

Cladding tile Urban T

Planning and installation





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General information

This document provides information about the main aspects of planning and installation.

Further information can be obtained from:

Zürcher Ziegeleien AG
Eichwatt 1
8105 Regensdorf
www.zz-ag.ch

Validity

At the time of carrying out the work, the most recent documentation is valid and can be obtained from the 'Downloads' area of www.zz-ag.ch.

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www.zz-ag.ch/agb

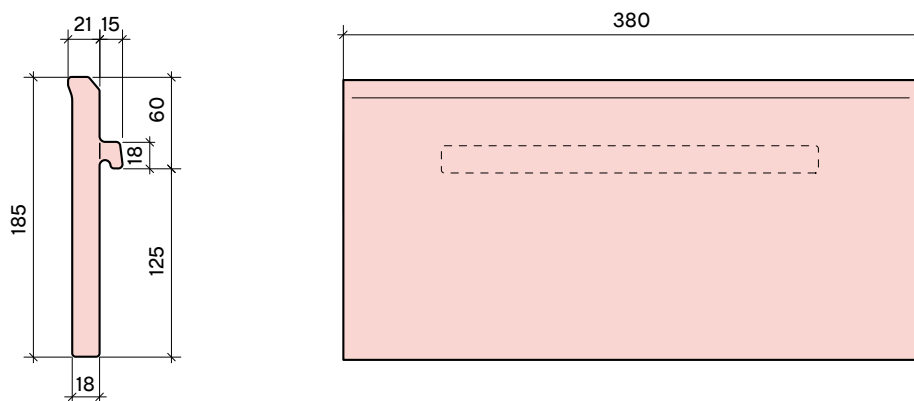
Product description

The Urban cladding tiles are innovative construction materials that unite aesthetics and functionality, bringing a tactile and textural character to buildings and the urban space. The fired clay tiles are produced industrially in their formats and shapes as ready-to-install cladding tiles. As well as being extremely easy to work with, the coarse ceramic material is the ideal sustainable product solution in a world where using limited resources responsibly is becoming ever more important.

Product

Shape / Format

Urban T



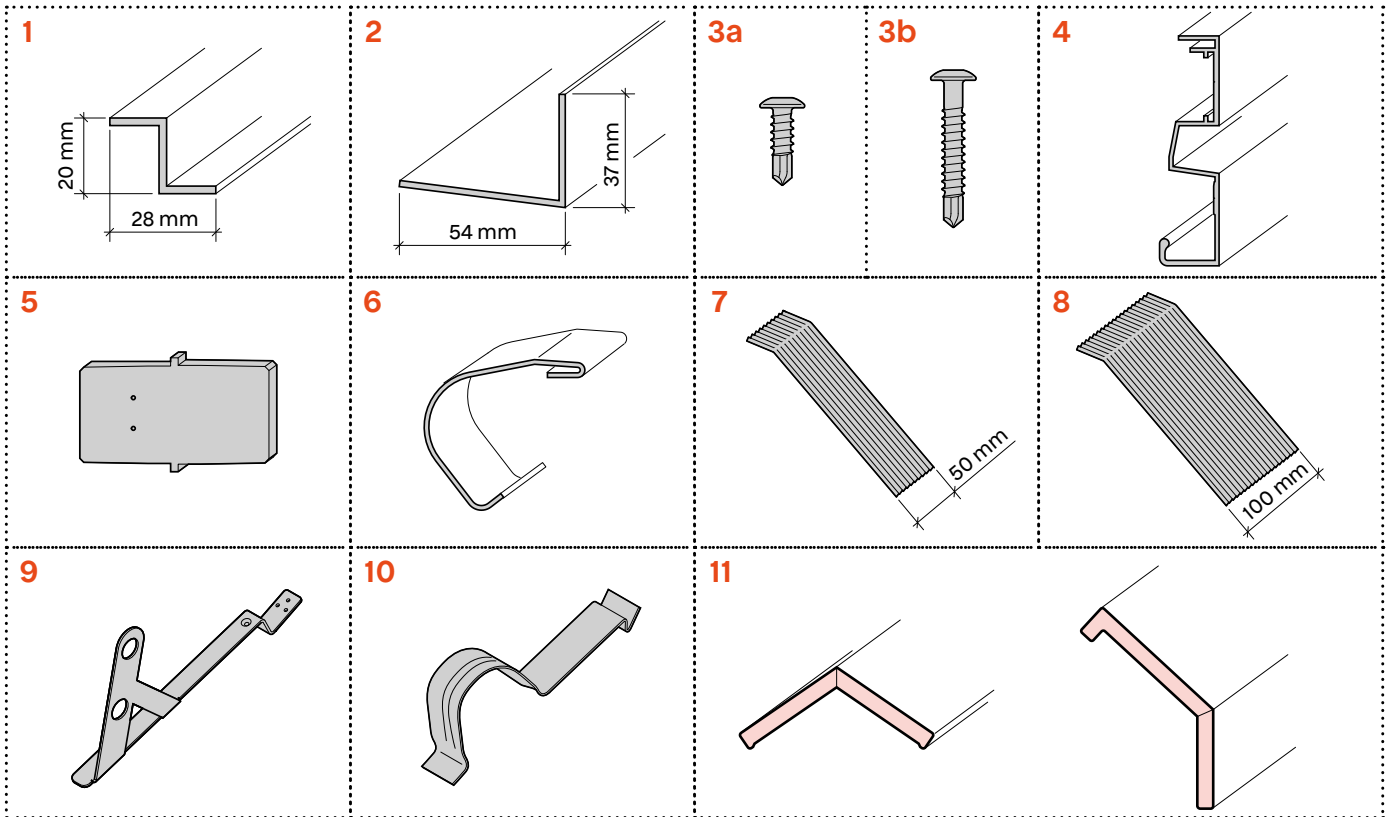
Technical data

Model	T-type
Colour	according to the separate brochure / website
Length	185 mm
Width	380 mm
Height	36 mm
Wall thickness	18 mm
Batten spacing	145 – 175 mm (165)*
Tiles per m ²	15.04 - 18.15 tiles (16.0)* depending on batten gauge
Weight per tile	2.45 kg
Weight per m ²	36.84 – 44.5 Kg (39.2)* depending on batten gauge
Production tolerance	+/- 4%
Surface	brushed
Quantity per pallet	288 pcs
Weight per pallet	705.6 kg
Packaging	bundle of 6 pcs
Fixing	with TC-Clip
Frost resistance	EN 1304, EN 539-2
Content of active soluble salts	S2 as per EN 771-2

* Quantity with the standard batten gauge

Product

System components



No.	Material short text	Packing unit	Pcs/unit	Minimum sale unit	Quantity per m ² **	kg/pce
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Urban TC system

1	Urban Z profile 20 mm (1 pce = 3 m)	Crate	200*	1 Piece (3 m)	1.92 m	0.78
2	Urban Beginner 83 (1 pce = 3 m)	Crate	200*	1 Piece (3 m)	0.44 m	1.56
3a	Urban self-drilling screw 4.8 × 16 mm	Pack	1000	1 Pack	14.22 pce**	0.003
3b	Urban self-drilling screw 4.8 × 30 mm	Pack	1000	1 Pack	20.2 pce**	0.004
4	Urban TC-profile (1 pce = 3 m)	Crate	200*	1 Piece (3 m)	6.06 m**	1.95
5	Urban aluminium profile connector	Bag	100	1 bag	2.02 pce**	0.032
6	Urban T Clip	Pack	250	1 Pack	31.9 pce**	0.004

Special accessories

7	Aluminium joint barrier, coated 50×180 mm	Pack	1000	1 Pack	16.2 pce**	0.006
8	Aluminium joint barrier, coated 100×180 mm	Pack	1000	1 Pack	16.2 pce**	0.012
9	Urban snow retention support, anthracite	Piece	1	1 Piece	individual	0.67
10	Urban snow hook, anthracite	Bag	100	1 bag	individual	0.071

Accessory tiles

11	Urban bespoke tile	Piece	1	1 Piece	individual	individual
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* Quantities per unit may differ slightly

** The quantity required depends on the batten gauge. The numbers above are calculated by a gauge of 165 mm.

Planning

Basic principles

As the basis for planning, it is recommended to consult SIA standard 232 “Hinterluftete Bekleidungen von Aussenwänden” (“Rear-ventilated cladding of external walls / rainscreen façades”) and SIA standard 118/232 “Allgemeine Bedingungen für geneigte Dächer und hinterluftete Bekleidungen von Aussenwänden” (“General conditions for pitched roofs and rear-ventilated cladding of external walls”) from the Swiss Society of Engineers and Architects SIA. These standards define the current “codes of building practice” for rear-ventilated façades.

Building dilatation

In the case of structural dilatation joints, the façade substructures must also be continuously separated. Cladding tiles that are fitted over separation joints of support profiles must be fastened to only one of the support profiles in order to ensure that dilatation is not impeded. In the case of the Urban TC-profile, a spacing of 10 mm must be observed.

Rear ventilation

The spacing between the cladding and the layer behind, such as a facing sheet or thermal insulation, must be at least 20 mm in order to satisfy the basic requirement.

On timber substructures, wooden battens can significantly reduce the free cross-section of the ventilation space. This can be accounted for by increasing the width of the rear ventilation space.

Ventilation openings

In the case of façade cladding with butted/closed joints, ventilation openings must be created at the lowest and highest point of the façade in order to ensure sufficient rear ventilation. Properly functioning rear ventilation also increases the lifespan of the cladding tiles and helps to keep the building cool in the summer.

The free ventilation cross-section must satisfy the following parameters:

- At least the size of the rear ventilation cross-section
- At least 100 cm² per running metre
- Evenly distributed
- Reductions in the cross-section due to perforated plates, grilles and the like must be given due consideration (SIA standard 232/2). Perforated plates with a hole diameter of 5–8 mm are to be used.

Ideally, and wherever possible, window feed-throughs and the like should be provided with ventilation openings in the lintel area to let air in and openings under the windowsill to let air out.

Insulation / Breather membrane layer

It is recommended to use insulation that is hydrophobic or has a water-repellent non-woven fabric coating on its outer face.

The Urban cladding with a material thickness of 18 mm has a uniform joint ratio of < 3.5%. Therefore, according to SIA standard 232/2, Section 2.7.1, with Urban cladding tiles a facing sheet is not necessary.

Fire protection

Urban cladding tiles can be used on all possible building types. However, the correct substructure must be chosen. Façades with a rod-type timber substructure (support battens) are approved for buildings up to the high-rise limit (30 m total height). For higher buildings, non-flammable material must be used for the entire substructure. Suitable, approved aluminium components are available for such applications.

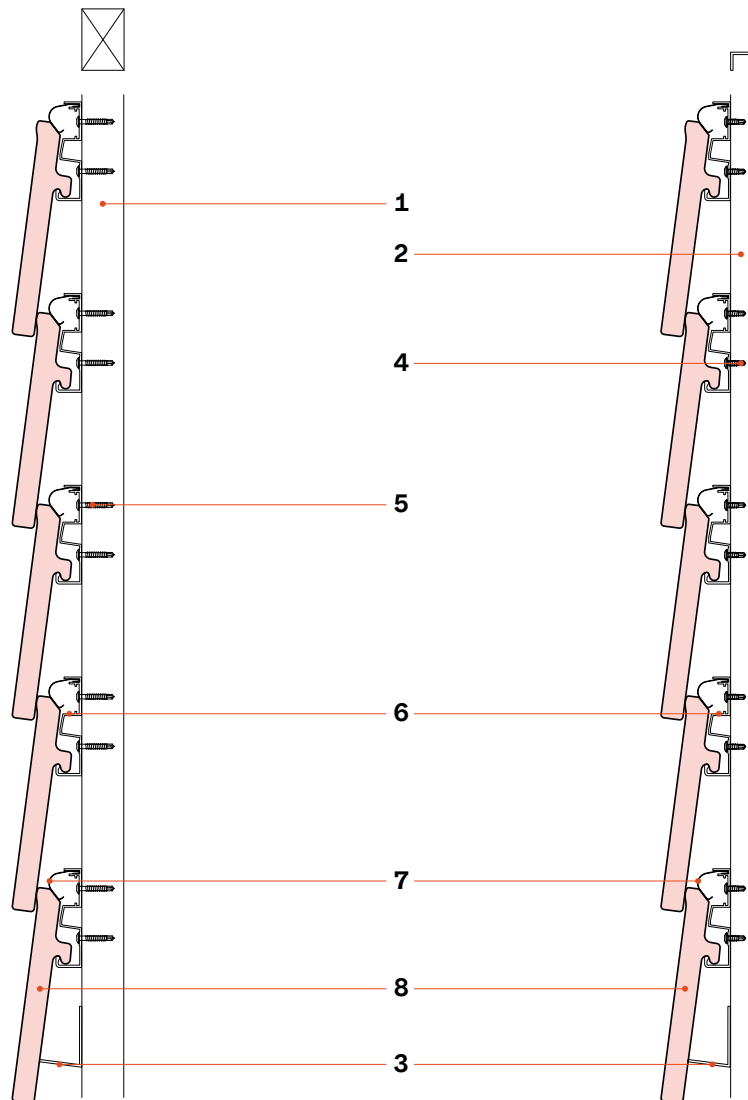
Structural analysis

A building-specific structural analysis is used to define the suitable primary substructure. This is the task and the responsibility of the architect/planner. Details of the component weights should be taken from the data sheets. If necessary, strength tests may be requested.

Planning

Principle

The Urban T cladding tiles are installed exclusively on horizontal support profiles (TC-profile) in the both cases of rear-ventilated / rainscreen façade systems, or on roofs. Each tile is secured with two Urban T clips. The TC-profiles are fixed either on vertical wooden counter-battens or aluminium profiles. Therefore are either Urban self-drilling screws 4.8 × 30 mm or 4.8 × 16 mm required.



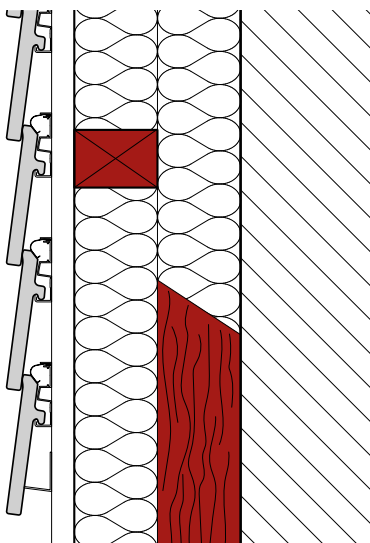
1	Rear ventilation battens / rear ventilation space / Counterbattens
2	Urban Z-profile / rear ventilation space
3	Urban Beginner 83 profile
4	Urban self-drilling screw 4.8 x 16 mm
5	Urban self-drilling screw 4.8 x 30 mm
6	Urban TC-Profile
7	Urban T-Clip
8	Urban T cladding tile

Substructure types

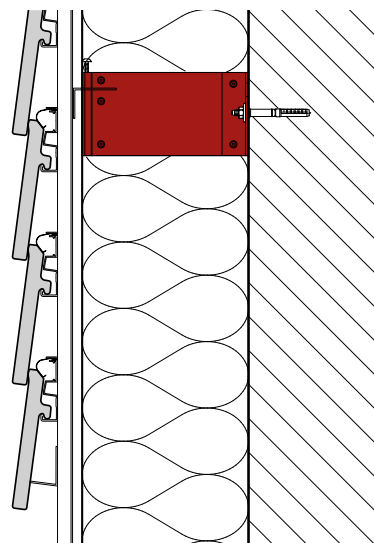
The primary substructure (shown on this page in red) is the structural connection between the load-bearing external wall and the façade cladding. It consists support profiles and wall brackets made of metal (e.g. wall brackets with floating and fixed points made of aluminium, hot-dip galvanised or stainless steels) and/or wood (e.g. counter-battens/base battens, boarding/ wood-based materials) or fibre-reinforced plastics.

Urban TC-profiles and Urban T clips are compulsory for fixing the Urban T cladding tiles. Zürcher Ziegeleien doesn't cover for combinations with other accessories.

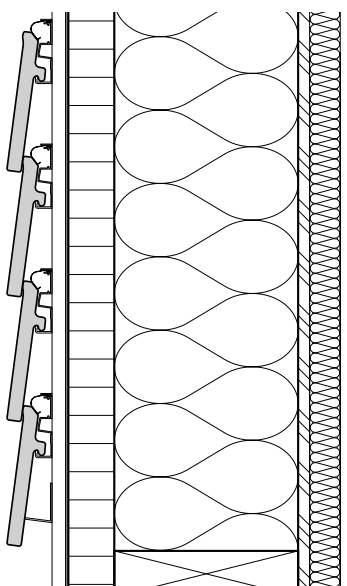
Wood / Metal



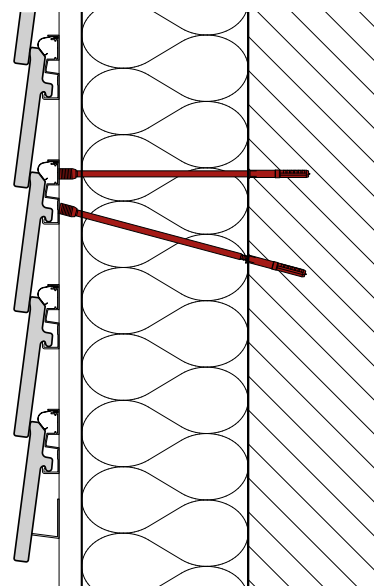
Metal / Metal



Timber frame

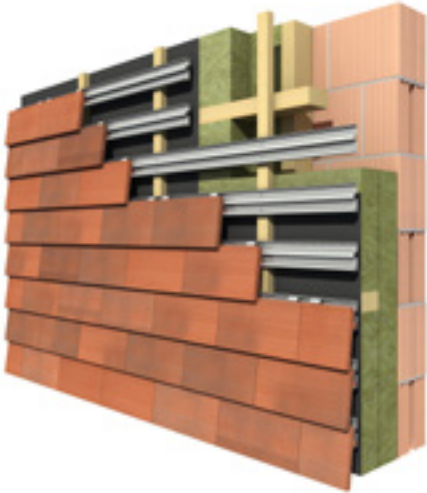


Wood / Spacer screws



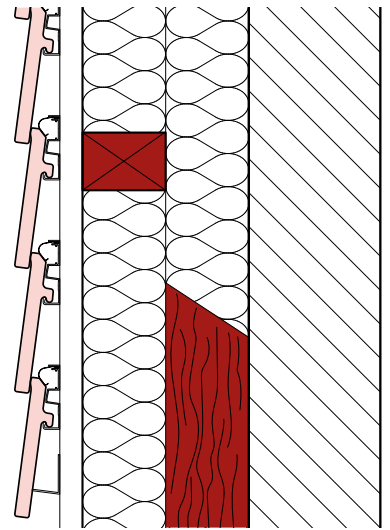
Example constructions

Wood / Metal



Façade structure

Traditional wall construction with a timber substructure; no special requirements concerning fire protection and only moderate thermal protection requirements.

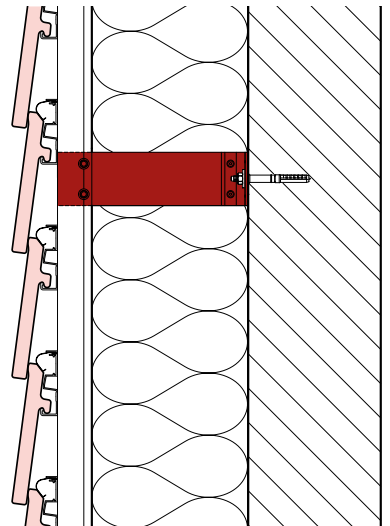


Metal / Metal

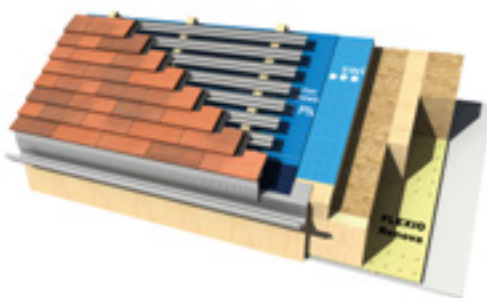


Façade structure

Façade structure with a metal substructure (façade brackets), including Thermostop element for high thermal protection requirements. This substructure is completely non-flammable and can be used above the high-rise limit.

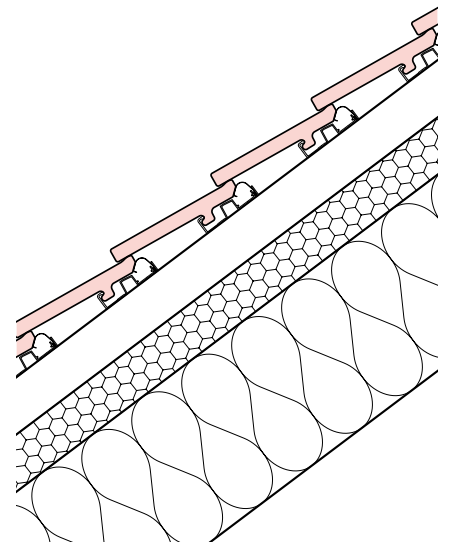


Roof (Wood / Metal)



Roof structure

Urban cladding tiles can be used on roofs with a pitch of up to $>27^\circ$. The tile joints should be laid over coated system joint shingles made of aluminium. The sub-roof must be fitted according to the applicable extraordinary requirements.



Colours and joint patterns

All colours can be downloaded from the website as a texture file.

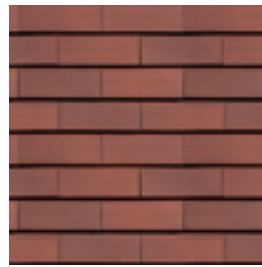
Urban T



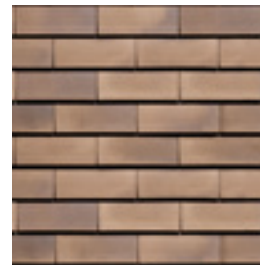
Frederiksberg



Christianshavn



Holmen



Rosenborg

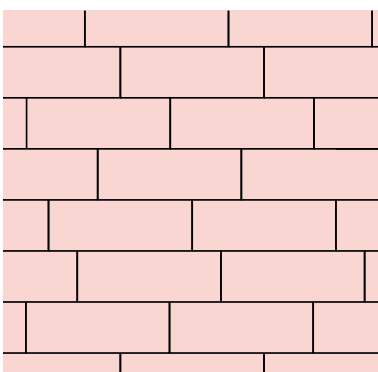


Nordhavn

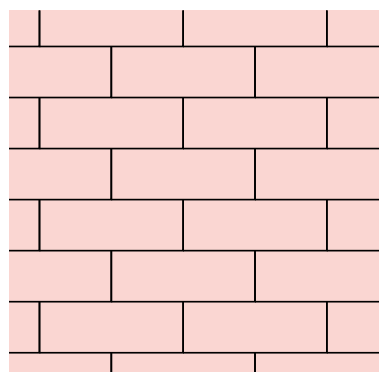
Colour variations

Coarse ceramic is a natural product, therefore slight colour variations are normal and are to be accepted. In order to achieve a natural colour effect, it is recommended to take tiles from at least 4 pallets at once and mix them in with one another.

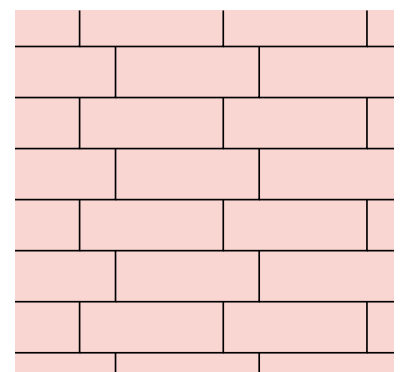
Joint pattern options



Irregular (random laying)



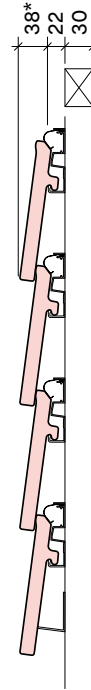
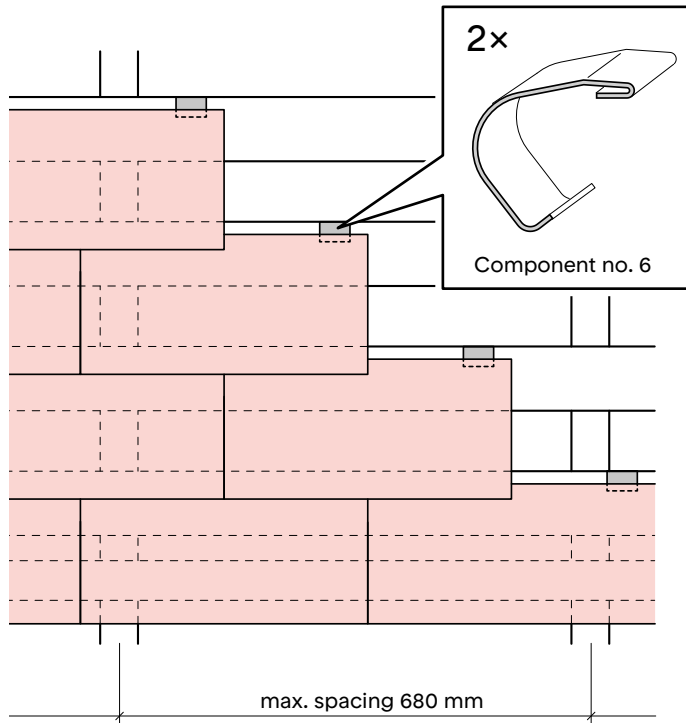
1/2 Bond



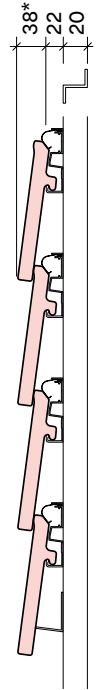
1/4 Bond

Recommendation: Random laying is the most installer-friendly method by far and creates less waste. The length tolerances of the tiles may be up to +/- 10 mm.

Division / spacing for vertical substructure



Wooden counterbatten
30/50 mm
a = 680 mm



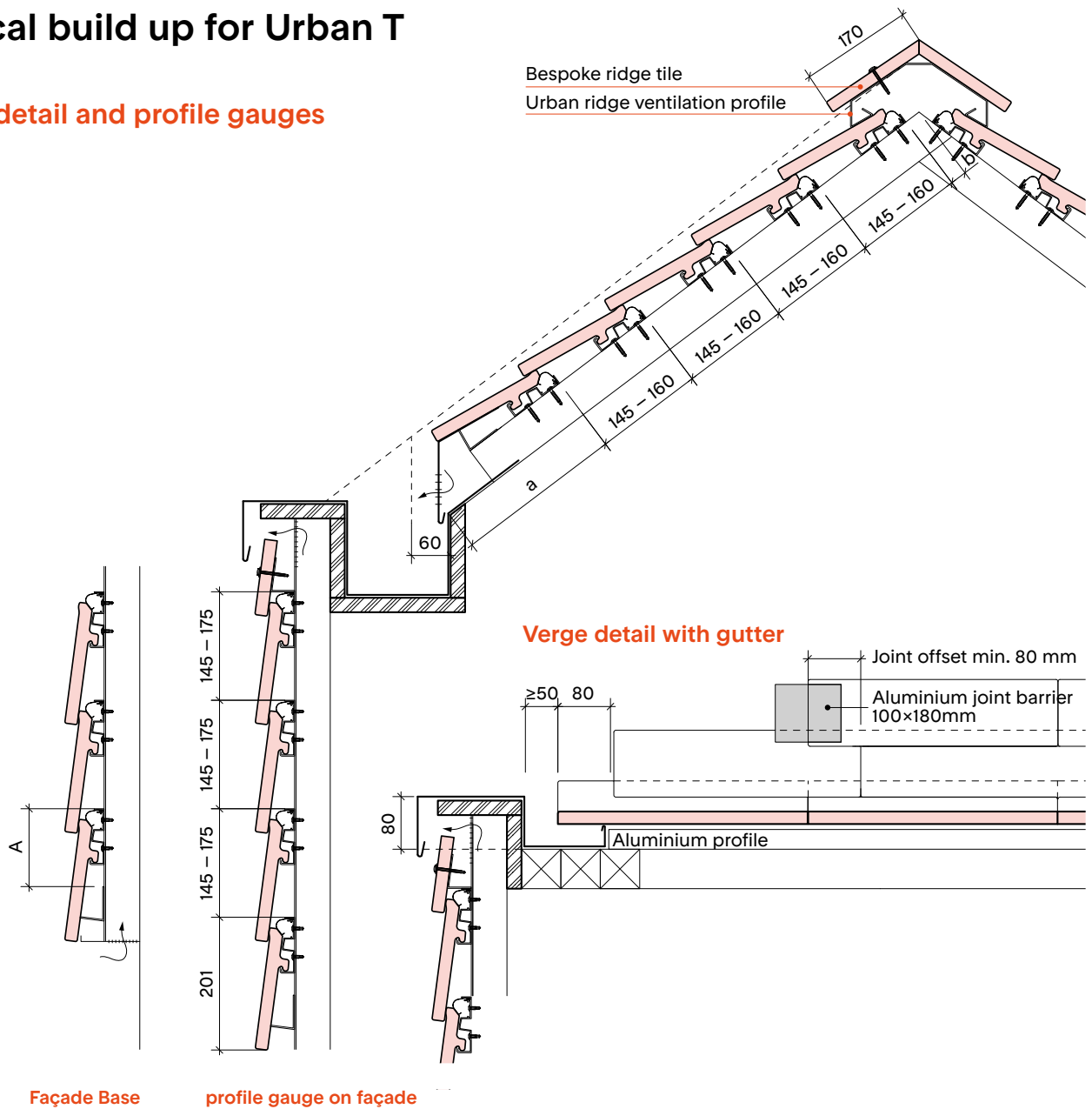
Aluminium counterbatten
a = 680 mm

* Dimension depends on the batten spacing

Construction details

Typical build up for Urban T

Eaves detail and profile gauges



Dimensions table Urban Beginner profile

General Batten sp	Dimension A
145	104
165	115
175	120

Suitability regarding reference height

As a general principle, up to a reference height of 1400 h₀(m) as per the snow load card from SIA 261 including correction rating and in compliance with SIA 232/1.

Minimum roof pitch, rafters

Underlayer foil according:
extraordinary load ≥ 27°
(drainage into gutter required)

Rafter pitch Distance b

Required ridge tile side 170 mm

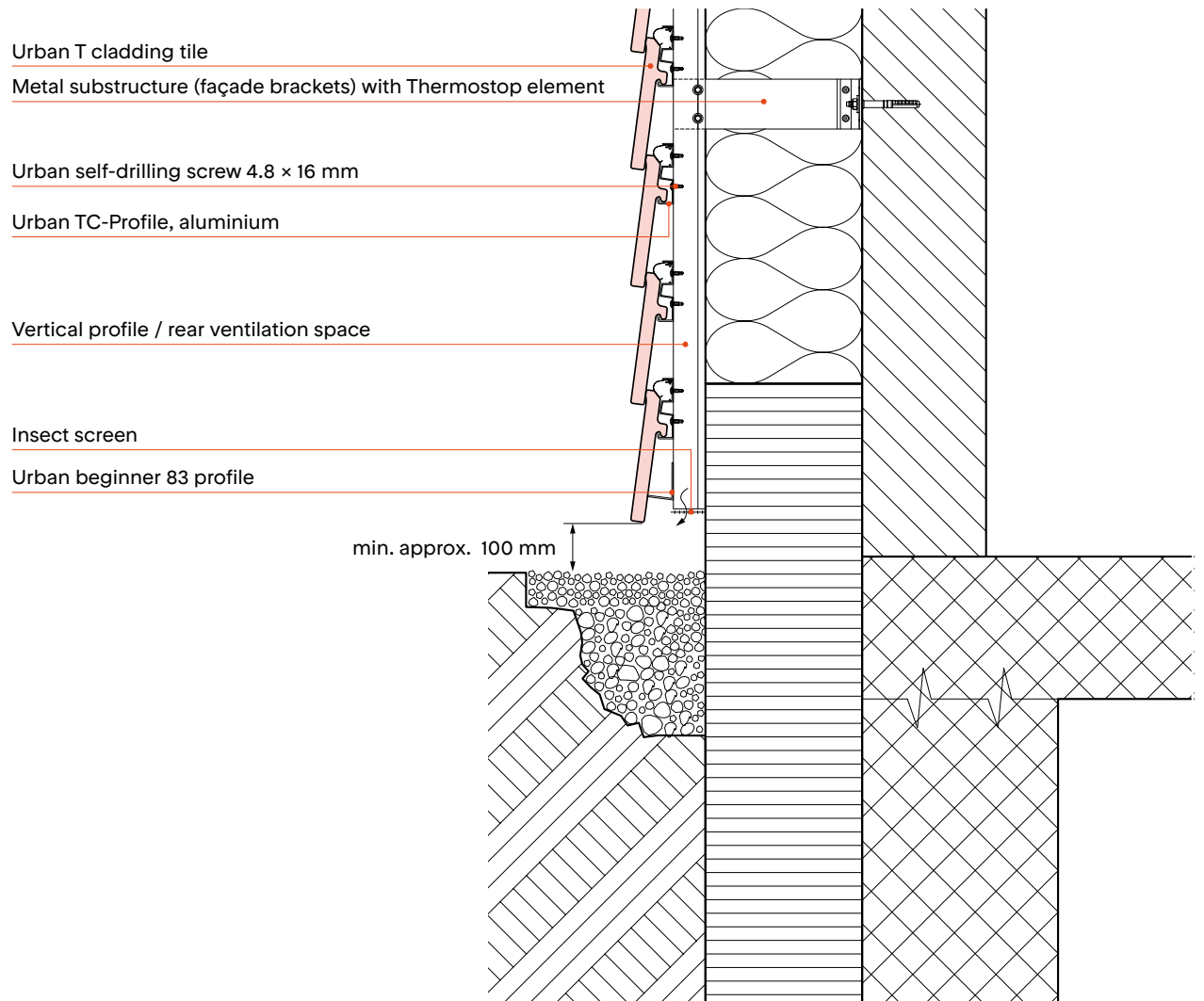
30°	19 mm
40°	19 mm
50°	33 mm
60°	45 mm

Distance a

30°	205 mm
40°	230 mm
50°	261 mm
60°	304 mm

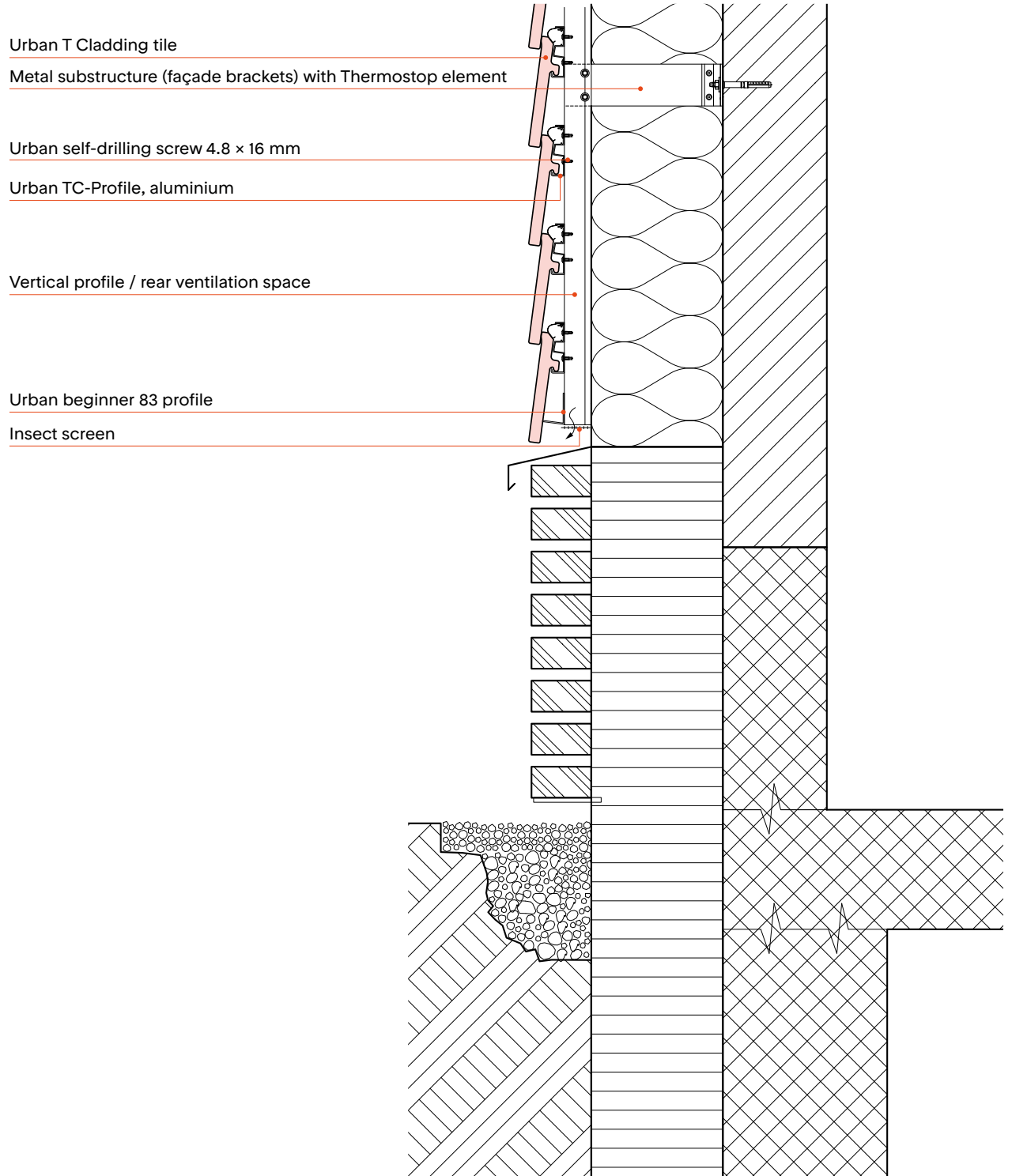
Façade Base

Scale 1:10



Façade Base

Scale 1:10



Window Lintel

Scale 1:10

Urban T Cladding tile

Urban TC-Profile, aluminium

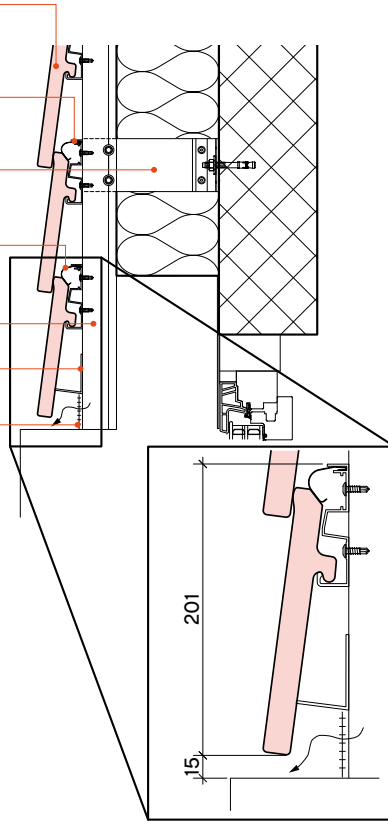
Metal substructure (façade brackets) with Thermostop element

Urban T-Clip

Vertical profile / rear ventilation space

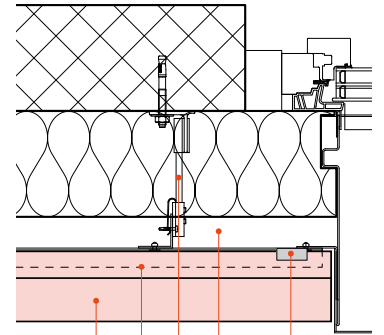
Urban beginner 83 profile

Insect screen



Window jamb, horizontal section

Scale 1:10



Urban T Cladding tile

Urban TC-Profile, aluminium

Metal substructure (façade brackets) with Thermostop element

Vertical profile / rear ventilation space

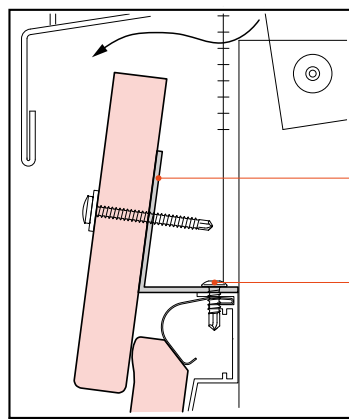
Urban T-Clip

Window Sill

Scale 1:10

Urban beginner 83 profile
Component no. 2

Urban self-drilling screw 4.8 × 16 mm
Component no. 3a



Insect screen

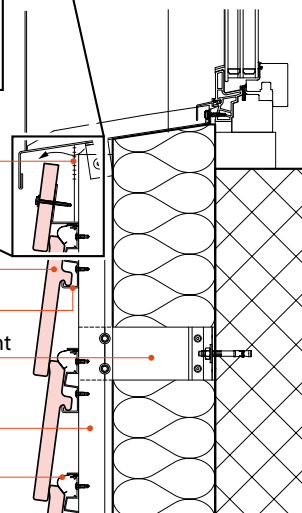
Urban T Cladding tile

Urban TC-Profile, aluminium

Metal substructure (façade brackets) with Thermostop element

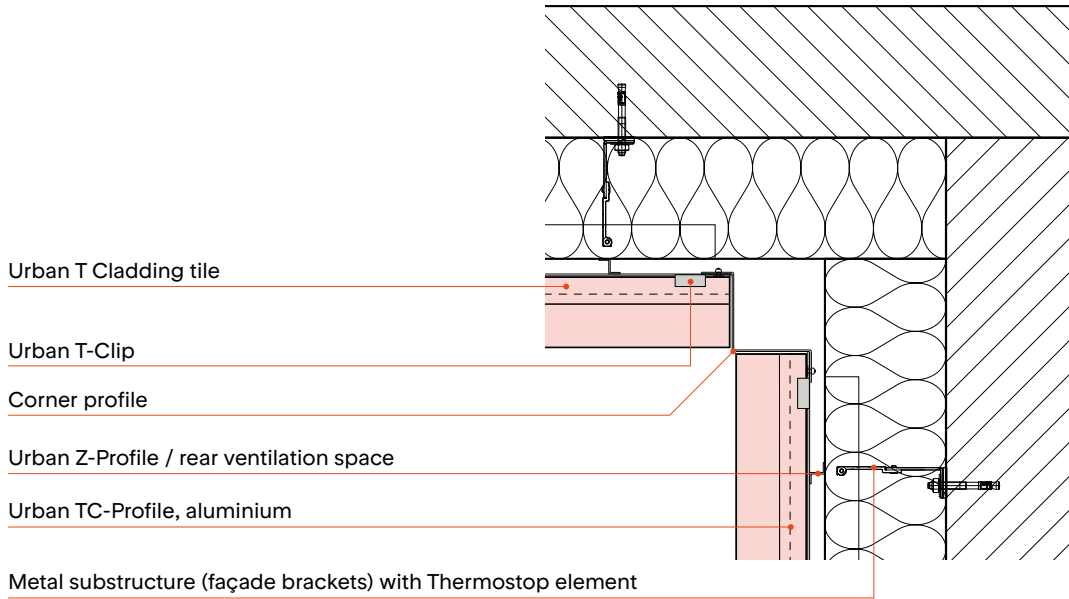
Vertical profile / rear ventilation space

Urban T-Clip



Inner building corner, horizontal section with aluminium substructure

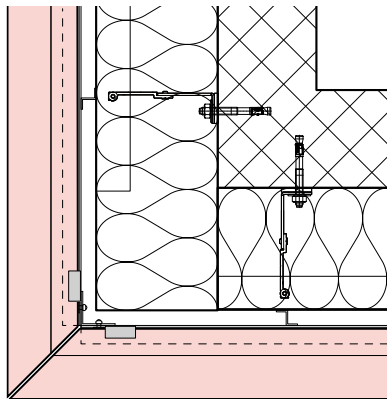
Scale 1:10



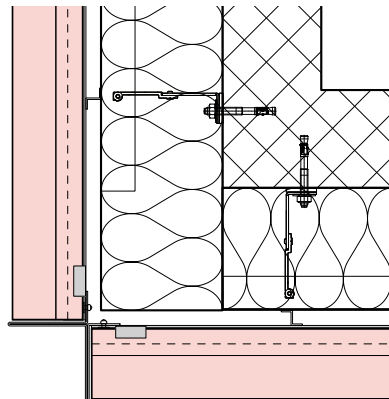
Outer building corner, horizontal sections

Scale 1:10

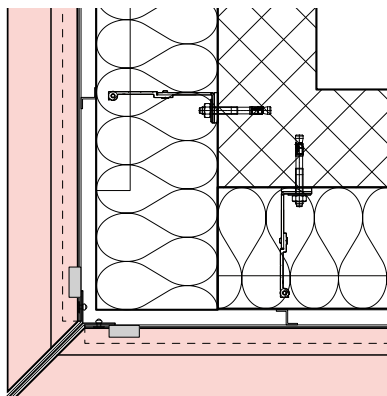
Bevel-cut tiles



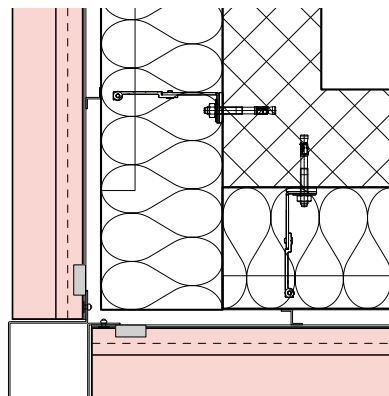
Cross-corner profile



Spacer profile

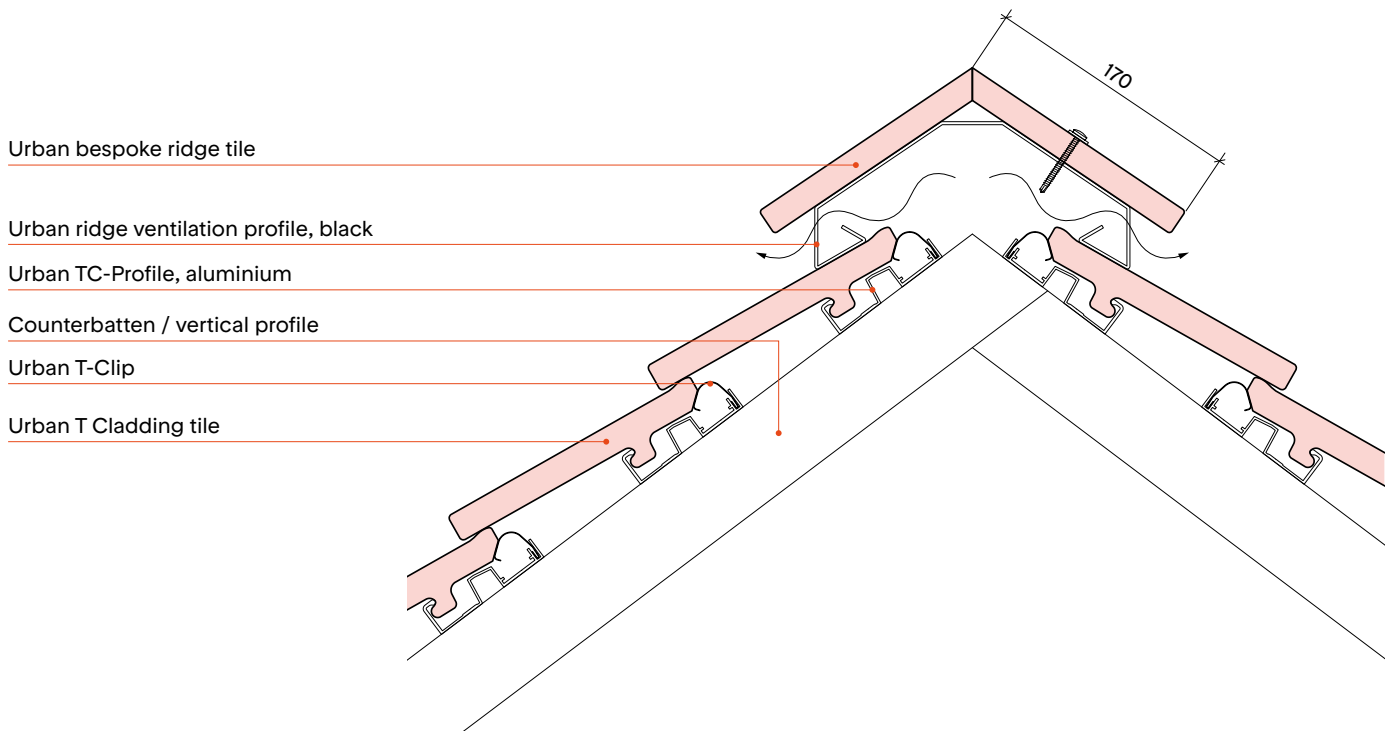


Cube corner profile



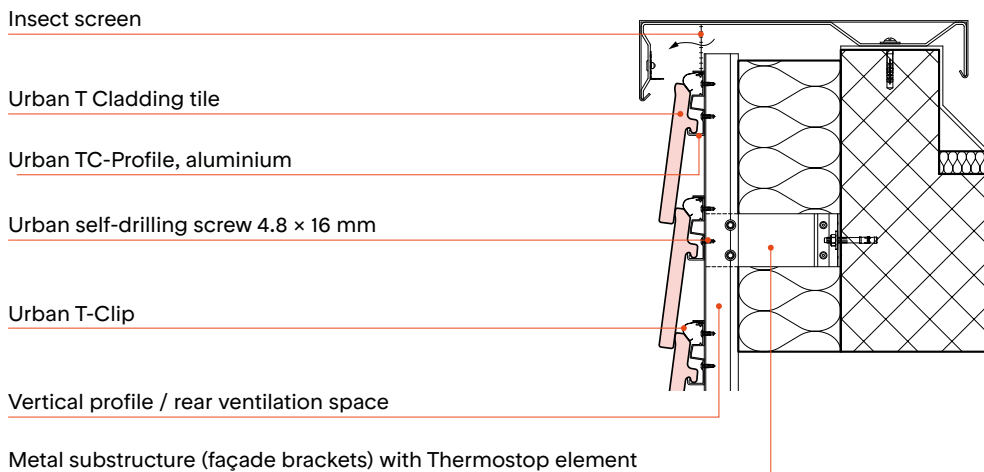
Ridge with ridge ventilation opening

Scale 1:5



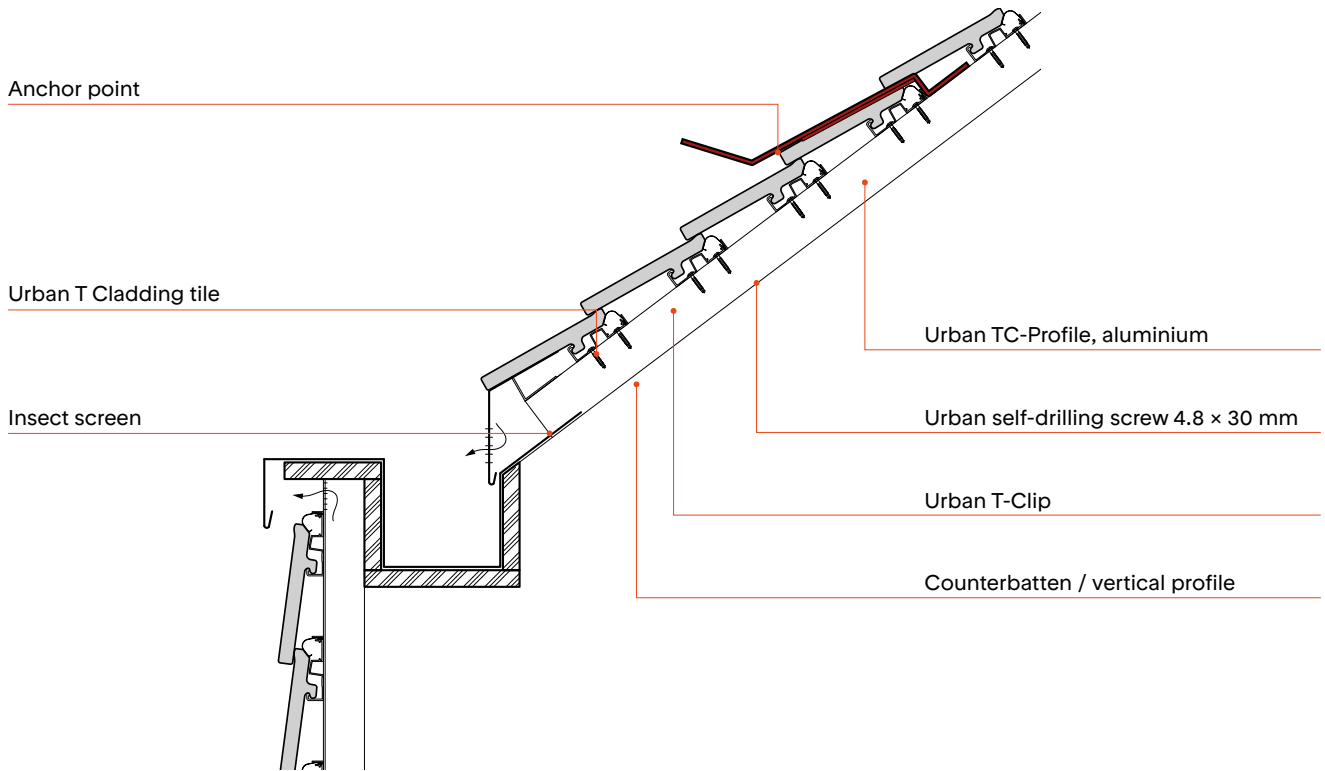
Flat roof detail

Scale 1:10



Anchor point for roof fall protection system

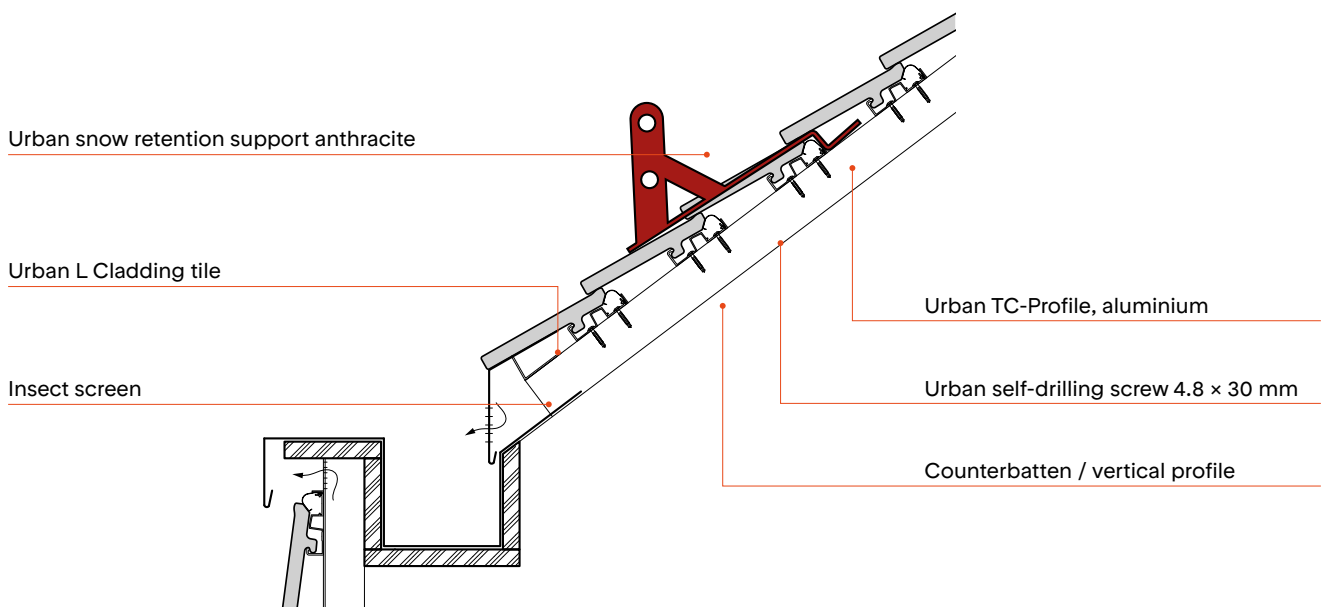
Scale 1:10



Snow retention system

(for low load $h_0 = < 800$ m)

Scale 1:10



Installation

Instructions

Mounting the cladding tile

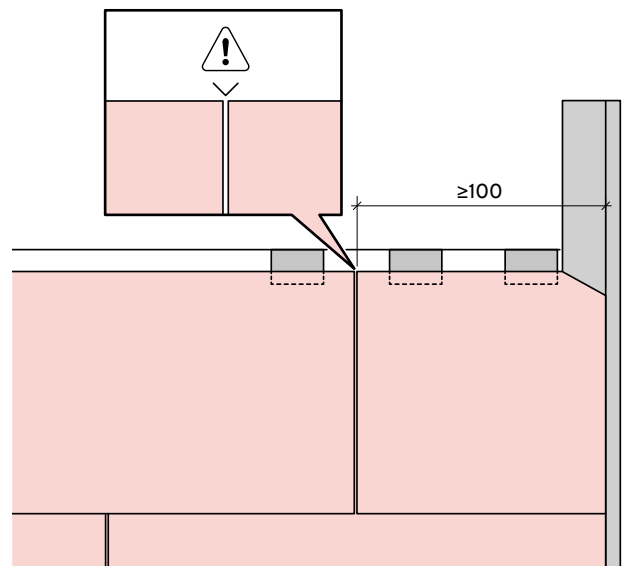
- Place the Urban cladding tiles individually and with blunt sides lateral onto the TC-profiles.
- The sides of the tiles should not touch, and Behind each tile must be placed 2 Urban T Clips support profile such that they cannot wobble but are not under tension.
- Take Urban cladding tiles from at least 4 different packs/pallets at once and mix them in with one another to achieve a natural colour effect.

Overlaps

Minimum overlap	Façade	Roof
Lateral joint overlap	≥ 80 mm	≥ 80 mm
Height overlap	≥ 11 mm	≥ 25 mm

Connections

- Minimum width of cut tiles ≥ 100 mm
- In the case of side connections such as sheets, profiles and the like, the upper corners in the overlap area must be trimmed outwards with an undercut.

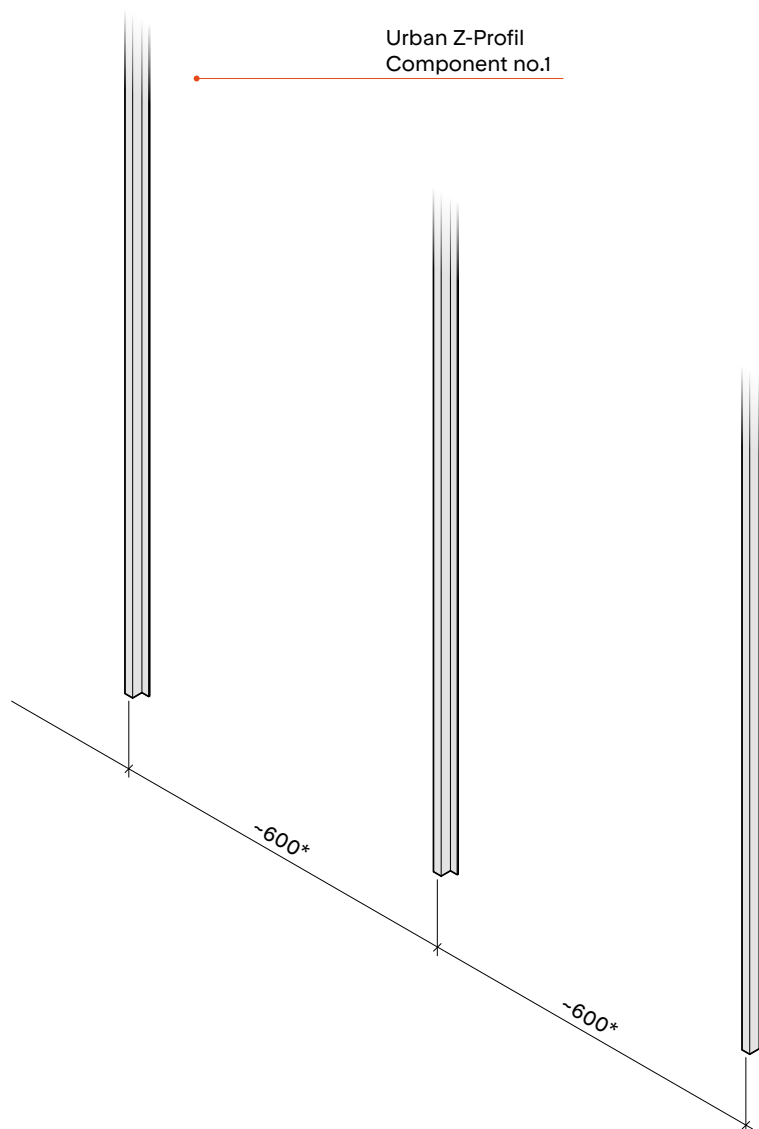


Storage / temporary storage at the building site

- Unload the Urban cladding tiles carefully, store them off the floor, and protect against dirt and weather exposure.
- If using covers such as tarpaulins, make sure that the stacked tiles still have adequate ventilation.
- The factory packaging is for protection during transport and does not offer protection against the weather.
- Pallets must not be stacked for transport.
- Up to 4 pallets may be stacked for storage.

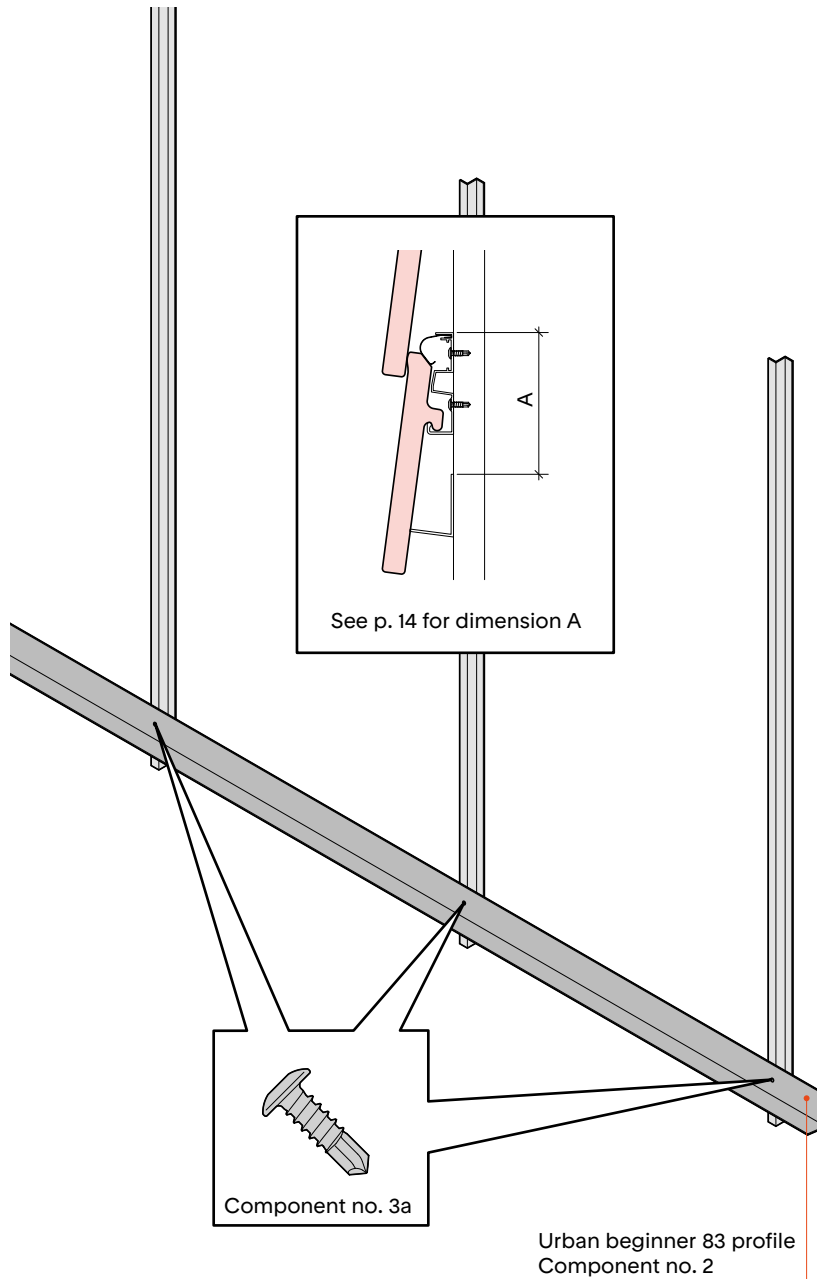
Assembling the TC-System

1. Z-profiles are available for use as vertical rear ventilation battens. They are an optional element.

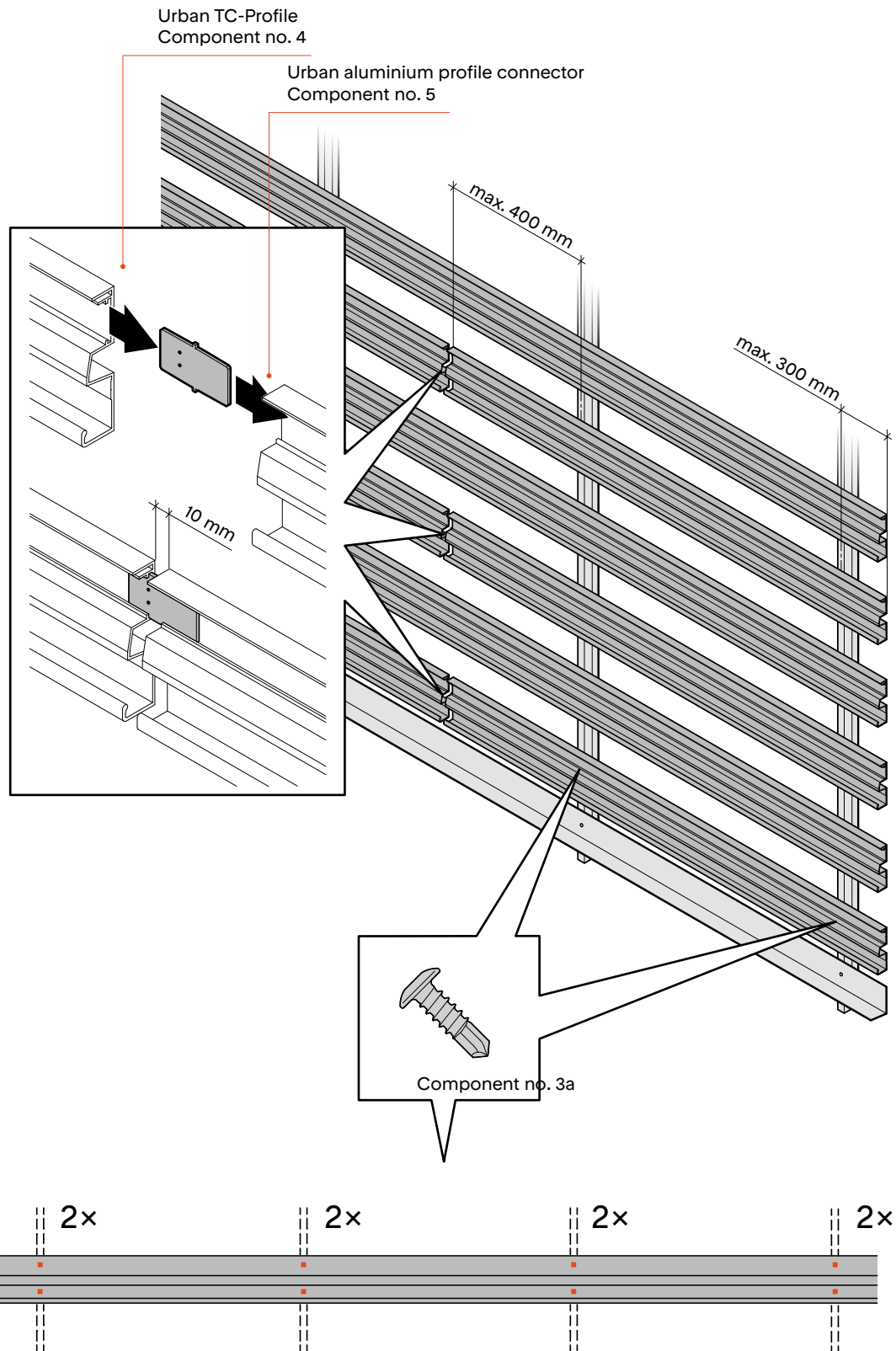


* See p. 13 for max. axial spacing

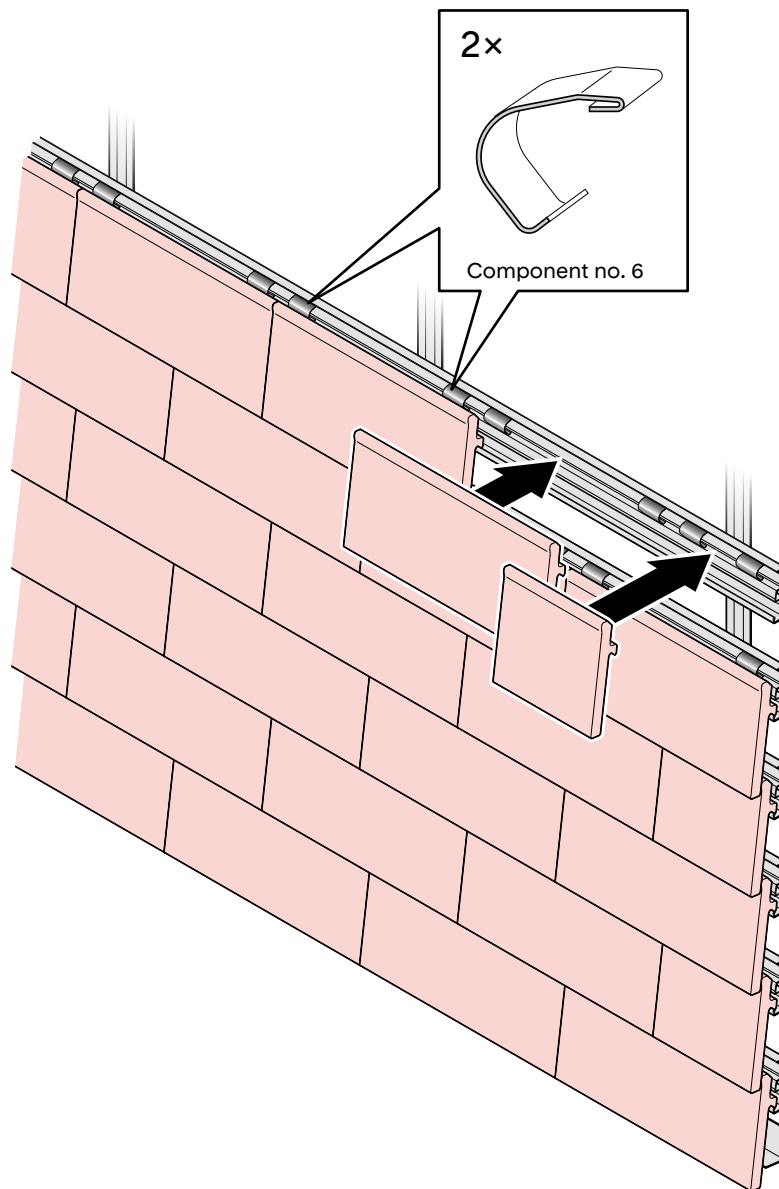
- 2.** First, attach the Urban Beginner profile to the Z-profiles at the base of the façade.
The Urban self-drilling screws 4.2 × 16 mm are to be used.



- 3.** Affix the Omega support battens at a regular spacing.
The Urban self-drilling screws 4.2 × 16 mm are to be used for this.
The butt joint should be created alternately in a different field.
A distance of 10 mm must be retained between two profiles as dilatation joint.
The fastening plate serves as an assembly support.



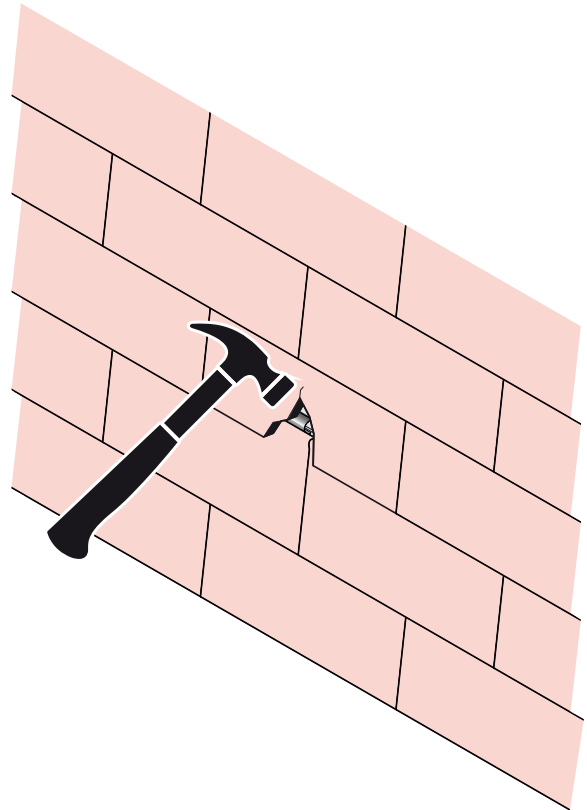
4. Stick two Urban T Clip per cladding tile in Urban TC profile. The rear side nose of the cladding tile must be pushed into the TC profile. The sides of the tiles should not touch.



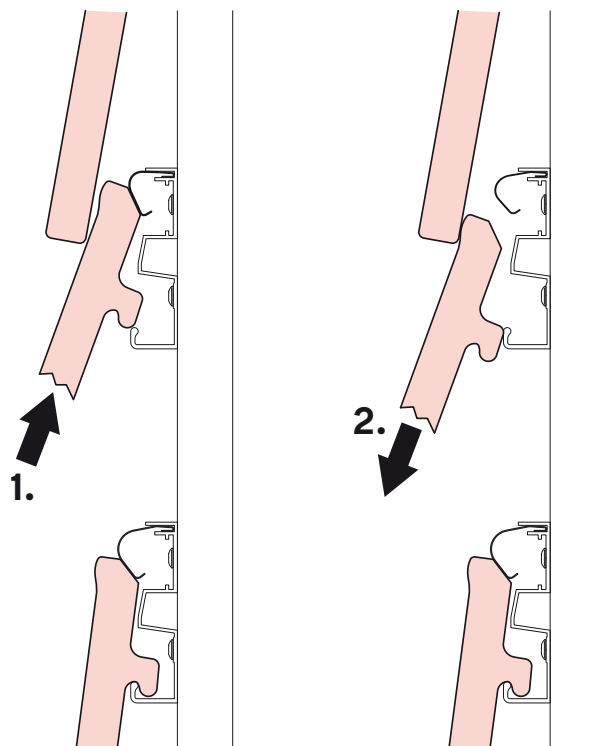
Replacement and subsequent installation of individual tiles on the surface

In particular when using façade scaffolding, it may be necessary to fit individual tiles at a later stage.

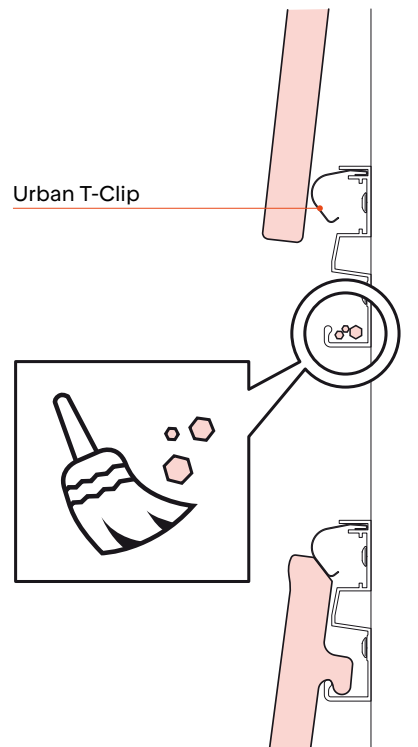
1. Cleanly remove tile without damaging any others.



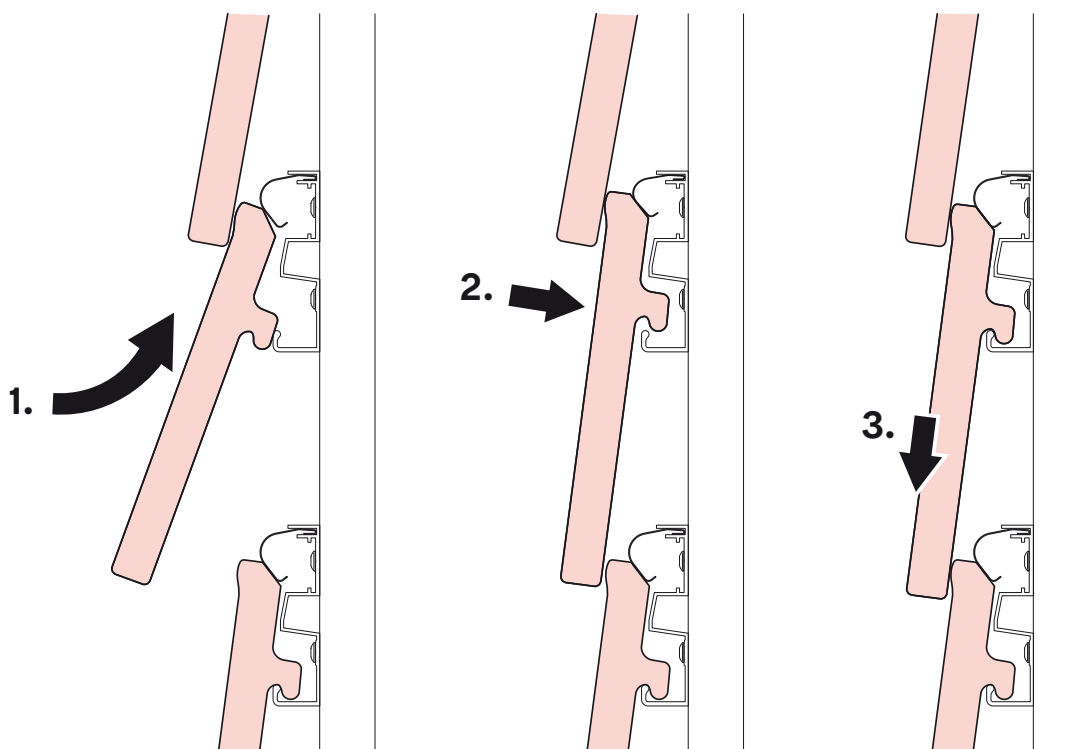
2. Cladding tile can be removed with push against the clip. Remaining fragments must be removed totally.



- 3.** Clean the Urban TC profile from fragments which may lay in the profile. Urban T-Clips must be checked and replaced if necessary.



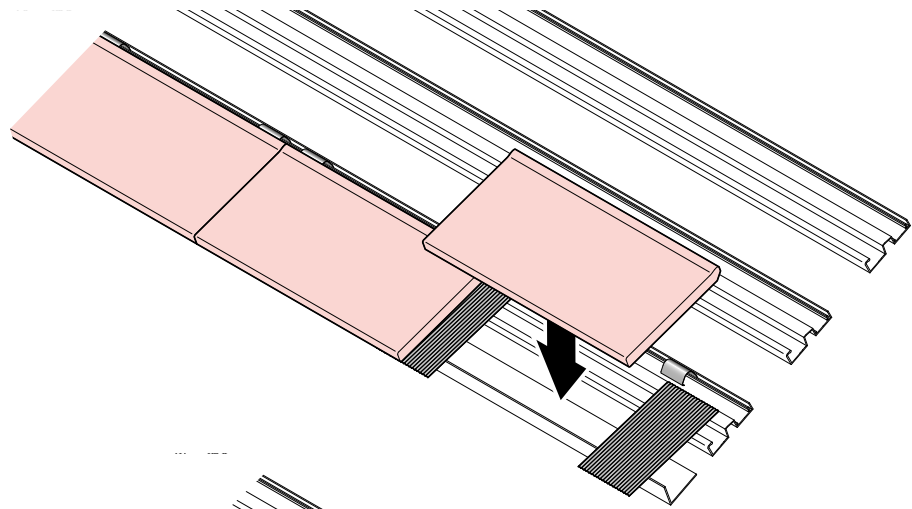
- 4.** Shift the new Urban T cladding tile from bottom to top (1.). Push the tile against the TC profile until it snaps (2.). Finally, pull the tile until the under edge is align with the existing tiles (3.).



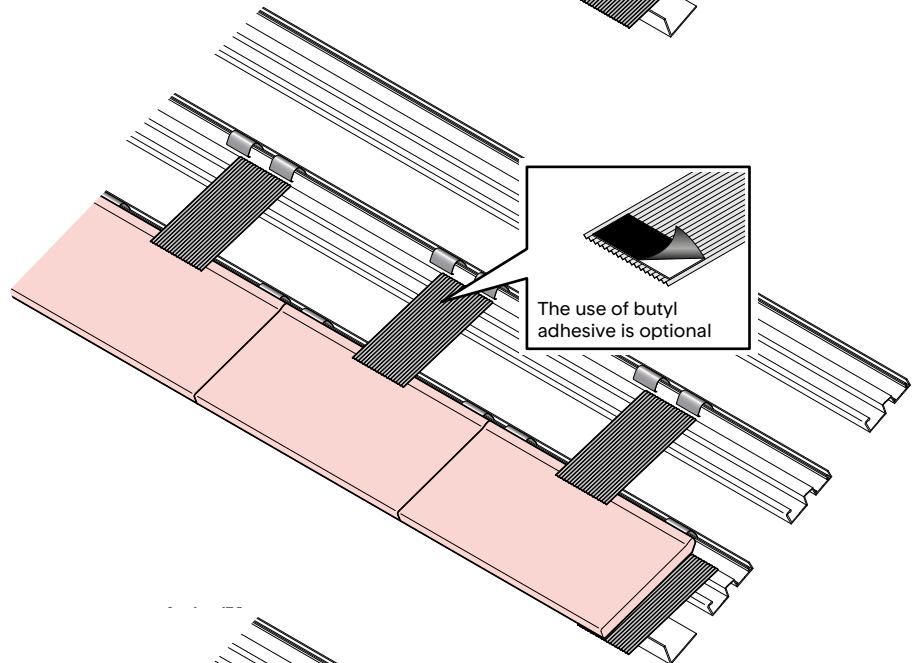
Installing aluminium joint barriers

The 100 × 180 mm aluminium joint barriers are to be used on the roof. (Component no. 7)

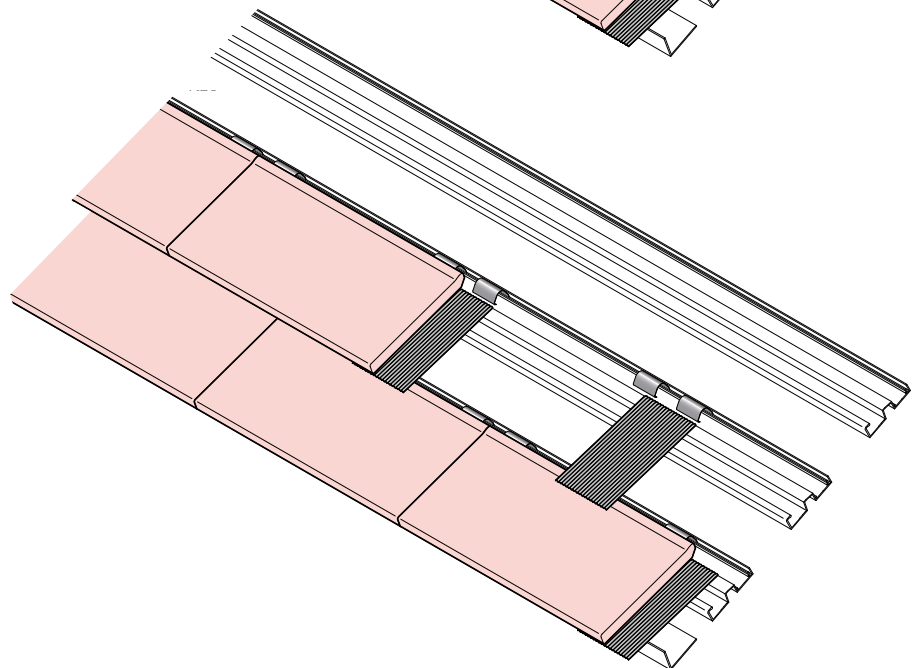
1.



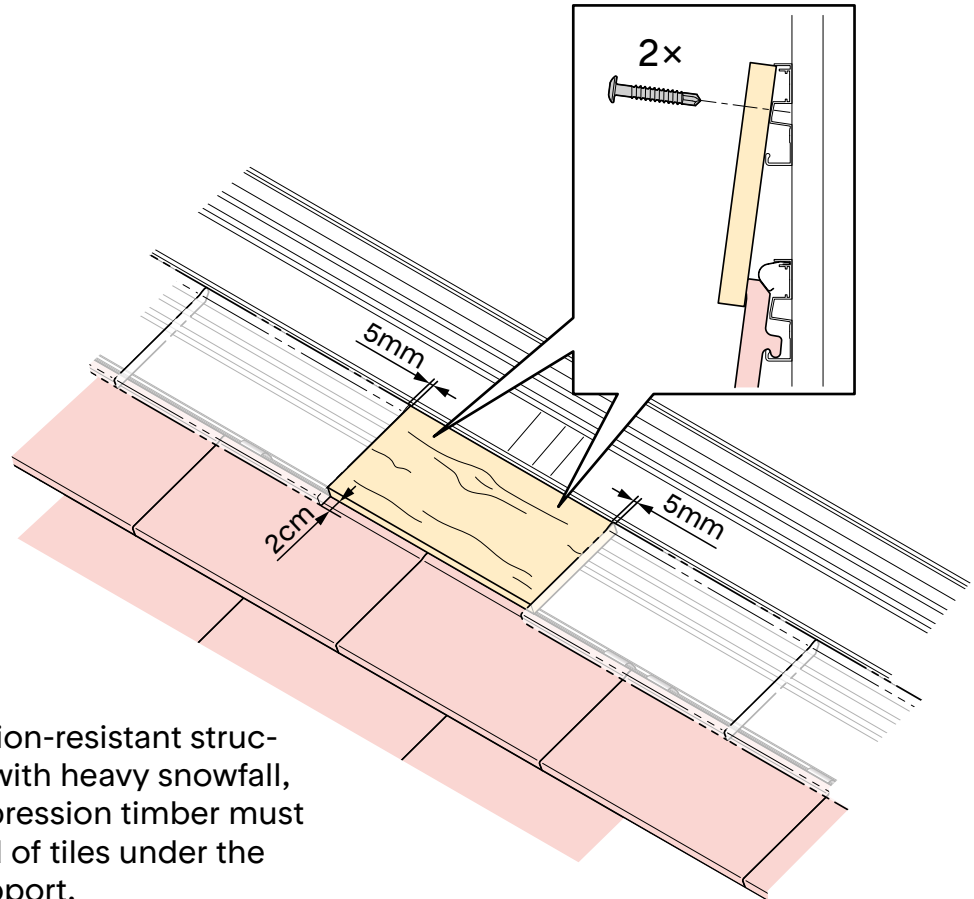
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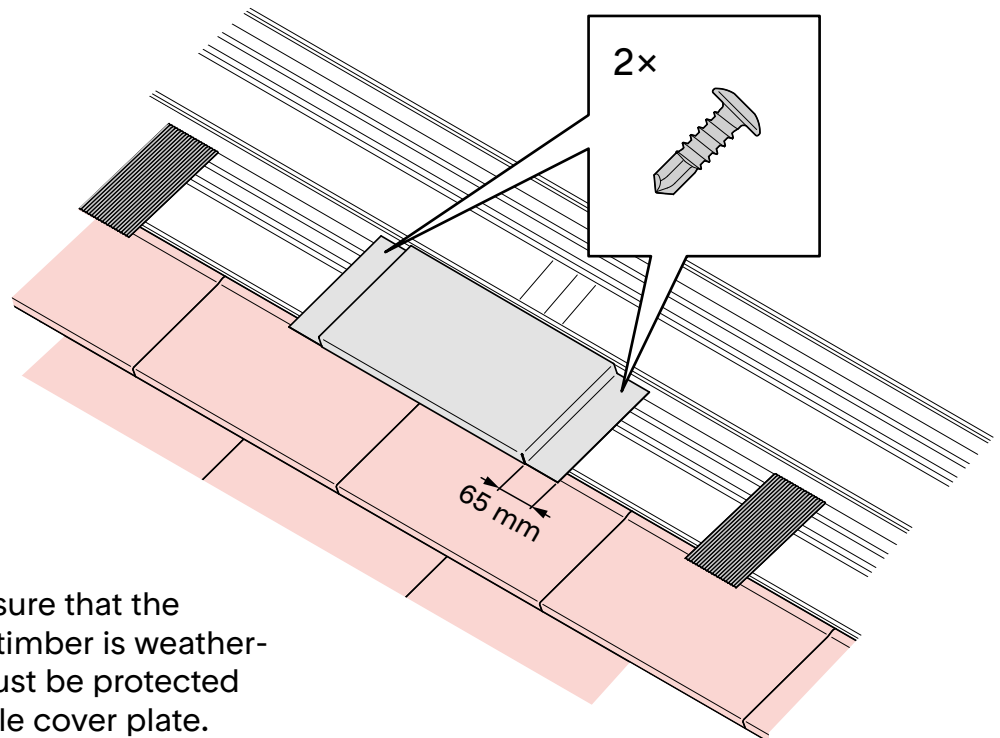
3.



Installing a snow retention system

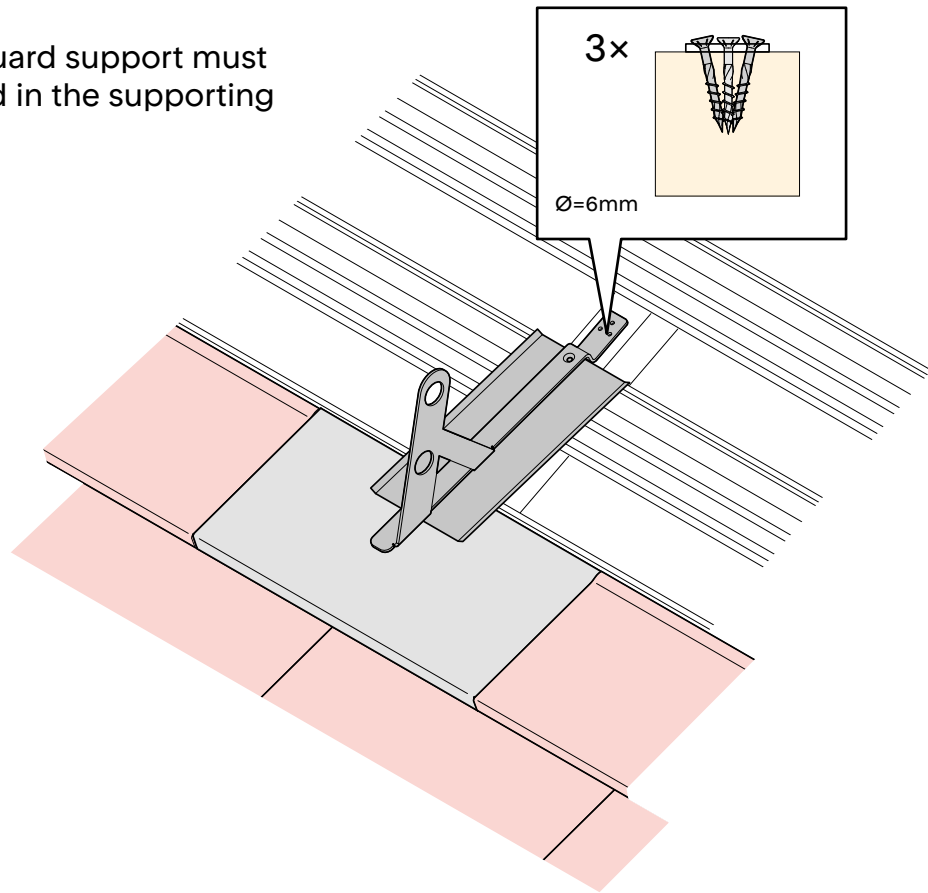


1. For a compression-resistant structure in regions with heavy snowfall, a suitable compression timber must be used instead of tiles under the snow guard support.

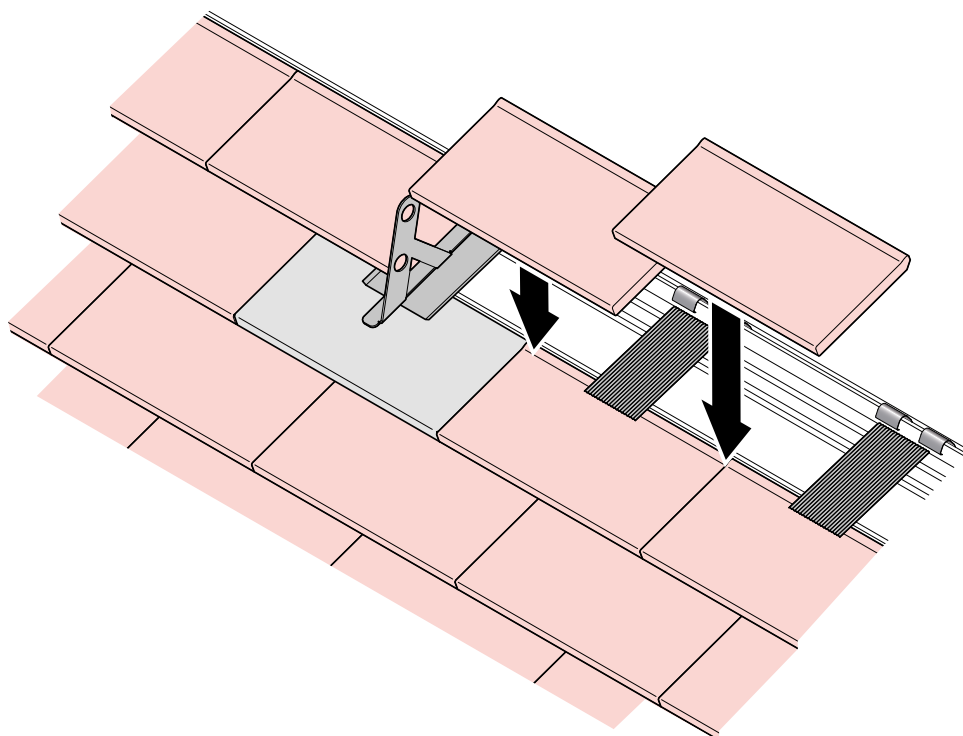


2. In order to ensure that the compression timber is weather-resistant, it must be protected using a suitable cover plate.

- 3.** The snow guard support must be anchored in the supporting structure.

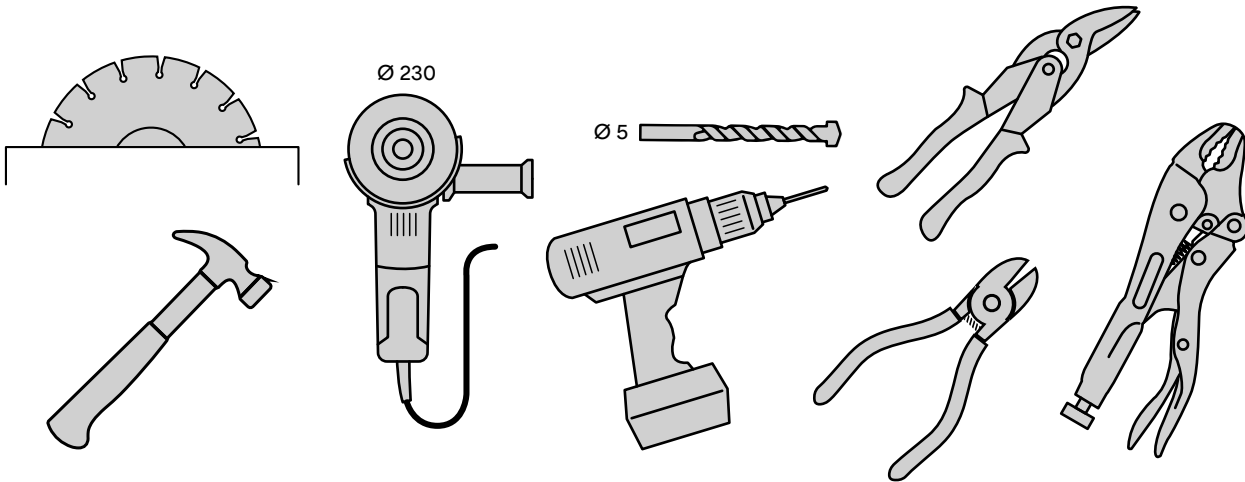


- 4.** Make sure that the lateral joint overlap in not less than 80 mm. If necessary cut the tiles.



Tools / Machines

- Roofing hammer
- Masonry drill bit Ø 5 mm
- Twist drill set for Metal
- Sheet metal cutters
- Wet cutter with diamond blade
- Cordless screwdriver
- Angle grinder / diamond blade Ø 230 mm
- Clamping pliers



Occupational safety

Wearing safety glasses, a helmet, gloves, hearing protection and a dust mask is mandatory; these must be used when cutting ceramic materials. To ensure safety on the construction site, it is recommended to wear helmets, safety glasses and gloves while carrying out installation work. Take the necessary precautions when working at height. The currently valid regulations must be observed.

Cleaning

During the installation of Urban clay cladding tiles, drilling, cutting and grinding dust as well as dirt from the scaffolding and the surrounding area can end up on the façade. The dirt deposits consist of coarse, sand-like and fine dust-like particles, which also contain lime and salt compounds. Exposure to moisture can result in visible, permanent discolouration of these deposits, which has a negative impact on the overall aesthetic effect.

Cleaning recommendation:

- Remove drilling, cutting and grinding dust immediately after carrying out the work. Clean with water.
- At the end of the day, clean with compressed air or light water jet pressure.
- Final cleaning must be carried out immediately before dismantling the scaffolding.
- Clean the cladding tiles with cold water jet pressure (40–60 bar) and a soft plastic brush if necessary.

Important: never clean in full sunlight!

Maintenance

On the façade: It is recommended to conduct a visual inspection of the façade once a year in order to identify any damage. Otherwise, no special measures are needed.

On the roof: Conduct a visual inspection at least once a year, in particular to look for signs of damage at the transition points. Defective tiles must be replaced. In the event of recurring problems in heavy snow, snow guards should be retrofitted in order to prevent ice and snow from sliding down. When using snow guards, make sure that they have the correct dimensions.

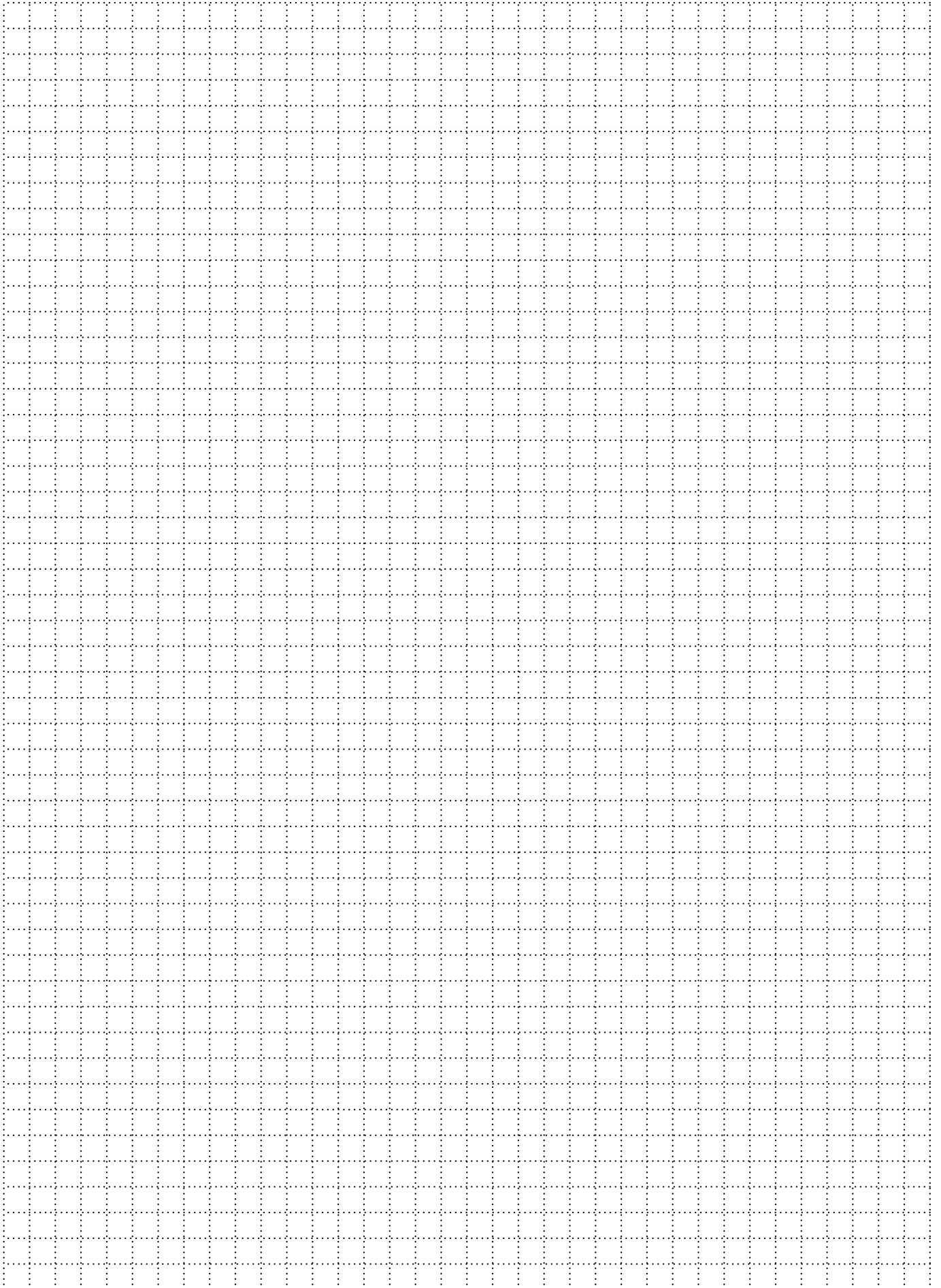
Maintenance: no regular maintenance required.

A layer of lichen and green lime may form on the surface of untreated tile products (patina), in particular if there are large trees or other vegetation in the immediate vicinity. This patina does not impair the quality or the frost resistance of the tiles. However, if desired it can be removed with moss killers, water jet (max. 40–60 bar) and a broom.

Requirements / Standards

- Standard SIA 232/1 on pitched roofs
- Standard SIA 232/2 on rear-ventilated cladding of external walls
- Guideline for the planning and execution of rear-ventilated curtain façades (“Richtlinie für die Planung und Ausführung von vorgehangten hinterlufteten Fassaden”) from IFD-Service GmbH

Notes



Everything you need for your project:

- Detailed drawings
- CAD drawings and textures
- Technical data sheets
- Documentation on planning and execution

You can download all data here:

urban.zz-ag.ch

**If you have any questions, our building consultants
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Zürcher Ziegeleien offers ceramic solutions for the entire building envelope. For over 150 years, we have been making homes more natural and building easier with our clay building materials. We use a simple raw material to develop sophisticated systems for roofs, walls and façades. We have been part of the swisspor Group since 2020.



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