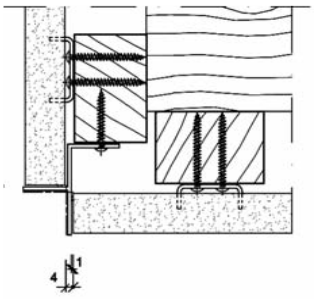
System structure of the Classic Profile System



Detail External Corner of Building – Wooden Primary Sub-Construction

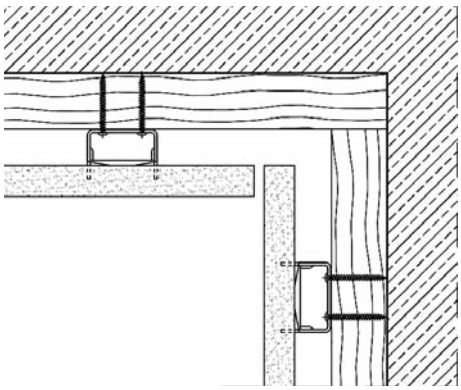


Horizontal section
External corner with miter cut



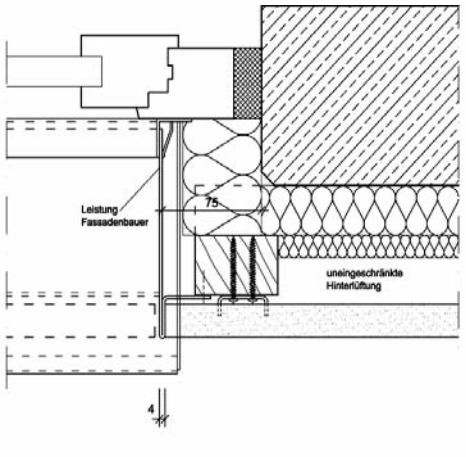
Horizontal section
External corner with external corner profile

Detail Internal Corner of Building – Wooden Primary Sub-Construction

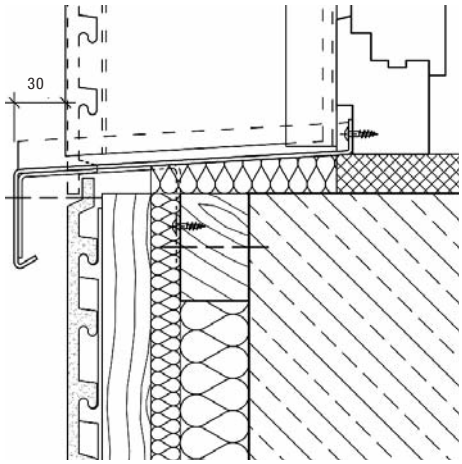


Horizontal section
Internal corner

Detail Window – Wooden Primary Sub-Construction



Horizontal section
Window reveal with metal frame on
wooden sub-construction

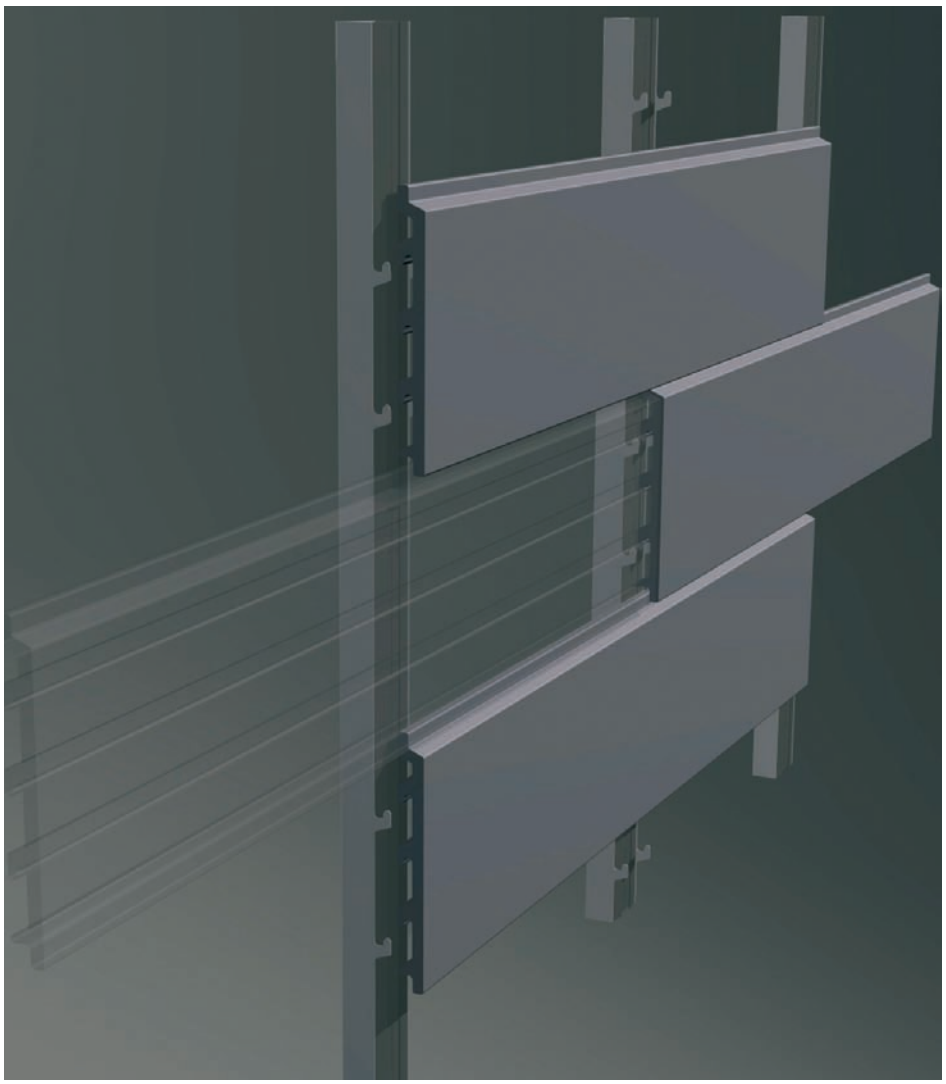


Vertical section
Window sill connection on
wooden sub-construction

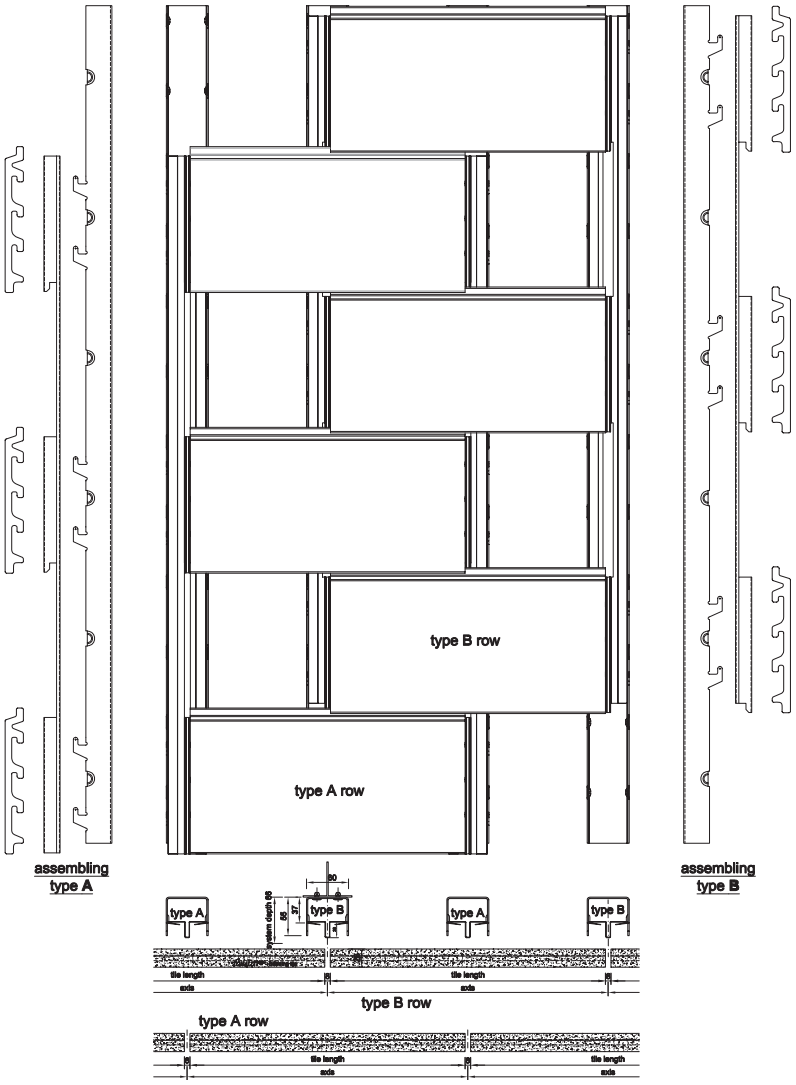
TONALITY® Adaptive System T-Line®

The TONALITY® System sub-construction T-Line allows to create the classic appearance of brickwork. It is suitable for all kinds of tiles and tile sizes. As an adaptive system, T-Line can be realized on vertical as well as on horizontal sub-constructions.

The TONALITY® Adaptive System T-Line consists of type A and type B profiles that are fastened alternately on the primary sub-construction. Type A and type B joint profiles are available as joint profile with a closed joint of 8 mm.



TONALITY® Adaptive System T-Line



Delivery range:

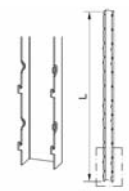
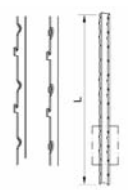
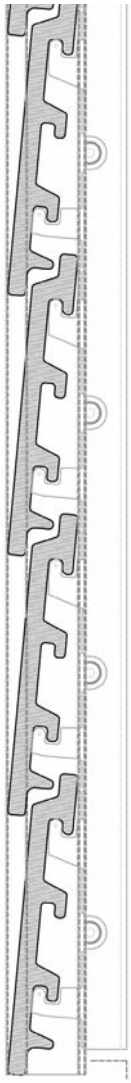
Illustration	Description	Color / Material
	TONALITY® T-Line vertical profile type A 35 x 60 x 35 mm system depth 46 mm	Semimachined Aluminium
	TONALITY® T-Line vertical profile type A 45 x 60 x 45 mm system depth 56 mm	Semimachined Aluminium
	TONALITY® T-Line vertical profile type A 55 x 60 x 55 mm system depth 66 mm	Semimachined Aluminium
	TONALITY® T-Line joint profile type A closed 8 mm 56 x 23 mm	RAL 7021 (blackgray) Aluminium
		

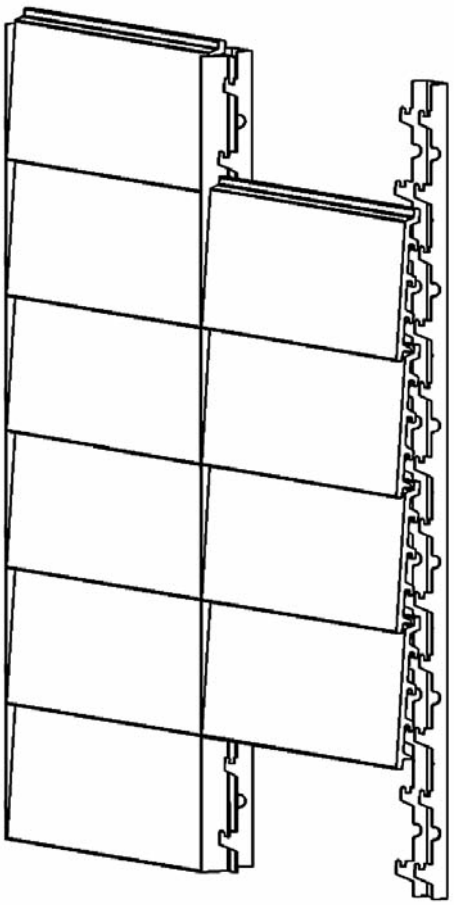
Illustration	Description	Color / Material
	TONALITY® T-Line vertical profile type B 35 x 60 x 35 mm system depth 46 mm	Semimachined Aluminium
	TONALITY® T-Line vertical profile type B 45 x 60 x 45 mm system depth 56 mm	Semimachined Aluminium
	TONALITY® T-Line vertical profile type B 55 x 60 x 55 mm system depth 66 mm	Semimachined Aluminium
	TONALITY® T-Line joint profile type B closed 8 mm 56 x 23 mm	RAL 7021 (blackgray) Aluminium
		

Aluminium quality = EN AW 5754 according to DIN EN 755-2

Adaptive System TONALITY® SIDING®

The TONALITY® Siding sub-construction is perfectly suitable for the design of a TONALITY® cladding tile façade with the appearance of weatherboarding.
The realization of this TONALITY® system sub-construction allows for the use of all kinds of tiles and tile sizes.
The inclined position and the overlapping of the TONALITY® tiles result from the shape of the profiles of the TONALITY® system sub-construction.
The continuous vertical joints can be designed as a closed joint of 8 mm or as a fine joint of 2 mm, as well as flush or set back with regard to the front edge of the tile.





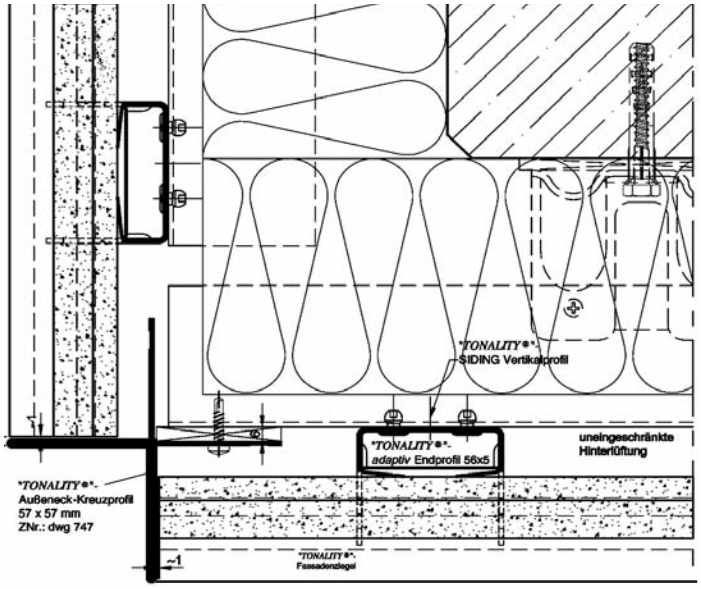
Adaptive System TONALITY® SIDING®

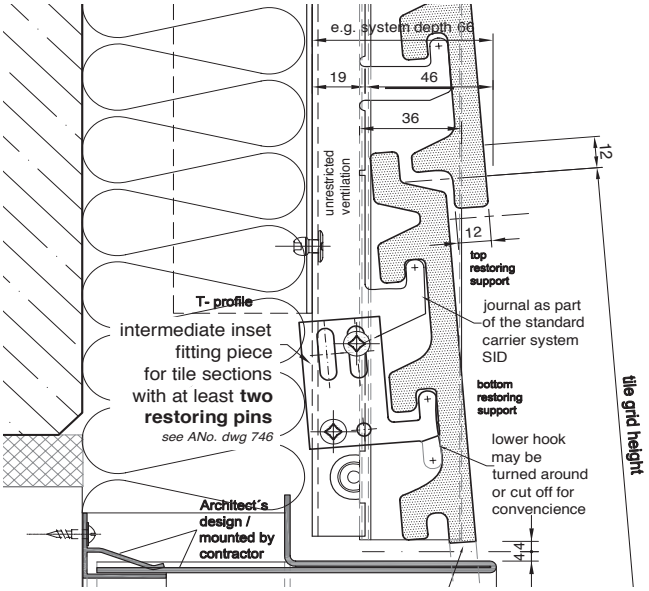
Delivery range:

Illustration	Description	Color / Material
	TONALITY® Siding vertical profile 50 x 60 x 50 mm for system depth 66 mm	Machined Aluminium
	TONALITY® Siding vertical profile 60 x 60 x 60 mm for system depth 76 mm	Machined Aluminium
	TONALITY® Siding joint profile closed 8 mm, 56 x 36 mm for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Siding joint profile Closed, flush, 8 mm 56 x 48 mm, for all system depths	RAL 7021 (blackgray) Aluminium

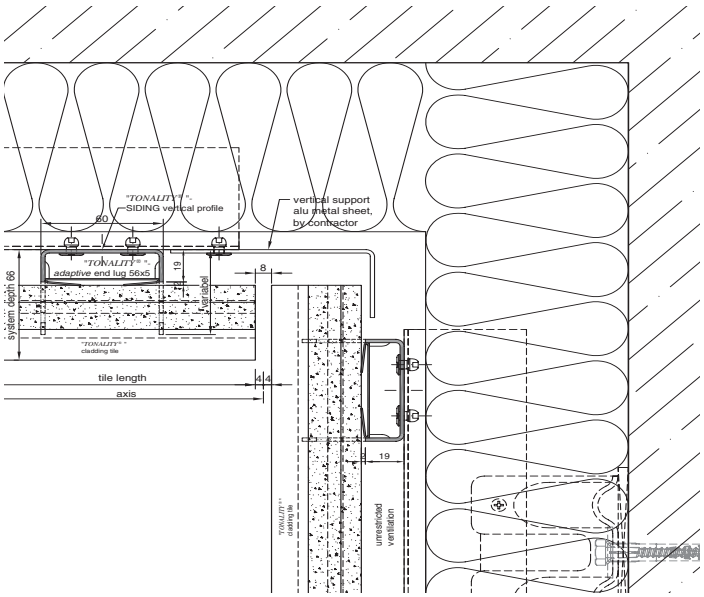
Illustration	Description	Color / Material
	TONALITY® Siding joint profile “Fine joint”, 2 mm, 56 x 36 mm for all system depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Siding joint profile “Fine joint”, 2 mm, flush 56 x 48 mm for all profile depths	RAL 7021 (blackgray) Aluminium
	TONALITY® Siding external corner profile 57 x 57 mm for system depths 66 mm and 76 mm	Aluminium
	TONALITY® Siding adapter piece 50 x 45 mm for all system depths	Semimachined Aluminium

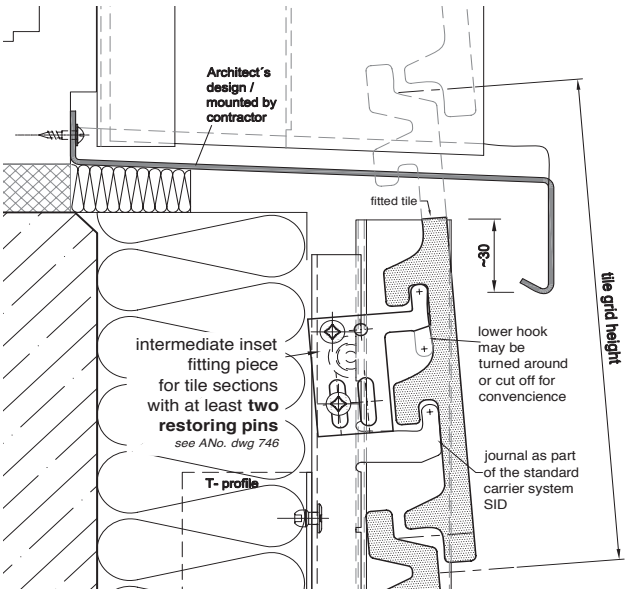
Aluminium quality = EN AW 5754 according to DIN EN 755-2





Horizontal section external corner of building - Siding





Horizontal section internal corner of building - Siding

Vertical section window, lintel and parapet - Siding

Clay as a raw material

As a raw material, clay has been well known since Antiquity. And ever since the discovery of clay ceramics about 10,000 - 8,000 BC, the popularity of clay is based on the exceptional plasticity of wet clays. Thus, clay represents one of the oldest natural raw materials of our days. Clays are weathering and erosion products of the Earth's crust. They occur in the continental and maritime area. Their variety depends on the physical and chemical conditions prevailing at the time of their formation. These conditions allow for a broad spectrum of characteristics and thus for the broad possibilities of application of clays. The quality clays used to manufacture the TONALITY® products quarried in the Westerwald area of Germany. These clays are considered to be among the best kinds of clay worldwide and are known for their particular purity.
TONALITY® cladding tiles show a profile on the reverse and are attached onto vertical support frames made of aluminum by means of positive locking.

Manufacturing procedure

TONALITY® cladding tiles are manufactured in ultra-modern production plants using a vacuum extrusion method, dried and burnt. In the course of the patented Keralis procedure, the raw material clay is dried, processed into finest powdered clay and completely dyed in finely graduated ratios of color mixtures. The products are subsequently burnt at temperatures of approx. 1,200°C.
A sintering process will take place in the course of the baking as a result of the processing of high-quality raw materials and the high baking temperature. This sintering allows for the impermeability and the smooth surface. The production of the TONALITY® cladding tiles is taking place in the production plants of the manufacturer CREATON in accordance with DIN EN ISO 9001 Quality Management System and DIN EN ISO 14000 Environmental Management System.

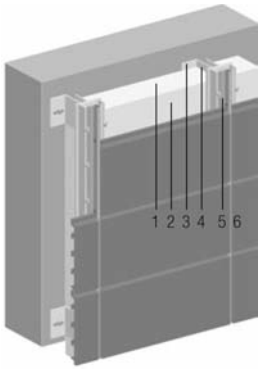
Characteristics

- Non-combustible (Building Material Class A1)
- Weather and frost-resistant
- Waterproof
- Rot-resistant
- Resistant to UV-light
- Shockproof
- Classic Finished Surface and optionally Color with permanent graffiti protection
- Low weight of the system of less than 35 kg/m²
- Tight-fitting installation between tile and system sub-construction
- Installation can be carried out irrespective of weather conditions

Areas of application

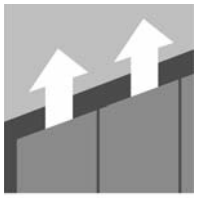
Suspended back-vented cladding. Applicable for external as well as internal walls of any kind of building or building height. A National Technical Approval recorded under No. Z-32.1-567 in accordance with DIN 18516 of the Deutsches Institut für Bautechnik, a German institute of the Federal and Laender Govern-ments for a uniform fulfillment of technical tasks in the field of public law, can be presented for the TONALITY® cladding system. In addition, TONALITY® products allow for the design of sun and privacy protections.

System advantages of the suspended, back-vented façade



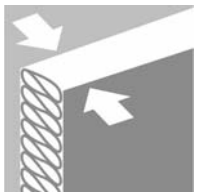
1 Insulating material
2 Ventilation
3 Adjustable wall fastening with thermal separator
4 Supporting profile
5 System-specific sub-construction
6 Cladding tile

Wall structure with TONALITY® cladding tiles



Diffusion-open construction, prevented moisture penetration to the walls and insulation

Protection of building components against weather effects



Each insulation thickness can be realized

Building periods can be estimate as installation is carried out irrespective of weather

Cladding system with the lowest susceptibility to damage
(Rainer Oswald among others: Third Report on Damages to Buildings, Bonn 1998)

Disposal

Cladding tiles can be disposed of as construction and demolition waste under the waste key number 17.01.03 (tiles, bricks and ceramics according to the European Waste Catalogue). The separation of materials allows for their supply for high-quality recycling. The aluminum profiles can be disposed of as reusable material or as construction and demolition waste under the waste key number 17.04.02 (Aluminum according to the European Waste Catalogue).

Storage and transport

Cladding tiles and sub-construction are packed on pallets and wrapped with edge protection in shrink foil in order to prevent damage and soiling.

Standards, regulations, approvals

	Special Regulations of the Roofing Trade
DIN 18516	Cladding for external walls, back-vented
DIN EN 1304	Roofing tiles and fittings, product definitions and specifications
DIN EN 539-2	Burnt-clay roofing tiles
Action on structures	
DIN 1055, Part 1, 4 and 5	Self-weight, wind loads, design loads
Metal works	
DIN 18800	Steel structures, design and construction
DIN 4113, Part 1	Aluminum construction under predominantly static loading
Timber structures	
DIN 1052, Part 1 to 4	Timber structures
Masonry	
DIN 1053, Part1	Masonry
DIN 1045	Concrete and reinforced and prestressed concrete structures
Thermal insulation	
DIN 4108, Part 1 to 4	Thermal insulation in buildings, thermal protection energy economy
Moisture protection subject to climate conditions DIN EN 13162	Thermal insulation products for buildings
Fire protection	
DIN EN 13501	Fire classification of building materials and building components, Fire protection Regulations (BTR)
Sound insulation	
DIN 4109	Sound insulation in building
DIN 18005	Noise abatement in town planning
Tolerances	
DIN 18202	Dimensional tolerances in building construction
DIN 1960	Contract procedures for building works, Part A
DIN 1961	Contract procedures for building works, Part B
DIN 4420, Part 1, 2 und 4	Service and working scaffolds
DIN 18335	Contract procedures for building works, steel construction works
DIN 18360	Contract procedures for building works, metal construction works
DIN 18339	Contract procedures for building works, sheet metal works
DIN 18338	Contract procedures for building works, roof covering and roof sealing works
DIN 18364	Contract procedures for building works, works for protection of steel structures
DIN 18384	Lightning protection systems
DIN 18451	Scaffolding works
DIN 18800	Steel structures
DIN 18200	Assessment of conformity, building materials, building components, design
DIN 52253	Frost resistance, Part 1

The above listing shows only an excerpt of the regulations and standards to be observed. It does not claim completeness.

Technical data TONALITY®

Fire classification:	non-combustible, A1 (DIN EN 13501-1)
Bulk density:	2.25 g/cm^3
Water absorption capacity:	< 6%
Frost resistance:	given according to DIN EN 539-2

Building requirements (ventilation, aeration, ventilation at rear)

As far as thermal insulation, sound insulation and fire protection as concerned, it must be taken into consideration that the external wall and the cladding of this external wall act in combination.
As a rule, ventilation will be required for the reliable drawing of building moisture, the drawing of possible penetrating precipitation, for the capillary separation of the cladding from the thermal insulation resp. from the wall surface and for the drawing of condensation water on the inner side of the cladding.
The façade cladding is supposed to be positioned at a distance of at least 20 mm from the thermal insulation resp. the wall surface. The sub-construction or the unevenness of the wall, for instance, may require the reduction of this distance up to 5 mm in some places.
In order to guarantee a permanent and reliable functioning of the façade cladding, ventilation and aeration openings with cross sections of minimum 50 cm^2 must be provided for at distances of 1 m along the entire wall.

Construction requirements

The façade cladding must be installed free of constraint forces. Constraint stress as a result of shape changes may not cause any damage to the cladding or the sub-construction at the connection or fastening points.
It must be guaranteed that in the area of the expansion joints of the building, the same movement will be possible for the sub-construction as well as for the cladding. This shall apply accordingly for the expansion joints of the sub-construction.
The installation must provide for possibilities of anchoring scaffolds.
Insulation material must be installed permanently, without gaps and dimensionally stable, as well as taking in consideration a possible penetration of moisture due to weather effects.
Timber and wood-based materials must be protected according to DIN 68800-1, -2, -3 and -5.
The thorough moistening of the wooden support battens is prevented by the system-specific sub-construction.
The constructive measures and the choice of suitable building materials must guarantee that damaging effects of various building materials on each other, for instance, are ruled out – even if these materials do not come into contact with each other directly, particularly along the flow direction of water.

Installation requirements:
The geometric assumptions of the structural calculation as well as of the construction planning must be observed in the course of the installation.

Proof of steadiness

The proof of steadiness of the façade cladding must be proven or provable. The use of TONALITY® cladding tiles as cladding for external walls is permitted only if a National Technical Approval was granted for the cladding tiles and their respective application, or if the relevant Building Supervisory Board submitted an approval on an individual basis for the application in question.
The proof of steadiness must be produced by the client resp. his assistant in accordance with the Building Code of the respective Land.
In order to take into consideration measurement deviations of the external wall, the proof of steadiness must be calculated after adding at least 20 mm to the planned distance between external wall and cladding.
Deviation from this requirement is permitted, if the measurement deviations on location have been established to be smaller.
Shape changes may not restrict the function of claddings for external walls.

Calculation values, load assumption, load conditions

For the calculation values of the TONALITY® cladding tile please see the National Technical Approval.
For the admissible loads for the fastening material please see the National Technical Approvals resp. the Test Reports.
The proof of wind load assumption for closed prismatic structures according to DIN 1055-4 must be produced for all components of the façade cladding.
At the same time, the sub-construction may not assume any further loads resulting, for instance, from advertising components or windows. Provided that it is possible to differentiate between main and additional loads, the proof of steadiness of the cladding must be based on the main load consisting of the permanent and of the wind load.

Dimensioning

All components of the façade cladding must be dimensioned under consideration of the security parameters resp. permissible tensions of the corresponding standards or National Technical Approvals.
The load bearing capacity of fastenings and connections not regulated by standards or National Technical Approvals must be proven by tests according to DIN 18516-1.
The regulations of DIN 18516-1 must be taken into consideration in the event that trimming sizes are determined through calculation.
Plugs, anchoring rails, etc., for the fastening of the sub-construction on the external wall may only be used, if their suitability has been especially proven, for instance by a National Technical Approval.

1. HILTI Deutschland GmbH
   www.hilti.de
2. Arthus Fischer GmbH & Co. KG
   www.fischer-befestigungstechnik.de
3. Mea Meisinger AG
   www.mea-group.com

Fire protection

Suspended back-vented façades are traditionally among the safest structures for external walls.
The current fire protection requirements for suspended back-vented façades can be derived from the Building Codes of the respective Laender.
The Building Codes of the Laender include a variety of regulations which determine the various requirements with regard to the building material class of the main components (cladding, thermal insulation, sub-construction) of a façade structure (e.g. Hamburg, other buildings: "B1, sub-construction permissible in B2, if insulation layers and cladding in A"). The requirements concerning the building material class result from the building height and its use. The fire classification of building materials is defined by DIN EN 13501-1. TONALITY® cladding tiles reach the highest classification according to DIN EN 13501-1 and can be used as suspended back-vented cladding for any kind of building and building height.

Protection from condensation water

Protection from condensation water constitutes a pre-condition for the effectiveness of the thermal insulation of an external wall. A suspended back-vented façade will allow to avoid the penetration of condensation water on the inner side of the external wall and in consequence the formation of mould.
The suspended back-vented façade facilitates the trouble-free realization of an external wall structure taking into account all building regulations and offering a moisture diffusion resistance of the layers that decreases outwardly. The building and ambient moisture is conducted via the ventilation gap, without the penetration of condensation water on the inner side of the external wall.
The improved drying characteristics of external walls with suspended back-vented claddings contributes to a healthy indoor climate and is beneficial to the energy budget, as the increased moisture could otherwise only be released through increased ventilation and by opening the windows.
The possibilities to prove the protection against condensation water are described by DIN 4108-3 and DIN4108-5.

Thermal insulation / insulation material

Structural thermal insulation serves the purpose of protecting buildings against thermal extremes and against moisture.
The separation of the individual functions of the layers of external walls with suspended back-vented claddings creates a structure that meets the requirements of structural thermal insulation in an exemplary fashion. It shows the lowest susceptibility to damage among all kinds of external wall structures.
By mounting a suspended back-vented cladding, the desired permeation coefficient (U-value) can be realized almost irrespective of the existing wall structure. Mineral insulation material of almost any thickness can be put in any season and in about any weather.
The minimum thermal insulation according to the Building Codes of the Laender includes the basic requirements described in §3, as well as the thermal insulation that depends of the use and is necessary for hygiene and is put in concrete terms by DIN 4108.
The structural thermal insulation for the purpose of saving energy is determined by the EnEV [German Energy Conservation Act] of 2002 that was based on the Energy Conservation Act of 1976. The main focus of the new regulation was put on the interaction between the building and its heating technology in order to realize a further decrease of the demand of heating energy. It is, however, only possible to demand for measures that can be realized from the technological point of view and that can economically be applied to all buildings of same kind and use.
Inevitable thermal bridges that have to be taken into consideration according to the valid technical regulations are reliably determined and recorded by means of proven calculation procedures in the course of the determination of the thermal transmittance. The guideline published by the German trade association building materials and components for exterior ventilated claddings serves the objective quantity determination of the thermal effects of thermal bridges of suspended back-vented claddings.

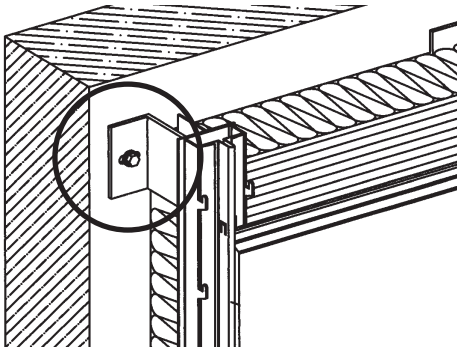
Insulation material
The thermal insulation of suspended back-vented claddings consists of insulation material of mineral fibers, hydrophobated, according to DIN EN 13162, thermal conductivity group 035 (0.035 W[m*K]) or 040 (0.40 W[m*K]). The thickness of the mounted insulation material is 100 mm, as a rule.
Façade insulation boards must be put in with close joints, bonded and without any hollow spaces between underground and insulation layer according to standards. They must be fastened on average by 5 insulation material holders every 1 m^2 mechanically and closely connected to the bordering building components.
The "Deutsche Rockwool Mineralwool GmbH" (www.rockwool.de), "Saint-Gobain Isover G+H" (www.isover.de) and Ursa Deutschland (www.ursa.de) also offer façade insulation boards that are fatsenend by means of 2 insulation material holders per board. This amounts to approx. 3 holders per m^2.

Weather protection

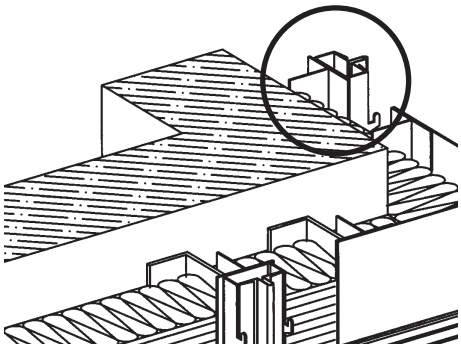
The suspended back-vented cladding guarantees for a permanent protection of the buildings against atmospheric precipitations. According to DIN 4108-3, it is assigned to the highest stress group III, strong driving rain stress. The mentioned cladding is thus particularly resistant to driving rain. This kind of cladding will protect the buildings against the penetration of water even in areas with high annual quantities of precipitation as well as in areas with a lot of wind without reducing the giving off of moisture from the inside of the building.

The consequent separation of the façade cladding from the bearing structure and insulation material protects the building against weather effects. The cooling down and thermal losses of the building in winter as well as the heating up in summer are avoided. The indoor climate will be stable and comfortable. Building components are protected against strong temperature fluctuations, a fact that will have a beneficial effect on their useful life.

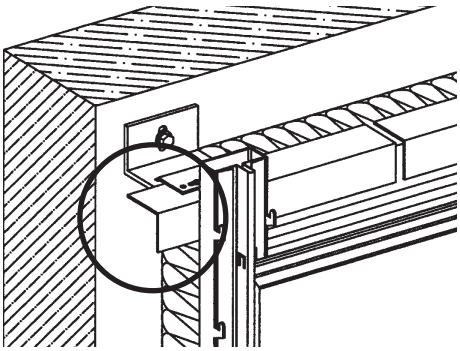
Installation of Sub-Construction



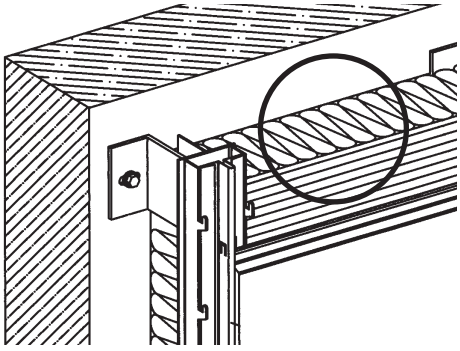
Primary sub-construction (wall brackets)
Wall brackets are to be fixed at the grid distance of the façade and observing the height grid in accordance with the static calculations. An exact perpendicular alignment must be observed in this context. The installation instructions of the system manufacturer of the primary sub-constructions and of the plugs must be observed in the course of the installation without restriction. All brackets must be separated thermally from the external walls of the building by means of appropriate underlays in accordance with DIN 18516. Attention must be paid to the use of fixing material admitted for use by the construction supervising authority under consideration of the static issues. We recommend to have a sufficient number of extraction tests carried out by the plug manufacturer upon commencement of installation.



Primary sub-construction (vertical T-profiles)
Vertical T-profiles are to be aligned on the wall brackets at suitable height and under observation of the façade line, as well as screwed resp. riveted according to the manufacturer's instructions. Appropriate gaps at the joints as well as loose and fixed point connections must be executed in the course of the installation of the vertical T-profiles in order to allow for their linear expansion to be taken up. It must be guaranteed that the expansion of the primary sub-construction and of the TONALITY® profile can occur evenly and free of constraint forces.

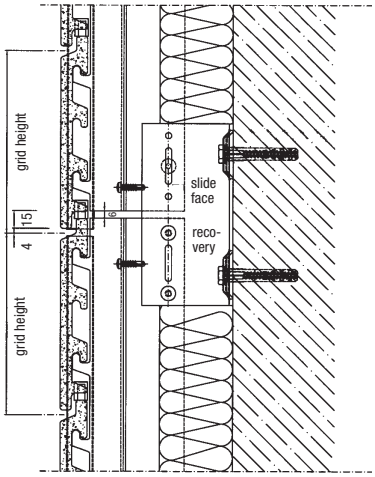


Primary sub-construction (alternatively horizontal L-profiles) – valid for the Adaptive and Classic Profile Systems
Horizontal L-profiles are to be aligned on the wall brackets at suitable height and under observation of the façade line, as well as screwed resp. riveted according to the manufacturer's instructions. Appropriate gaps at the joints as well as loose and fixed point connections must be executed in the course of the installation of the profiles in order to allow for their linear expansion to be taken up. It must be guaranteed that the expansion of the primary sub-construction and of the TONALITY® profile can occur evenly and free of constraint forces. For thermal expansion reasons, we recommend to limit the maximal profile length to 3 m. In order to avoid constraint forces due to thermal expansion, attention must be paid to a sufficient joint between the profiles.

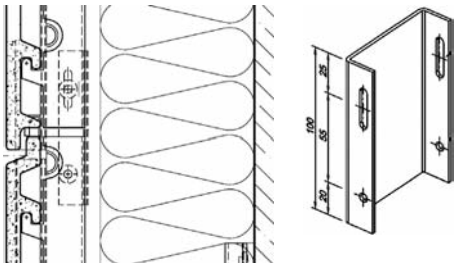


Thermal insulation
The thickness of the thermal insulation and the kind of insulating material are determined by the EnEV [German Energy Conservation Act] resp. the customer's requirements. In general, insulation must be fixed onto the wall surfaces cleaned beforehand and under observation of the manufacturer's instructions. For the base area, we recommend the use of perimeter insulation. It must be paid attention to the fact that the insulating board are butted against each other in the joint area. Prior to the commencement of the insulating work, all doors, windows and joints of the building must be checked for professional sealing. Possible visible deficiencies must be reported to the building site supervisory staff prior to the commencement of the works.

Fixed point – floating point



Fixed and floating points are used to realize the primary sub-construction. These points represent the fastening points between the anchoring components and the bearing profiles of the primary sub-construction. They are used to control changes in length resulting from the differences in the temperature of the environment and thus from material temperature.
The fastening by means of floating and fixed point allows for the installation free of constraint forces. One fixed point must be determined for each profile length.



The adaptive profile for the sub-construction coupling allows for the realization of a vertical profile without ledges.

Adaptive System (ADS)

Installation of vertical profiles:
The TONALITY® vertical profiles must be screwed resp. riveted to the height and the façade grid of the already installed sub-construction. The distance between brackets and the kind of fastening must be effected according to the static requirements of the building. Fixing material admitted for use by the construction supervising authority must be used at any rate. As already described for the primary sub-construction, gaps for the linear expansion of profiles must be allowed for at the joints in the course of the profile installation. It must be paid attention to the fact that the required gap at the joint is executed observing the same height grid of the primary sub-construction (T-profile) and of the agraffe profile. In case of formation of several bearing profiles one above the other, the lengths of the bearing profiles as well as the distance between the fixed points of two bearing profiles following each other must not exceed 2.80 m. The gap at the joint of the cladding tiles and bearing profiles must be at least 6 mm. Corresponding gaps at the joints must be allowed for in the event of site trimming. Joints of the bearing profiles may not be overlapped by cladding tiles.

Installation of joint profile:
In order to fasten the joint profile, it is clamped into the vertical profile. At the same time, it rests on the beads executed in the webs of the joint profile on the reverse side. As a rule, it is secured against falling off through insertion of the tiles. At the same time, the tiles are pushed to the vertical profile by the joint profile in order to avoid the generation of noise of the tiles in case of load from wind pressure. Attention must be paid to the height locks of the system profiles when inserting the joint profile and to the fact that the joint profile is inserted in such way that the required clamping effect of the tiles is achieved. In case of soffits, we recommend to screw the joint profile onto the vertical profile in order to completely rule out a possible horizontal shifting of the joint profile and of the inserted tiles.

Base Clinch Rail System (BAS)

The TONALITY® base clinch rail profiles must be screwed to the height and the façade grid on the T-shaped bearing profiles of aluminum 70x50x2 mm at the double distance of the nominal height of the tile in accordance with the National Technical Approval. Proof of the stability/steadiness of the bearing profiles must be presented under consideration of the static issues for the relevant building project. The connection between the base clinch rail profile and the bearing profile on the reverse must be effected using Saphir drilling screws manufactured by EJOT of the type EJOT JT4 – 4 – 4.8 x 19 (A2) in normal atmosphere or EJOT JT9 – 4 – 4.8 x 19 (A4) in industrial or in maritime atmosphere according to the Test Report or in an equivalent way. Please note that 2 screws must be aligned symmetrically per each fastening. All fastening holes must be filled. The gap at the joint of the profiles must be at least 6 mm. Joints of the system sub-construction may not be overlapped by cladding tiles.

Classic Profile System (CLS)

Installation of vertical profiles:
The TONALITY® vertical profiles must be screwed resp. riveted to the height and the façade grid of the already installed sub-construction. The distance between brackets and the kind of fastening must be effected according to the static requirements of the building. Fixing material admitted for use by the construction supervising authority must be used at any rate. As already described for the primary sub-construction, gaps for the linear expansion of profiles must be allowed for at the joints in the course of the profile installation. It must be paid attention to the fact that the required gap at the joint is executed observing the same height grid of the primary sub-construction (T-profile) and of the agraffe profile. In case of formation of several bearing profiles one above the other, the lengths of the bearing profiles as well as the distance between the fixed points of two bearing profiles following each other must not exceed 2.80 m. The gap at the joint of the cladding tiles and bearing profiles must be at least 6 mm. Corresponding gaps at the joints must be allowed for in the event of site trimming. Joints of the bearing profiles may not be overlapped by cladding tiles.

Effective spans

Maximum effective spans of the TONALITY® cladding tiles as single-span girders under positive wind load for the systems ADS, BAS and CLS

Positive wind load [kN/m²]	+0.50	+0.80	+1.00	+1.50	+2.00	+2.50	+3.00
Maximum effective span [m]							
Tile 150*	1.20	1.20	1.20	1.20	1.10	0.98	0.89
Tile 175	1.17	0.96	0.83	0.68	0.59	0.52	0.48
Tile 200	1.20	1.15	1.00	0.82	0.71	0.63	0.58
Tile 225	1.20	1.02	0.88	0.72	0.63	0.56	0.51
Tile 250*	1.20	1.20	1.20	1.04	0.90	0.81	0.74
Tile 300*	1.20	1.20	1.20	0.99	0.88	0.77	0.70

* The tiles 150, 250 and 300 may only be used with the systems ADS and BAS

Maximum effective spans of the TONALITY® cladding tiles as single-span girders under negative wind load (wind suction) for the systems ADS and CLS

Negative wind load [kN/m²]	–0.50	–0.80	–1.00	–1.50	–2.00	–2.50	–3.00
Maximum effective span [m]							
Tile 150*	1.20	1.20	1.20	1.20	1.20	1.20	1.07
Tile 175	1.20	1.20	0.97	0.65	0.49	0.39	0.32
Tile 200	1.20	1.13	0.85	0.57	0.43	0.34	0.28
Tile 225	1.20	1.20	0.98	0.65	0.49	0.39	0.33
Tile 250*	1.20	1.20	1.20	1.20	1.20	0.96	0.80
Tile 300*	1.20	1.20	1.20	1.11	0.83	0.67	0.56

* The tiles 150, 250 and 300 may only be used with the system ADS

Maximum effective spans of the TONALITY® cladding tiles as single-span girders under negative wind load (wind suction) for the system BAS

Negative wind load [kN/m²]	–0.50	–0.80	–1.00	–1.50	–2.00	–2.50	–3.00
Maximum effective span [m]							
Tile 150	1.20	1.20	1.20	1.20	1.15	0.92	0.77
Tile 175	1.20	1.20	0.97	0.65	0.49	0.39	0.32
Tile 200	1.20	1.13	0.85	0.57	0.43	0.34	0.28
Tile 225	1.20	1.20	0.98	0.65	0.49	0.39	0.33
Tile 250	1.20	1.10	0.83	0.55	0.41	0.33	0.28
Tile 300	1.20	0.86	0.64	0.43	0.32	0.26	0.21

The permissible effective span is the lower value given in either the table for wind pressure or the table for wind suction.

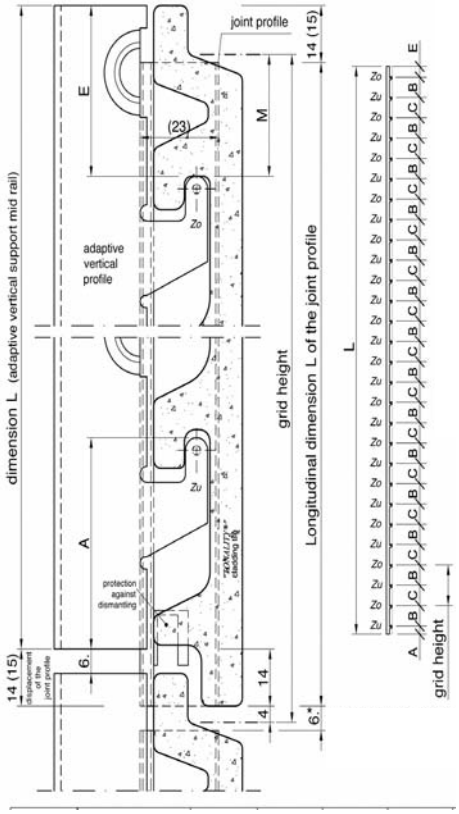
Ordering and planning instructions

- Determine the distance of the façade to the carcass of the building taking into account the thickness of the insulation and the unrestricted ventilation (see DIN 18516). The established distance is important for your order of the primary sub-construction.
- Plan the module sectioning (tile lengths) in agreement with the architect/building owner methodically. In this context, it will be necessary to verify details, connections, etc., by presentation of drawings.
- Perform the site measuring and determine the quantities of tiles, profiles, wall brackets, joining plates, etc.
- Determine the profiles, wall brackets, connection components and the plugs admitted for this use by the construction supervising authority. Perform static calculations for load-bearing profiles and anchorings and if necessary, have these calculations reviewed.
- **Perform the sectioning of profiles according to length**

Profile length	Tile height	with max. tile length of
2.694 mm =	18 x 150 mm	x 900 mm
2.794 mm =	16 x 175 mm	x 900 mm
2.794 mm =	14 x 200 mm	x 1.600 mm
2.694 mm =	12 x 225 mm	x 1.600 mm
2.744 mm =	11 x 250 mm	x 1.600 mm
2.894 mm =	9 x 300 mm	x 1.600 mm
2.794 mm =	7 x 400 mm	x 1.600 mm

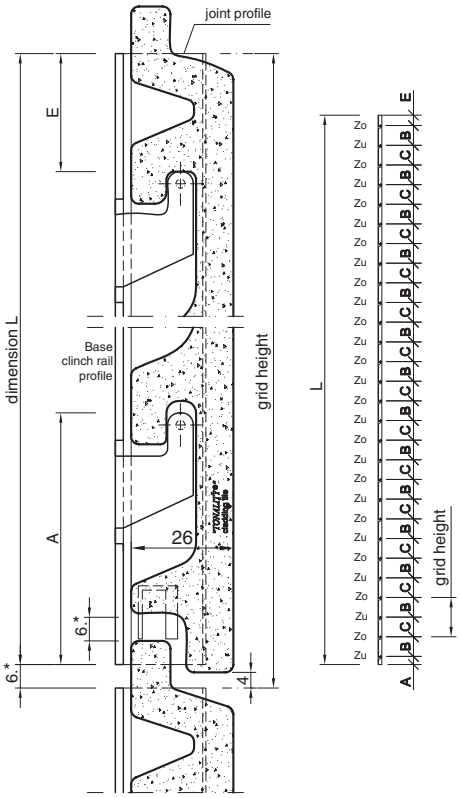
- As a rule, the length of the T-profile must correspond to the length of the „TONALITY"-vertical profile in case of vertical sub-construction. The façade must be installed free of constraint forces through fixed and floating point connections.
- Order the tiles indicating their dimensions for trimming to size. In case of special lengths of the profiles (only after consultation), the installer must draw up production plans.
- In order to avoid interruptions of the installation due to breakage or clippings, it is recommended to add on approx. 5 % to the required amount (depending on the building project 5 –15%).
- The clear and biding order is placed electronically using the respective order form, which will be submitted by our Sales Service.

Adaptive System (ADS)



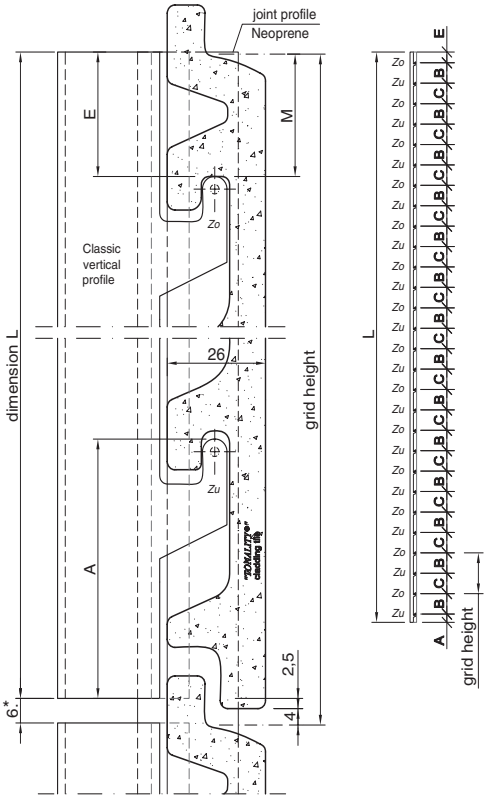
Zo: Tile fastening at the top
Zu: Tile fastening at the bottom

Adaptive System (ADS)



Profile length = number of modules less 6 mm

Base Clinch Rail System (BAS)



* For thermal expansion reasons, the joint distance of the tiles and profiles must be at least 6 mm (see Technical Approval).

Adaptive System (ADS)

Module	No. of modules	Size L	Size A	Size B	Size C	Size E	Size M
150	18	2694	45	75	75	24	12
175	16	2794	45	100	75	24	12
200	14	2794	52	100	100	42	30
225	12	2694	45	150	75	24	12
250	11	2744	52	150	100	42	30
300	9	2694	102	150	150	42	30
400	7	2794	102	200	200	92	80

Base Clinch Rail System (BAS)

Module	No. of modules	Size L	Size A	Size B	Size C	Size E
150	18	2694	57	75	75	75
175	16	2794	57	100	75	100
200	14	2794	64	100	100	100
225	12	2694	57	150	75	150
250	11	2744	64	150	100	150
300	9	2694	114	150	150	150
400	7	2794	114	200	200	80

Classic Profile System (CLS)

Module	No. of modules	Size L	Size A	Size B	Size C	Size E	Size M
150	18	2694	56.5	75	75	12.5	12
175	16	2794	56.5	100	75	12.5	12
200	14	2794	63.5	100	100	30.5	30
225	12	2694	56.5	150	75	12.5	12
250	11	2744	63.5	150	100	30.5	30
300	9	2694	113.5	150	150	30.5	30
400	7	2794	113.5	200	200	80.5	80

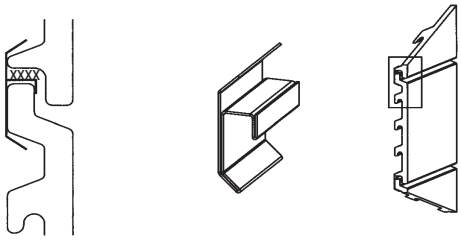
Installation of cladding tiles

In general, all tiles must be fitted in free of constraint forces between the vertical system profiles. Attention must be paid to the fact that the tile can easily be inserted into the system bearing. It should show a gap to the joint profile of 1 mm to the left as well as to the right. This does, however, presuppose that the installation of the vertical profiles has been executed carefully and accurately.

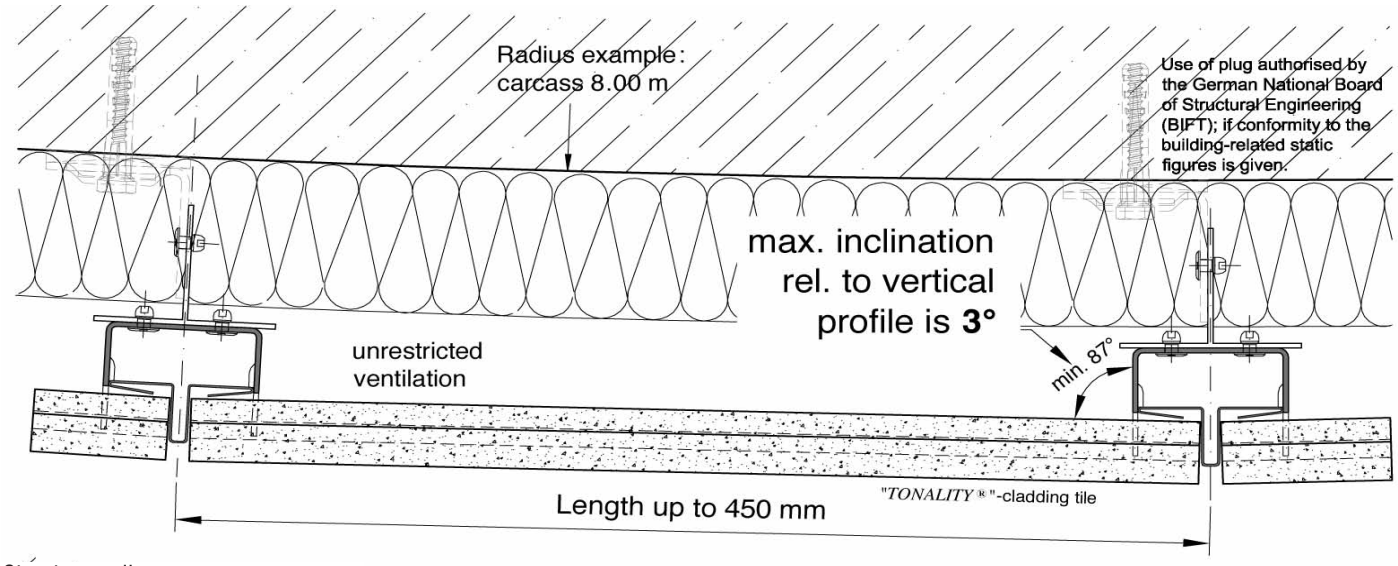
In the event of trimming on site, the tiles should be cut using a wet cutter. Attention must be paid here to the fact that the tiles are sufficiently rinsed resp. cleaned with clear water after the cutting process to remove the soiling.

Installation of trimmed tiles with gable clamps

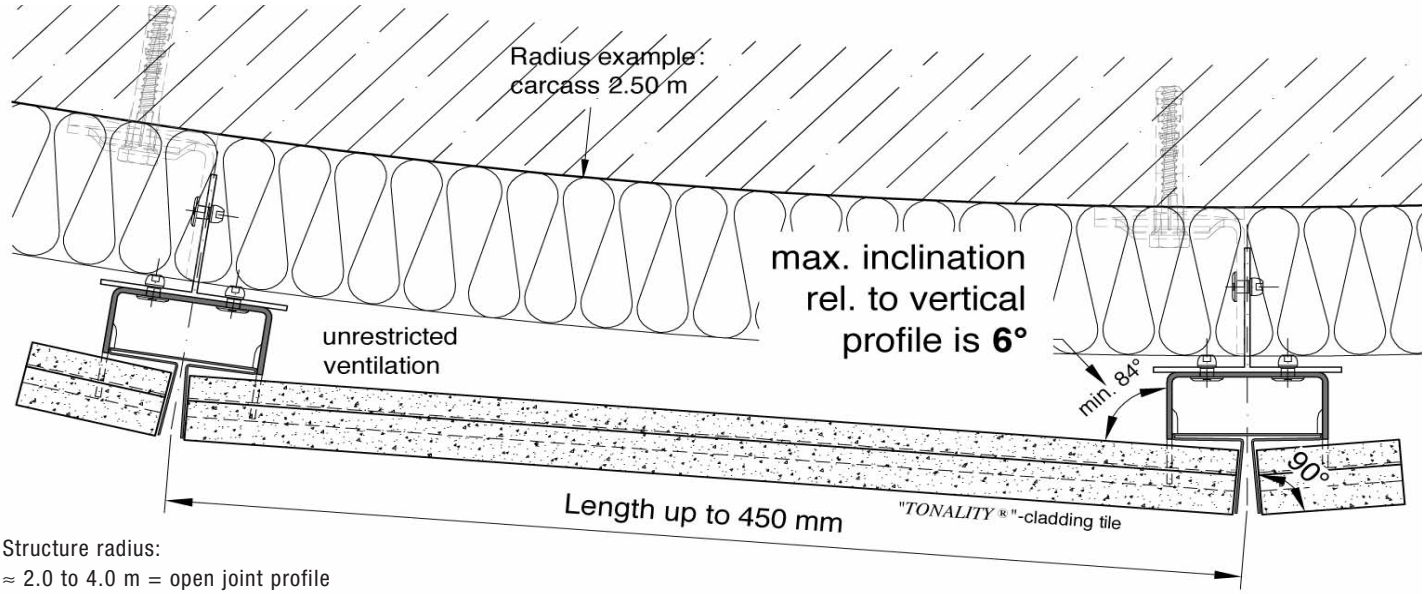
1. Mark the tile to be trimmed.
2. Trim using wet cutter and recommended cutting disk.
3. Place the trimmed tile with the visible side down on a smooth surface.
4. Determine the required tile distances with a system sub-construction profile with modules for agraffes.
5. Position gable clamps (2 pieces per trimmed tile).
6. Fill the resulting joint with glue for gamble clamps, apply evenly and allow to set.
7. Install cladding tile with positioned trimmed tile in the system sub-construction.



Round walls with standard cladding tiles



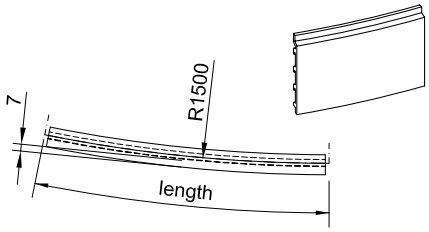
Structure radius:
≥ 4.0 m = standard joint profile



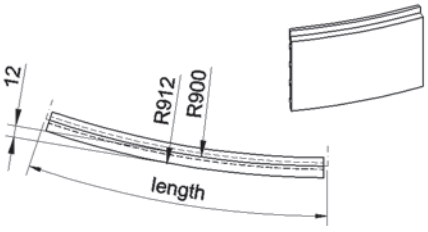
Structure radius:
≈ 2.0 to 4.0 m = open joint profile

Special design: Round walls with curved tiles

TONALITY® Radius cladding tiles with radius 1.500 mm
For radii of approx. 1.20 – 1.80 m
Natural surface:
Length up to 450 mm / brick red
Height 150, 175, 200 mm

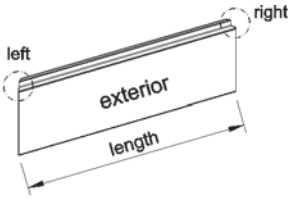


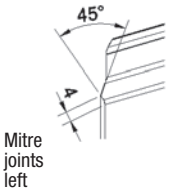
TONALITY® Radius cladding tiles with radius 900 mm
For radii of ≤ 1.10 m
Natural surface:
Length up to 450 mm / brick red
Height 150, 175, 200 mm



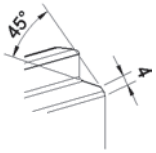
Special designs

TONALITY® cladding tiles with miters.
For all surfaces.



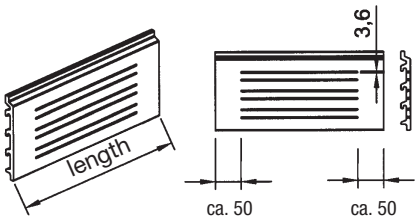


Mitre joints left

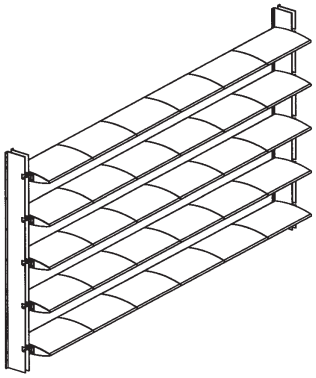


Mitre joints right

TONALITY® cladding tiles with horizontal slots.
For all surfaces, as ventilation, aeration or design element.



Installation Baguette and Lamelle



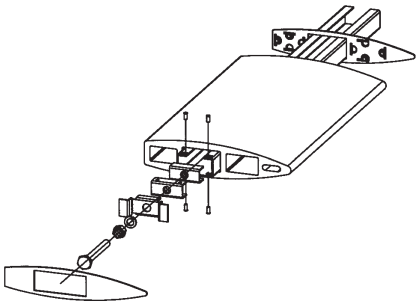


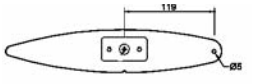
Illustration of a Lamelle bearing structure

Description of the prefabricated Lamelle bearing structure:
The structure is completely assembled and included in delivery and must be mounted into a structure by the installer. The bearing structure for sun and privacy protection is not included in delivery.

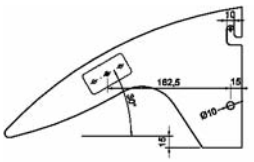
Recommendation:
Maurus Metallbauservice, Wörishoferstrasse 50,
D-86842 Türkheim, Germany
Phone: +49 (0) 8245-90 912
Fax: +49 (0) 8245-90 913

Brackets for Lamelle tiles

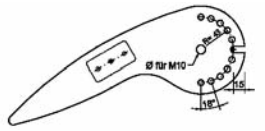
Cover / central plate



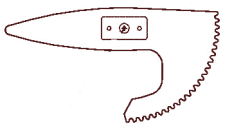
Bracket smooth



Mounting bracket



Bracket variable



Bracket
Electric drive

Working

The mechanical working (trimming, drilling) of burnt-clay products will produce some dust, which could contain particles of quartz. The inhalation of large quantities of these dust particles could lead to a harmful effect on your respiratory tracts. The breathing-in of quartziferous dust particles, particularly of fine, breathable dust particles, in large quantities or over a longer period of time could lead to a damage of your lungs (silicosis) and as a result of the silicosis to an increase of the risk of lung cancer. In addition, this dust could cause eye and skin irritations.

a) Please use wet cutting machines or devices with dust collectors.
b) Please provide for sufficient ventilation at the workplace.
c) Please avoid eye and skin contact by wearing appropriate personal protective equipment, such as safety glasses and protective clothing. Please avoid the breathing-in of the dust: As soon as the limit values are exceeded at your workplace or is to be expected, we ask you to please wear an appropriate breathing mask P2. In the event that the limit values are exceed considerably, you must use a breathing mask P3.

Processing

For the trimming and adjusting of TONALITY® cladding tiles, we recommend to use exclusively wet cutters.

Recommendation wet cutter:
Ceramics and stone cutting machine D2
Product: Dahm cutting disc type DN1
(various diameters)
Art.-No.: 50152

Company address:
Karl Dahm & Partner GmbH
Ludwigstrasse 5
D-83358 Seebruck
Germany
www.dahm-werkzeuge.de

For the drilling of TONALITY® cladding tiles, we recommend the use of a carbide drill or a diamond tipped spiral drill.

TONALITY® Service

We stand ready to give you custom support in the planning of you TONALITY® façade:

- Invitations of tender
- CAD details (dwg-files)
- Calculation of required quantities
- Color design

Please contact our appropriate technical expert.

Ordering information

In order to avoid interruptions of the installation due to breakage, it is recommended to add on an additional quantity of tiles of approx. 10 % to the quantity ordered.

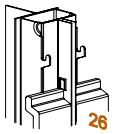
Differences of color are possible within various batches. Differences of color can, however, occur even within one batch.

"*TONALITY®*"- *FACADE SYSTEM*

Order form

Adaptive System (ADS)

Tile grid height 150 mm **page 1**



CREATON® NATURAL CLAY SETS THE TONE

Building project: _____

Illustr.	Description	Colour/Material	Grid height (mm)	Length (mm)	Item Number	see also: dwg No	see also: ADS ET ..	Ordered quantities (no)
	"TONALITY®"-*adaptiv* vertical support mid rail, 35 x 60 x 35 mm for system depth 46 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027900	701	01	
			150	client-specific	4028343	701	01	
	"TONALITY®"-*adaptiv* vertical support mid rail, 45 x 60 x 45 mm for system depth 56 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027909	702	01	
			150	client-specific	4028343	702	01	
	"TONALITY®"-*adaptiv* vertical support mid rail, 55 x 60 x 55 mm for system depth 66 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027918	703	01	
			150	client-specific	4028343	703	01	
	"TONALITY®"-centre joint profile continuous, 56 x 23 mm for all system depths	powder coated RAL 7021 (black grey) AlMg3 H22	150	2.694	4027927	704	02	
			150	client-specific	4028344	704	02	
	"TONALITY®"-centre joint profile continuous, 56 x 30 mm (flush with leading edge), for all system depths	powder coated RAL 7021 (black grey) AlMg3 H22	150	2.694	4027936	706	02	
			150	client-specific	4028344	706	02	
	"TONALITY®"-centre joint profile continu. ´precision joint´, 56 x 23 mm for all system depths	powder coated RAL 7021 (black grey) AlMg3 H22	150	2.694	4027945	707	02	
			150	client-specific	4028344	707	02	
	"TONALITY®"-centre joint profile continu. ´precision joint´, 56 x 30 mm (flush with leading edge) notched, all system depths	powder coated RAL 7021 (black grey) AlMg3 H22	150	2.694	4027954	708	02	
			150	client-specific	4028344	708	02	
	"TONALITY®"-centre joint profile discontinuous, 56 x 31 mm (flush with leading edge) notched, all system depths	powder coated RAL 7021 (black grey) AlMg3 H22	150	2.694	4027963	709	02	
			150	client-specific	4028344	709	02	
	"TONALITY®"-end lug 56 x 5 mm for all system depths	mill finish AlMg3 H22	150	2.694	4028318	all-01	A 01	
			150	client-specific	4028350	all-01	A 01	
	"TONALITY®"-vertical support external corner rail, 74 x 35 mm - left hand for system depth 46 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027972	710	03	
			150	client-specific	4028345	710	03	
	"TONALITY®"-vertical support external corner rail, 74 x 35 mm - right hand for system depth 46 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027981	711	03	
			150	client-specific	4028345	711	03	
	"TONALITY®"-vertical support external corner rail, 74 x 45 mm - left hand for system depth 56 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027990	712	03	
			150	client-specific	4028345	712	03	
	"TONALITY®"-vertical support external corner rail, 74 x 45 mm - right hand for system depth 56 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4027999	713	03	
			150	client-specific	4028345	713	03	
	"TONALITY®"-vertical support external corner rail, 74 x 55 mm - left hand for system depth 66 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4028008	714	03	
			150	client-specific	4028345	714	03	
	"TONALITY®"-vertical support external corner rail, 74 x 55 mm - right hand for system depth 66 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4028017	715	03	
			150	client-specific	4028345	715	03	
	"TONALITY®"-soffit clamp for external right angle corner, dim.: 20x66x66x20 mm	mill finish AlMg3 H22	150	130 / 90°	4028089	724	05	(1 unit used for 2 corner tiles)
			delivery without screw (2x Cross recessed pan head tapping 4.8 x 16)					
	"TONALITY®"-soffit clamp for external corner, angle as per customer specification, dim.: 20x66x66x20 mm	mill finish AlMg3 H22	150	130 /variable°	4028349	724	05	degree req.: ___° (1 unit used for 2 corner tiles)
			delivery without screw (2x Cross recessed pan head tapping 4.8 x 16)					
	"TONALITY®"-reveal/lintel profile narrow, BAS end rail, 20x40x20 mm for all system depths	mill finish AlMg3 H22	150	2.694	4028290	789	05	
			150	client-specific	4028347	789	05	
	"TONALITY®"-reveal/lintel profile broad, profile width 20x100x20 mm for all system depths	mill finish AlMg3 H22	150	2.694	4028080	723	05	
			150	client-specific	4028348	723	05	
	For additional fittings (for all grids) see order form ADS-000							

Client: Company / Name / Client No _____

_____ Address _____

_____ Phone / Fax _____

Delivery address (alternative address) _____

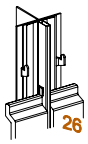
Date / Signature _____

"TONALITY® "- FACADE SYSTEM

Order form

Clinch rail system (BAS)

Tile grid height 150 mm



CREATON® NATURAL CLAY SETS THE TONE

Building project: _____

Illustr.	Description	Colour/Material	Grid height (mm)	Length (mm)	Item Number	see also: dwg No	see also: BAS ET ..	Ordered quantities (no)
	"TONALITY®"-vertical support clinch rail 20 x 60 x 20 mm, system depth 31 mm joint 8 mm (21 mm, standard)	powder coated RAL 7021 (black grey) AlMg4,5Mn0,7 H24	150	2.694	4028226	780	01	
			150	client-specific	4028352	780	01	
	"TONALITY®"-vertical support clinch rail 20 x 60 x 20 mm, system depth 31 mm joint 8mm (29mm, flush with leading edge)	powder coated RAL 7021 (black grey) AlMg4,5Mn0,7 H24	150	2.694	4028235	781	01	
			150	client-specific	4028352	781	01	
	"TONALITY®"-vertical support clinch rail 20 x 60 x 20 mm, system depth 31 mm joint 2 mm (21 mm, ´Precision joint´)	powder coated RAL 7021 (black grey) AlMg4,5Mn0,7 H24	150	2.694	4028244	782	01	
			150	client-specific	4028352	782	01	
	"TONALITY®"-vertical support clinch rail 20 x 60 x 20 mm, system depth 31mm, joint 2mm (29, ´Precision joint´, flush, notched)	powder coated RAL 7021 (black grey) AlMg4,5Mn0,7 H24	150	2.694	4028253	783	01	
			150	client-specific	4028352	783	01	
	"TONALITY®"-vertical support end rail (also reveal/lintel profile) 20x 40 x20 mm, for all system depths	mill finish AlMg3 H22	150	2.694	4028290	789	02	
			150	client-specific	4028347	789	02	
	"TONALITY®"-reveal/lintel profile broad, 20 x 100 x 20 mm for all system depths	mill finish AlMg3 H22	150	2.694	4028080	723	02	
			150	client-specific	4028348	723	02	
	"TONALITY®"- closing-off profile 23 x 40 x 20 mm, left hand	mill finish AlMg4,5Mn0,7 H24	150	2.694	4028262	784	02	
			150	client-specific	4028347	784	02	
	"TONALITY®"- closing-off profile 20 x 40 x 23 mm, right hand	mill finish AlMg4,5Mn0,7 H24	150	2.694	4028271	785	02	
			150	client-specific	4028347	785	02	
	"TONALITY®"-vertical support external right angle corner rail, 20x40x40x20mm for system depth 31 mm	mill finish AlMg4,5Mn0,7 H24	150	2.694	4028280	787	03	
			150	client-specific	4028353	787	03	
	"TONALITY®"-soffit clamp for external right angle corner, dim.: 20x66x66x20 mm	mill finish AlMg3 H22	150	130 / 90°	4028089	724	03	(1 unit used for 2 corner tiles)
			delivery without screw (2x Cross recessed pan head tapping 4.8 x 16)					
	"TONALITY®"-soffit clamp for external corner, angle as per customer specification, dim.: 20x66x66x20 mm	mill finish AlMg3 H22	150	130 /variable°	4028349	724	03	degree req.: ___° (1 unit used for 2 corner tiles)
			delivery without screw (2x Cross recessed pan head tapping 4.8 x 16)					

Client: Company / Name / Client No _____

_____ Address _____

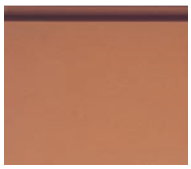
_____ Phone / Fax _____

Delivery address (alternative address) _____

Date / Signature _____

TONALITY® Classic Natur


Brick red (natural)


Toscana


Beige


Pearl-gray


Flint-gray


Umbra-gray

Cream light

TONALITY® Classic Finished Surface, with Graffiti Protection


Brick red (finished surface)


Dark-red


Copper-red


Bright-red


Salmon-red


Light-gray


Bright-gray

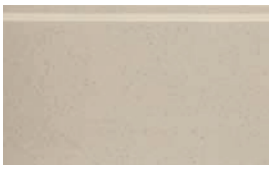

Middle-gray


Dark-gray


Anthracite


Cream


Sand


Eggshell

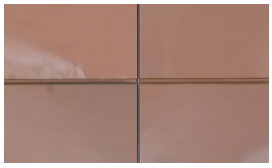
White, matt


Blue, matt

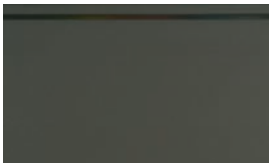
White, glossy

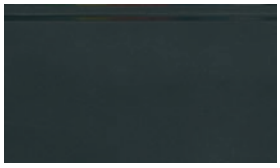

Black, glossy

TONALITY® Classic Special Series


Bright-red, streaked


Bright-blue, streaked


Manganese


Manganese anthracite

TONALITY® Color Natural Red FR3


FR 3 natural red, without coating

Please note that actual colors may slightly vary in appearance from those shown above.

TONALITY® Color


FA 1 glazed


FA 5 glazed


FC 1 glazed


FC 2 glazed


FC 3 glazed


FC 4 glazed


FE 1 glazed


FE 2 glazed


FE 3 glazed


FF 1 glazed


FF 2 glazed


FF 3 glazed


FH 1 glazed


FH 3 glazed


FH 4 glazed


FH 5 glazed


FK 1 glazed


FK 2 glazed


FK 3 glazed


FN 1 glazed


FN 3 glazed


FP 1 glazed


FP 2 glazed


FP 3 glazed


FS 1 glazed


FS 3 glazed


FS 4 glazed


FS 5 glazed


FW 1 glazed


FW 5 glazed

Please note that actual colors may slightly vary in appearance from those shown above.

REFERENCES

DELIVERY PROGRAMM OF OUR SISTER COMPANIES

www.wanit-fulgurit.de · www.europanelsoverseas.be

- Roof and façade systems
- Corrugated sheets
- Concrete tiles
- Roofing foil and insulation systems
- Roofing soffits

ROOF

- Large-size façade panels
- Façade systems
- Façade panels
- Balcony panels

CLADDING

- Rendering panels
- Tile backer boards
- Building boards

INTERIORS

CREATON®
NATURAL CLAY SETS THE TONE

CREATON AG · Dillinger Straße 60 · D-86637 Wertingen/Germany · www.creaton.de