

Shera

Fire-proof façade covering
made from fibre cement

Technical information

- Simple to assemble
- Low-maintenance
- Fire resistant class A2
- Durable
- Environmentally-friendly
- Can be recycled
- Impervious to damp or vermin
- Many colours available
- 10 year guarantee
- KOMO certified with product certificate



SHERA®

Version 09/2008

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Introduction:

Thank you for your interest in Shera® Wall Cladding. We are convinced that your choice to use Shera® will have the best possible result. It is important, however, that you carefully follow the processing instructions in the package. This technical document explains clearly how Shera® can best be used. The processing instructions have a KIWA quality mark and a KOMO® product assessment certificate.

Description:

Shera Wall Cladding is made up of cement and cellulose fibres. This composition has led to an extremely high quality wall cladding. The panels have a natural looking wood grain structure.

Shera is environmentally friendly and meets the requirements of the Buildings Decree (building guidelines) and the Building Materials Decree (prohibition to leach harmful substances).

Shera is completely asbestos-free. It meets the fire safety standards of class A2-s1,d0, according to the latest directive: NEN EN 13501-1.

Designs:

Shera Wall Cladding is available in two different designs:

Shera Rabat

Suitable for horizontal and vertical applications, while slight curvatures are also possible.

Shera Plank

Suitable for horizontal, vertical and diagonal applications, while slight curvatures are also possible.

Other available documents

- Shera Brochure
- KOMO product assessment certificate
- Samples
- Internet www.fetimprofessional.nl / www.frontsandfronts.nl

2. Technical Specifications

- 2.1 Shera Wall Cladding has been assessed in accordance with:
BRL 4101 part 1 "Wall claddings systems with panels. General requirements"
BRL 4101 part 9 "Flat fibre-cement boards for wall cladding".

Shera Wall Cladding is suitable for use as decorative and moisture-proof wall cladding of external divisions in:

- Roof dormers,
- Gable ends,
- Roof edges or fascia parts,
- Roof overhangs,
- Wall cladding,
- Garden fencing.

Conditions for use:

1. Processing must take place in accordance with the instructions in chapter 3 of this technical documentation
2. The wall behind must be sufficiently strong and stiff and attached to the foundation in such a way that the stability of the building construction is assured and the loads acting upon it can be transferred to the foundation.
3. Impact loads with a kinetic energy ≥ 0.5 kNm must be avoided. In places where these loads are expected, extra measures must be taken, for example by filling the space behind the panels with sheet material.

2.2 General

2.2.1 Shera Wall Cladding is produced based on cement and cellulose fibres with product properties in accordance with category A of NEN-EN 12467. The surface has a natural looking subtle wood grain structure to which a coat of paint can be applied. Shera Wall Cladding is available as Rabat or Plank and can be applied as decorative and moisture-proof wall cladding of external divisions.

- The Shera Plank (Figure 1) can be applied horizontally, vertically, diagonally or in a curvature (see 3.2.1 Design) to the bearing structure.

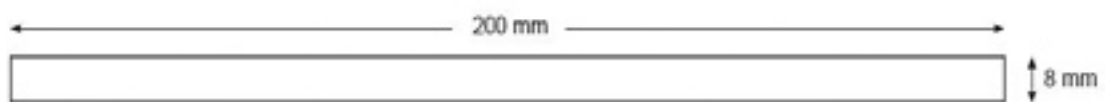


Figure 1: Shera Plank

- The Shera Rabat (Figure 2) can be used horizontally, vertically, diagonally and in a curvature (see 3.2.1 Design).

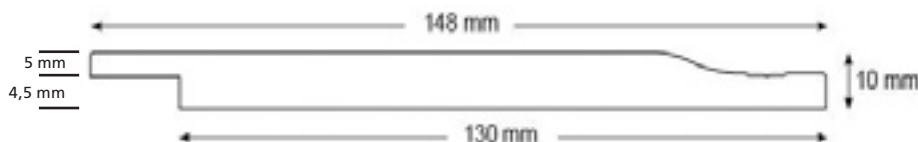


Figure 2: Shera Rabat

2.2.2 Dimensions (l x b x d)

- Shera Plank: 4000 x 200 x 8 mm (effective width depends on the application)
- Shera Rabat: 4000 x 150 x 10 mm (effective width: 4000 x 130 x 10mm)

Dimensional tolerance:

The tolerances in length and width are in accordance with NEN-EN 12467 at level I, see table 1.

Table 1: Tolerance for length and width

Nominal dimension ^{a1)}	Level I	Level II
$a \leq 600$ mm	± 3 mm	± 4 mm
$600 \text{ mm} < a \leq 1000$ mm	± 3 mm	± 5 mm
$1000 \text{ mm} < a \leq 1600$ mm	$\pm 0,3\%$ a	$\pm 0,5\%$ a
$1600 \text{ mm} < a$	± 5 mm	± 8 mm

¹⁾ a is the nominal length or width

The tolerance for thickness is in accordance with NEN-EN 12467 in table 2. Additionally, the maximum difference per 8 measurements, per board, will not be more than 15% of the maximum tolerance measured

Table 2: Tolerance for thickness of structured boards

Nominal thickness (e)	Tolerance
$E < 6$ mm	- 0,6 mm + 0,9 mm
$6 \text{ mm} < e \leq 20$ mm	- 10% d + 15% d
$20 \text{ mm} < e$	- 2mm + 3mm

The tolerances for straightness and squareness are in accordance with NEN-EN12467 at level I, see table 3.

Table 3: Tolerance for straightness and squareness

Aspect	Level I	Level II
Straightness ¹⁾	$\pm 0,1\%$	$\pm 0,3\%$
Squareness	2 mm/m	4 mm/m

¹⁾ tolerance expressed in a percentage of the length of the relevant dimension (length or width).

2.2.3 Shera Wall Cladding is available in standard colours available from stock. Many other colours are also available upon request. Your Shera supplier will be able to tell you more.

2.2.4 Material properties

Table 4: Properties and Performance

Property	Performance
Sterkteklasse: Grade: Bending strength (wet conditions): - length - width E-module: - length - width	2 15,0 N/mm ² 6,3 N/mm ² > 6000 N/mm ² > 3200 N/mm ²
Density: - Shera plank - Shera rabat	±1400 kg/m ³ ±1385 kg/m ³
Fire class: Class of the contribution to development of fire Smoke class	class A2 s1 d0 (NEN-EN 13501-1)
Composition (Building Materials Decree)	Shera Wall Cladding does not contain asbestos
Acidity	pH 7 (pH neutral)

3. Application

3.1 General

3.1.1 Transport:

The panels should be transported on stable, flat pallets of at least the same size as the panels. To prevent damage by abrasive particles, the panels should not be allowed to slide on top or alongside each other. When loading or unloading, or during assembly, the panels must always be lifted one by one or per package (3 panels) and on their side (Figure 3).



Figure 3: Handling the parts

3.1.2 Storage:

During storage, you must make sure that the panels do not deform. They must be protected against moisture, extreme changes in temperature, contamination and damage.

The panel should preferably be stored in a closed space with a relative humidity between 45 and 70% and a normal ambient temperature.

On the building site, the panels must also be well protected against rising damp, wrapped up well in tarpaulin or plastic.

The panels must be stored horizontally, supported along the entire surface.

The top panels must be protected with a cover plate.

3.1.3 Health and Safety aspects:

When sawing Shera, dust may be released that may irritate the eyes and/or the airways. It is advisable therefore to wear safety goggles and a dust mask.

If the material is processed in a closed space, make sure that adequate dust extraction or good ventilation is available. Protracted exposure to the dust may affect human health. Shera does not contain asbestos.

3.2 Design instructions

3.2.1 Design:

Static calculations in connection with the dimensions of the panel must be performed in accordance with the current standards NEN 6700 and NEN 6702.

The following criteria apply:

- The cladding must be able to absorb the full wind load and subsequently transfer it via the bearing structure and anchorages to the wall behind.
- The computable value for the static wind load (P) is obtained from:
 $P = 1.2 C_t \times P_w$ (kN/m²) in which:
C_t = the combination of the wind load factors in accordance with NEN 6702;
P_w = back pressure due to wind load.
- When determining the deflection, the C_t factor is not used and the wind load (P_w) can be multiplied by 0.7.
- The deflection the wall panels must be smaller or equal to 1/200 x the span or attachment distance.
- Edge distance and the number of fastening devices needed can be found in section 3.4.3.

Static calculations in connection with the dimensions of the bearing structure must be performed in accordance with the current standards in NEN 6760. The computable values of the loads occurring with respect to the extreme limit states for the fundamental load combinations must be based on article 6.2 of NEN 6702.

Dimensions wood construction

The wood construction should be detailed in such a way that during the reference period the extreme limit state or the suitability of the limit state is not exceeded due to changes in the geometry.

Note

When determining the dimensions of the wood section(s), the presence of a required ventilated ventilation column with a depth of at least 20 mm and the thickness of the insulation layer should also be allowed for.

Fastening devices

The constructor must determine the number of anchorage and attachment points, the dimensioning and the sequence of the assembly. The attachments should be designed for wind forces (tension).

During horizontal and vertical application, the centre-to-centre distance of the rails should be 400 mm at most. If used diagonally, the centre-to-centre distance is 300 mm at most.

Bent application

The Shera Rabat and Plank can also be used horizontally bent. With a centre-to-centre distance of the rails of 400 mm the minimum radius of curvature is 500 cm ($R = 6$ metres). This requires using the Shera RVS Torx Screw. The screws must not be too tight ensuring an even curvature. The crosscut edges are slightly bevelled off inside so that the panels, except for the minimum joint, face each other straight.

3.2.2 Detailing:

The details must be implemented in accordance with the current state of technology. A number of basic details can be found in chapter 5 of this technical document.

Instruction for the bearing structure:

If wood with edge moisture content in excess of 20% (determined according to NEN 5461) is used, appropriate constructional measures must be taken to prevent wood rot.

Threat of wood decay can also be prevented by using wood preservatives with a salt base.

Note:

Machining (for example moulding) of preserved wood may lead to reduced durability.

Instructions for detailing:

- Adaptors shorter than 0.30 m should be avoided.
- In places where mechanical influences can be expected, special provisions must be made (for example the attachment of special profiles for awnings, ladders, etc.).

Instructions for the joint sealers:

The type of sealer opted for depends on the manner the panels have been attached (see also section 3.4.4).

Note:

Insulation material must preferably be provided with a water-retaining layer. If an open joint system is used, the insulating material must be provided with a water-retaining layer.

3.3 Processing instructions

When processing Shera Wall Cladding, the following instructions should be observed.

- Shera Wall Cladding can be sawn in any desired shape and moulded with a normal woodworking machine.
- For processing, saws and chisels with diamond segments and without teeth are strongly recommended, if necessary with hard-metal cutting edges; in the latter case, you must allow for a shorter tool life due to wear.
- When sawing or moulding, always wear a dust mask, make sure there is sufficient ventilation and proper dust extraction,
- When sawing, the visible side of the panel must face upwards. When using a jigsaw with upward saw line, the decor side should however face downwards.
- Preferably use machines with idle (slow) running tools and moving tables.
- Use spacing paper or supporting plates and make sure there are no sawing splinters left behind when using again.
- Inside corners of openings for example must have rounded corners with a radius of at least 5 mm.

3.4 Assembly system

3.4.1 General:

The assembly system relates to panels that have been attached to a wooden bearing structure, which is anchored to a wall behind. There are various attachment methods (visible and invisible) available to attach the panels to the bearing structure. This technical documentation only relates to the fastening devices and methods described in this chapter.

3.4.2 Bearing structure

Shape and composition:

The bearing structure consists of continuous vertical posts, whereby the open ventilation space between the panels and the rear wall should be at least 20 mm. For flat cladding it is essential that the bearing structure is properly aligned. The material commonly used for the rails is wood. The wood should be healthy and preserved.

For horizontal and vertical applications, the centre-to-centre distance of the rails should be 400 mm at most. For diagonal use, the centre-to-centre distance should be 300 mm at most. The rails should be at least 38 mm thick and have a width of 44 mm. Where 2 Shera parts are extended the rail should be wider (at least 77 mm).

Assembly should be from the outside to the inside.

The rails are mounted:

- on a joint;
- at a panel end;
- in an intermediate rail.

Wood and laminated wood:

Constructions must be made of rectangular wood, not being plywood, which at least meets the following conditions:

1. wood can be classified according to grades in accordance with 9.1.2 of NEN 6760; the moisture content of the wood must be 16 to a maximum of 20 %;
2. the wood must not have any active decay and not be affected by larvae, insects and/or fungus the wooden parts can be classified according to durability classes I to V according to annex G of NEN 6760;
3. if sawn softwood is used according to BRL 2301, quality class C should be used.

Fasteners for bearing structure:

For the manufacture of the bearing structure wood joints should be used, which at least comply with the requirements of the permissible deviations and basic requirements of quality class I according to 5.2 and 5.3 of NEN 6762.

3.4.3 Fastening methods and means

Shera Plank can be fastened as follows:

1. Weatherboarded with fastening in the overlap. Each part is fastened (blindly) to one Shera SS (A2) Torx screw to the rail behind (see detail 1, chapter 5).
2. Weatherboarded with fastening in the overlap and at approx. 1/3 from the bottom of the part. Each part is fastened with two Shera SS (A2) Torx screws to the rail behind (see detail 2, chapter 5).
3. Weatherboarded with fastening in the overlap. Each part is fastened with one Shera SS (A2) Torx screw to the rail behind. In addition, a cement rail is applied at the top of the parts, adjoining the overlap (see detail 3, chapter 5).

Shera Rabat can be fastened as follows:

1. Fasten in the overlap of the Rabat part. Each part is fastened with one Shera SS (A2) Torx screw to the rail behind (see detail 4, chapter 5).
2. Fasten in the overlap of the Rabat part and at approx 1/3 from the bottom of the part. Each part is fastened with two Shera SS (A2) Torx screws to the rail behind (see detail 5, chapter 5).
3. Fasten in the overlap of the Rabat part. Each part is fastened with one Shera SS (A2) Torx screw to the rail behind. In addition, a cement rail is applied at the top of the Rabat part, adjoining the tongue and groove (see detail 6, chapter 5).

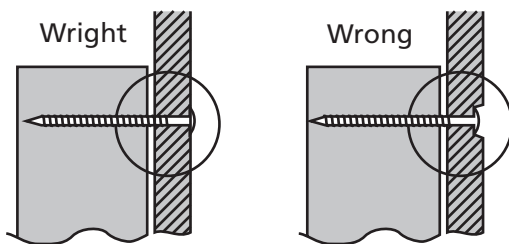
Conditions for use:

1. The distance of the fastening devices to the edges of the panel is at least 20 mm.
2. The temperature to which the wood structure is permanently exposed must not exceed 60 °C.

Fasteners:

Shera wall cladding must be fastened with Shera SS (A2) Torx screws with milling ribs and cutting points, type M3.2-1.3 x 40/24. Pre-drilling is not required. Shera Silicone sealant FC can be used during assembly and to prevent "flapping" and for joint sealing.

Location of the fastening materials:



If screws are used, they must not be screwed too deep into the material but in such a way that the top of the head is at the same height as the material. If nails are used, they must be driven straight in the plank without the plank deforming. The heads of the nails must not be driven in or through the material but rest on the plank. Pay attention to this when adjusting the tools. If work is by hand, the nail holes should be pre-drilled.

3.4.4 Instructions for joint connections

General

The dimensions of the panels may change under the influence of temperature and humidity.

For the proper application of the product, the following points must be considered:

- The maximum expansion of the panel between -15 and +90 °C in the longitudinal direction is 2.0 mm/m1 and widthwise 2.5 mm/m1. If more panels and/or strips are used next to/on top of each other, joints must be used that allow the maximum expansion.
- A minimum joint width of 8 mm is recommended in order to allow for the board, application and construction tolerances.
- Make sure that any remaining moisture does not cause damage to the construction and insulating materials behind. The design of the panel connections must take account of this.
- Make sure that vermin such as rats or mice cannot nestle behind the wall cladding. The wall should therefore not have any unlockable openings that are wider than 0.01 m1.

Open joints

When using a vertical and/or horizontal open joint system, the quality of the insulating material needs to meet certain requirements. If necessary, foil that is permeable for vapour can be used, placed directly behind the board as an extra moisture barrier. The durability of the bearing structure must also meet certain requirements. If a wooden bearing structure is used, this should preferably be designed in a preserved quality.

Closed joints

A closed joint system can be obtained by applying various sealing sections such as Shera Silicone sealant FC colour sealant and vertical and horizontal synthetic profiles. If for example metal or hard synthetic profiles are used, they should not impede the working of the panels.

3.4.5 Instructions for ventilation

For a proper application of the panels in a curtain wall construction, it is essential that there is good ventilation behind the panels. Good ventilation can be achieved if the following requirements are met:

- Always use a vertical freely ventilated air cavity with a minimum depth of 20 mm behind the panels.
- Use ventilation openings at the top and the bottom of the wall cladding system, which are in direct contact with the outside air. The same applies to openings such as windows and doors.
- The size of the openings should be per linear metre wall:
 - 20 cm² per m1 for wall cladding heights up to 1 m;
 - 50 cm² per m1 for wall cladding heights over 1 m.
- Ventilation openings may be reduced locally up to 5 mm.
Makes sure that rats and mice cannot get behind the wall cladding and nestle there. This vermin may spread diseases and hamper the free inflow of air. There should be no openings in the wall surface area that are wider than 0.01 m1.
- To keep the air flowing and to ensure that the ventilation is not impeded by splashing dirt, 300 mm should be kept free from the ground level.

3.4.6 Instructions for thermal insulation

Use insulation materials such as boards or blankets, either with a water-retaining layer or not, according to the current state of technology or according to the instructions of a valid quality certificate issued by an institute recognised by the Dutch Accreditation Council.

The type of insulation and the thickness must be consistent with the requirements from the Buildings Decree.

Note:

Please refer to the KOMO product assessment certificates which describe the specifications of the insulation materials.

3.4.7 Accessories

Sealing profiles of aluminium, PVC or EPDM rubber to seal the joints between the panels (the most common sealing profiles are in the basic details). The sealing sections must be tight and applied in the right place. They must not be stapled but applied, for example, by gluing or mechanical attachment.

Water bars, drip rails and so on must be provided with drop ends.

3.5 If the parts have a paint system, you should allow for:

3.5.1 Repairs

Minor damage must be repaired immediately after it has been detected to ensure that the coating is not permanently damaged. These repairs can be treated with Shera retouching paint. If in doubt about major repairs, contact your (paint) supplier or your painter.

3.5.2 Retouching

To ensure the durability of the coating, it is urgently recommended that the cutting sides, the visible nails and, if they are damaged, are retouched using the appropriate retouching paint. The surface to be touched up must be dry, free of dust and grease. Retouching paint is intended for minor repairs.

3.5.3 Maintenance

The boards can be cleaned with normal, soft household cleaning products.

The extent of contamination depends, for example, on the natural environment, which also determines how often maintenance is needed.

Abrasives and cleaning agents with alkaline components must not be used.

Nitrocellulose thinners should not be used because they may cause streaking on the boards.

4. Performance

4.1 Instructions regarding safety

4.1.1 General strength of the building Construction, Buildings Decree section 2.1

Shera wall cladding can be used in the places mentioned in table 5. Strength and stability are sufficient to resist fundamental load combinations that may occur according to NEN 6702 without collapsing for a reference period of 15 years.

Table 5: Areas of application

Fastening method (according to § 3.4.3)	Area of application
Plank, all methods	Up to a building height of 20 m, irrespective of wind speed area, in a built-up environment
Rabat, method 1: one screw	Up to a building height of 14 m, wind speed area I, in a built-up environment
Rabat, method 2: two screws	Up to a building height of 130 m, irrespective of wind speed area and environment
Rabat, method 3: one screw and sealant	Up to a building height of 20 m, wind speed area I, in a built-up area

Application conditions:

1. Static calculations of the wall cladding system must be performed according to NEN 6702 considering the following points:
 - The structural strength calculation of the wall panels are performed by a specialist bureau; The loads that apply to the loading case "Fire" need not be considered;
 - The representative values and the material factor Y_m for the bearing structure are taken from the applicable TGB norm;
 - For panel and fasteners, a material factor Y_m of 2.0 applies.
2. Connections, fasteners and anchorages must be designed in accordance with the method described in chapter 3.
3. Extra provisions must be made when suspending heavy objects and when used in places that are mechanically more liable to stress.

4.1.2 Restrictions to the development of fire, Buildings Decree section 2.12

The contribution to the development of fire is Euro class A2, in accordance with NEN-EN 13501-1.

4.1.3 Restrictions to the fire spread, Buildings Decree section 2.13

Shera wall cladding does not have fire-resisting properties with regard to the spread of fire through surrounding walls and doors and with respect to the spread of fire.

4.1.4 Restrictions to the occurrence of a situation constituting a fire hazard, Buildings Decree section 2.11

The non-combustibility of Shera Wall Cladding has not been determined. Provisions must be made at or near fireplaces and/or in the vicinity of facilities for the discharge of smoke, in such a way that the conditions of the Buildings Decree are met.

4.1.5 Restrictions regarding the development of smoke, Buildings Decree section 2.15

The smoke density of single panels is Euro class s1, in accordance with NEN-EN13501-1.

Application conditions:

1. Where conditions such as 'non-combustibility' need to be met, Shera Wall Cladding must not be used as such.
2. An exterior wall of a building must consist of combinations of building materials which at least comply with class 4, or Euro Class D, regarding the spread of fire on the condition that the side with its back to the escape route should at least be up to class 2 or Euro Class B.
3. Walls of residential buildings with more than two floors up to 2.5 m above the adjoining grounds must consist on the outside of combinations of building materials that at least comply with class 1 or Euro Class B of the contribution to the spread of fire.
4. Walls of buildings not intended for residential purposes must from a height of 13 m above the adjoining grounds consist on the outside of combinations of building materials that at least comply with class 2 or Euro Class B of the contribution to the spread of fire.

5. (Combinations) of materials of walls lower than 1.5 m from the ground surface must at least be up to class 4 or to Euro Class D of the contribution to the spread of fire.
6. (Wooden) bearing structures and, if used, insulation materials must be assessed for fire safety on a case by case basis.

4.2 Instructions regarding health

4.2.1 Protection against noise from outside, Buildings Decree section 3.1

The single wall panels do have any noise-insulating characteristics.

Application conditions:

1. It should be demonstrated on a case by case basis by calculation or testing according to NEN 5077 or assessment against NPR 5070 that the noise-insulation is at least 20 dB(A).
2. When determining the noise-insulation, Shera Wall Cladding should not be considered.

4.2.2 Protection against moisture from outside, Buildings Decree section 3.6

Shera Wall Cladding is watertight. The joint and abutting details (section 3.4.4) are basically splash and rain resistant. Powder snow and rain may occasionally penetrate through the ventilation facilities into the cavities behind the wall panels.

The lower construction must be water-repellent.

Application condition:

The material used must comply with the system specification in these technical documents (chapter 3).

4.2.3 Protection against moisture from inside, Buildings Decree section 3.7

No unacceptable moisture accumulation due to condensation occurs on the inside of wall constructions that have been constructed in accordance with the specified basic details.

Application conditions:

1. There must be a ventilated air cavity behind the wall panels with a depth of at least 20 mm (see also section 3.4.5).
2. The temperature factor of the inner surface of the external division according to NEN 2778 or NPR 2878 applying to dwellings and residential buildings is at least 0.65 and to buildings not intended for residential purposes at least 0.50.
3. The computable value of the coefficient of thermal conductivity (λ) of the material used should be determined according to NEN 1068.

4.2.4 Restriction to the use of harmful materials, Buildings Decree section 3.15

Shera Wall Cladding does not contain asbestos.

4.2.5 Protection against rats and mice, Buildings Decree section 3.17

The protection against rats and mice in the designs according to the basic details is adequate.

Application condition:

Joint, connection and ventilation openings that are wider than 0.01 m must be provided with lockable ventilation (grilles).

4.3 Instructions with regard to energy efficiency**4.3.1 Thermal insulation, Buildings Decree section 5.1**

Shera Wall Cladding does not contribute to the thermal resistance (R_c) of the total external division. If the total external division has to meet certain thermal resistance (R_c) requirements, these should be realised by the construction behind.

Application condition:

The thermal resistance (R_c) of the total external division should be determined according to NEN 1068.

4.3.2 Restriction to air permeability, Buildings Decree section 5.2

Shera Wall Cladding is basically airtight. The basic details in these technical documents guarantee air tightness according to NEN 2686.

4.4 Emission into soil and water according to the Building Materials Decree

The average emission in soil and surface water of the Shera Wall Cladding complies with annex 2 of the Building Materials Decree and the Interim Exemption Scheme Building Materials 2004 as far as category 1B applications are concerned. This means that the Building Materials Decree does not impose any restrictions on the use of fibre cement boards for wall cladding.

4.5 Other performances**4.5.1 Rigidity/deflection, BRL 4101 part 1 article 4.1**

The deflection to be expected with fundamental load combinations according to NEN 6702 will be smaller than 1/200 times the distance between two attachment points. In designs in accordance with the basic details there will be no deformation that damages the aesthetic appearance or the functionality of the panels.

Application conditions:

1. The panel edges must not be allowed to stand in water permanently or for a long period of time.
2. The panels must be able to expand freely lengthwise and widthwise; in which case a free joint width of at least 3 mm/m1, with a minimum of 8 mm, should be allowed along the panel edges,
3. The cutting edges should be finished with a paint system.

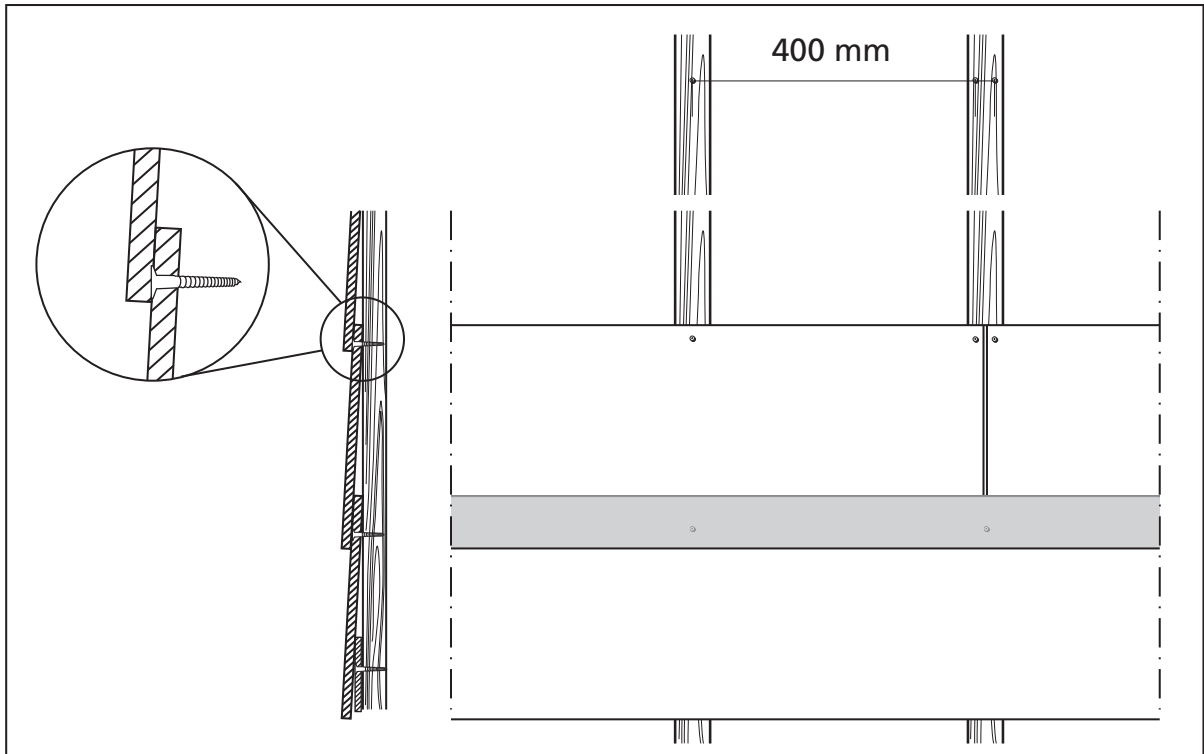
4.5.2 Climatic durability, BRL 4101 part 9

Shera Wall Cladding has been analysed for changes in temperature, heat and humidity. The panels can be used in places where they are exposed to heat, high humidity and severe frost.

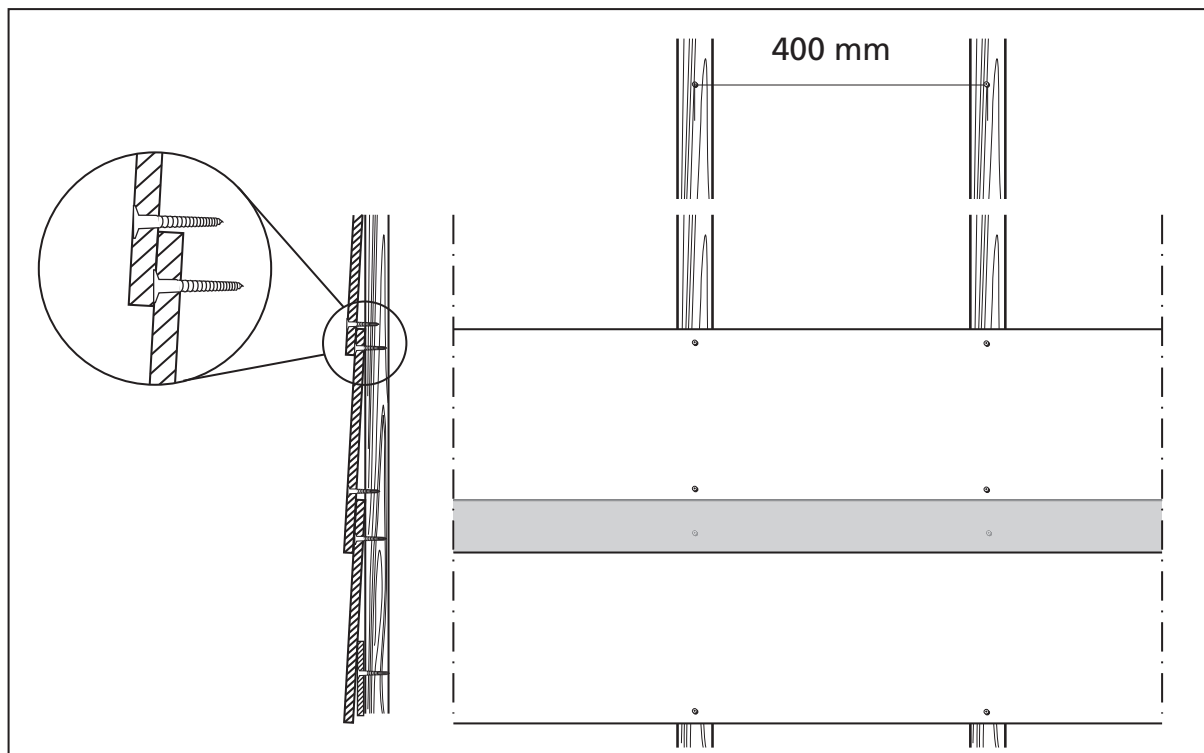
5. Drawings

5.1 Elevation drawings

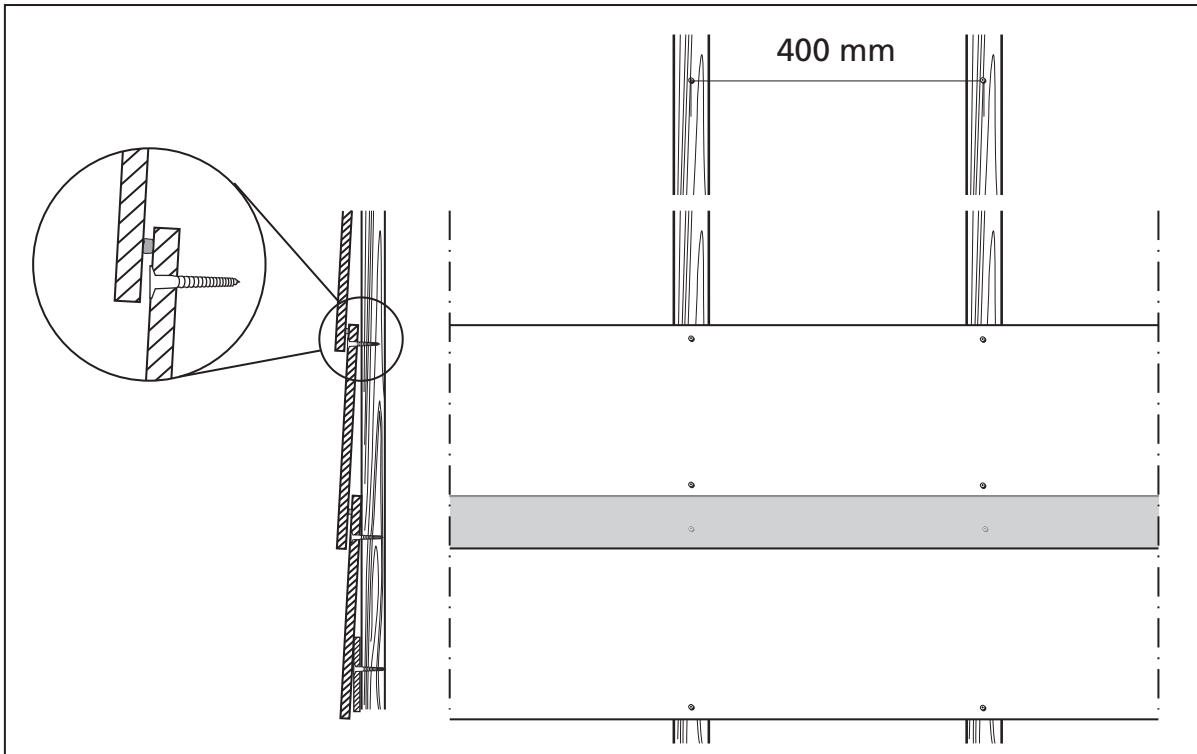
1. Shera Plank, blind fastening



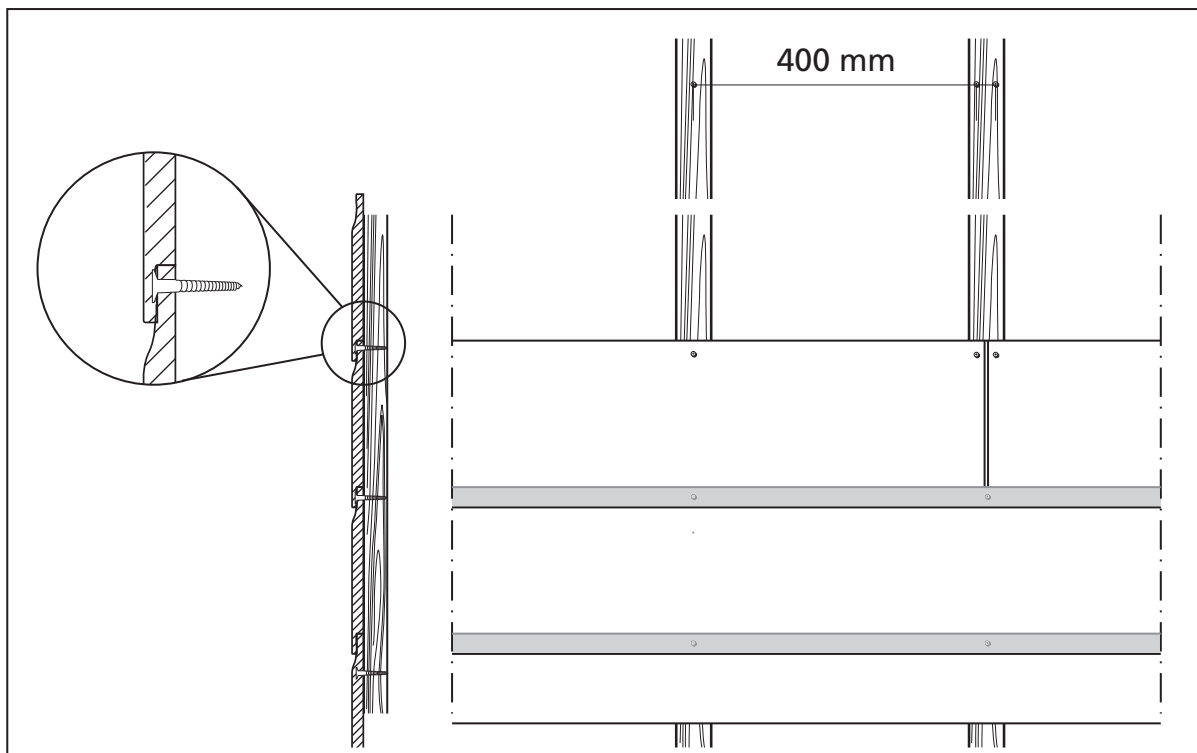
2. Shera plank, blind and visible fastening



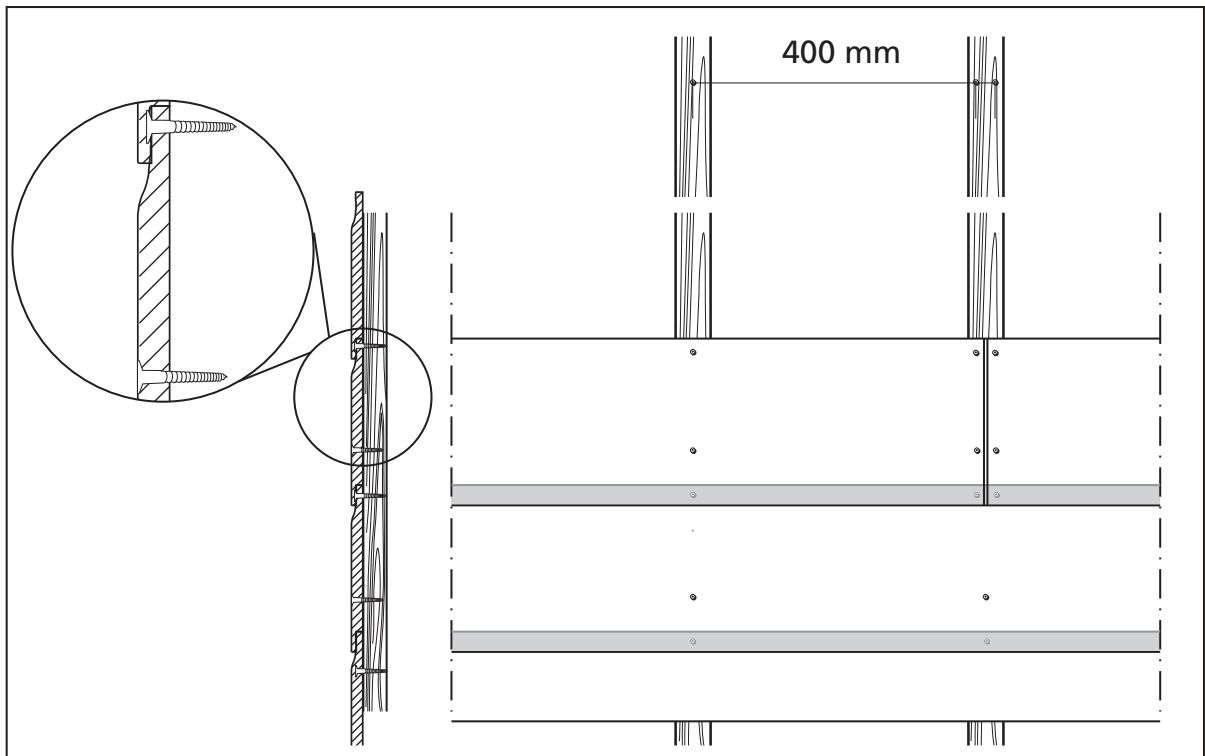
3. *hera plank, blind fastening with cement rail*



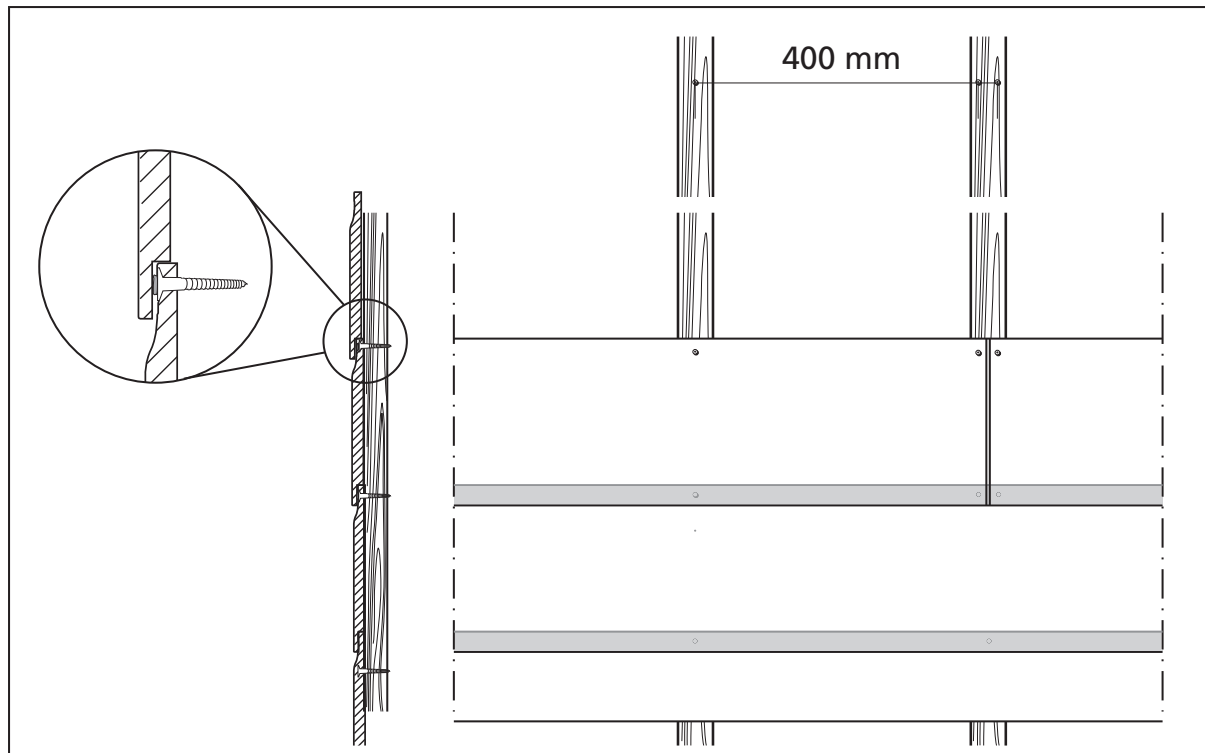
4. *Shera Rabat, blind fastening*



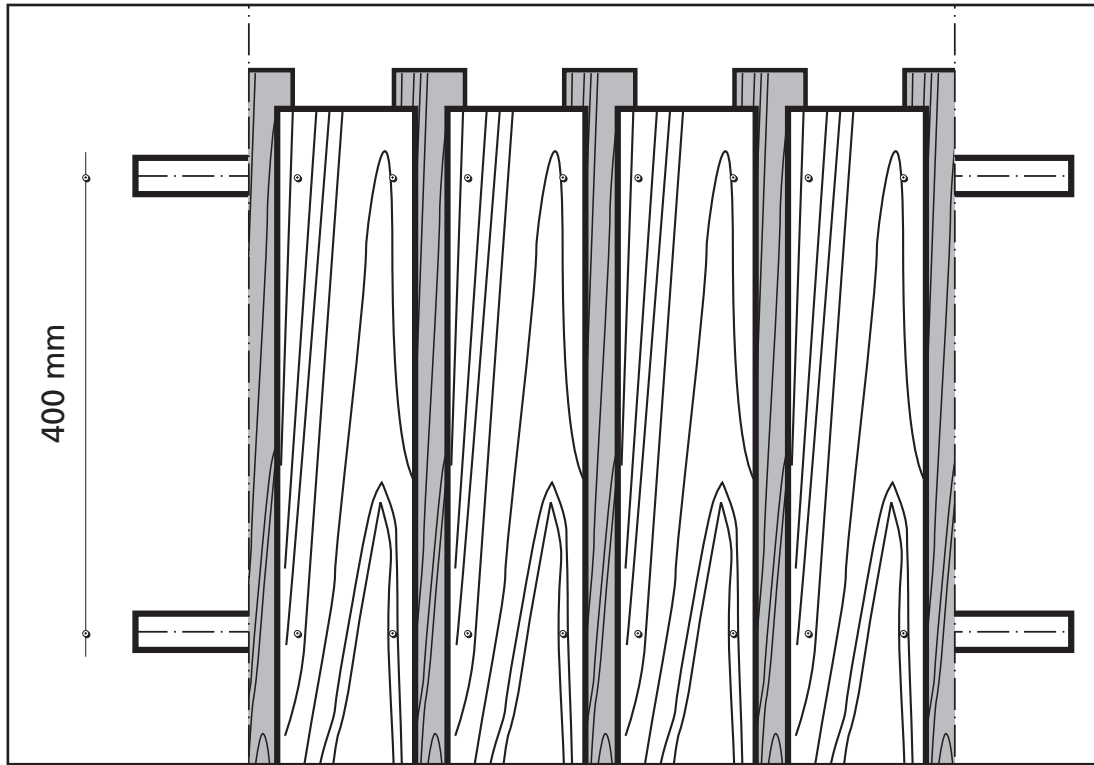
5. *Shera Rabat, blind and visible fastening*



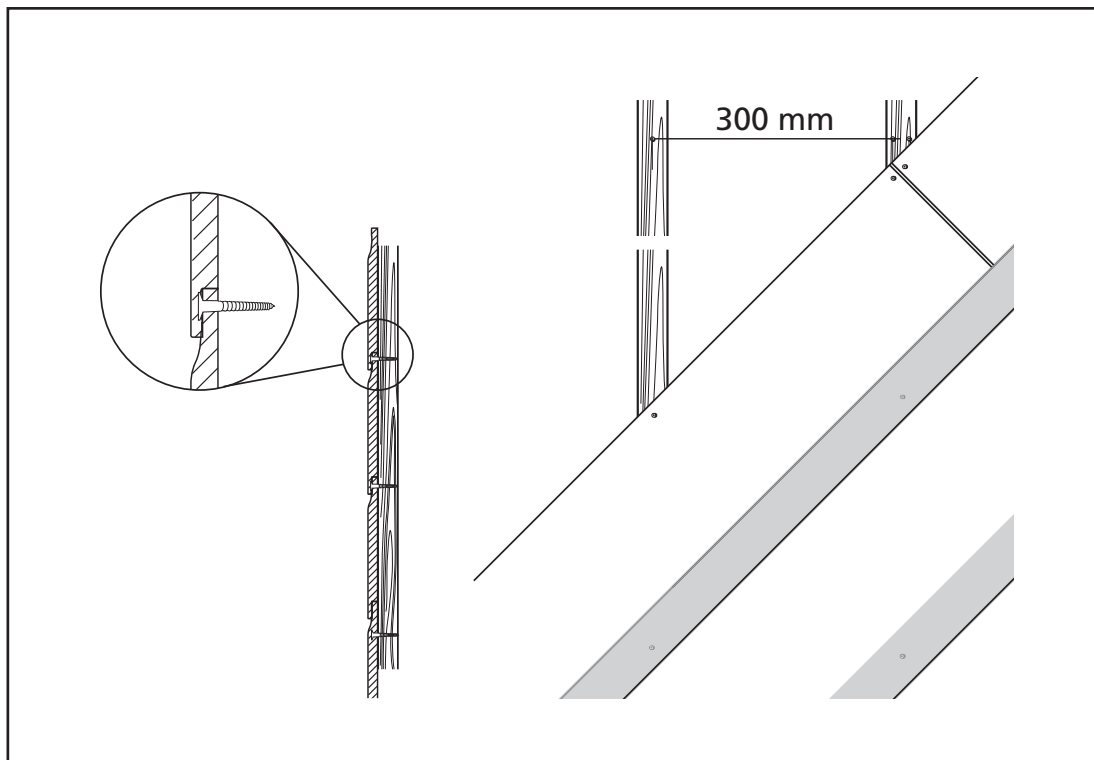
6. *Shera Rabat, blind fastened with cement rail*



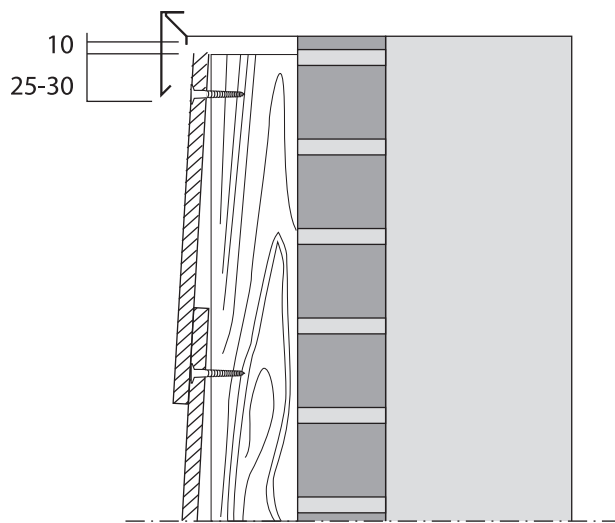
7. Front elevation, used vertically



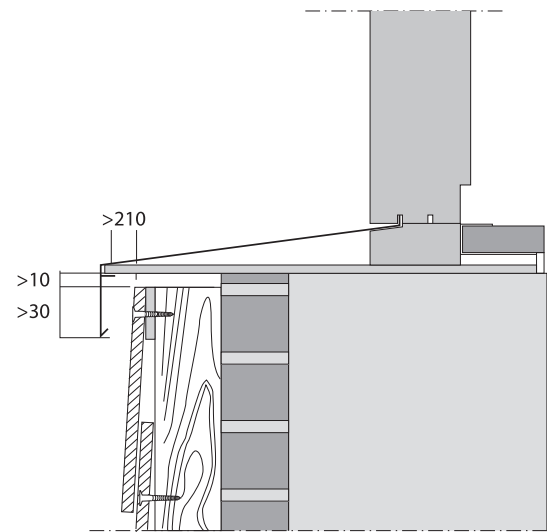
8. Shera rebate, used diagonally



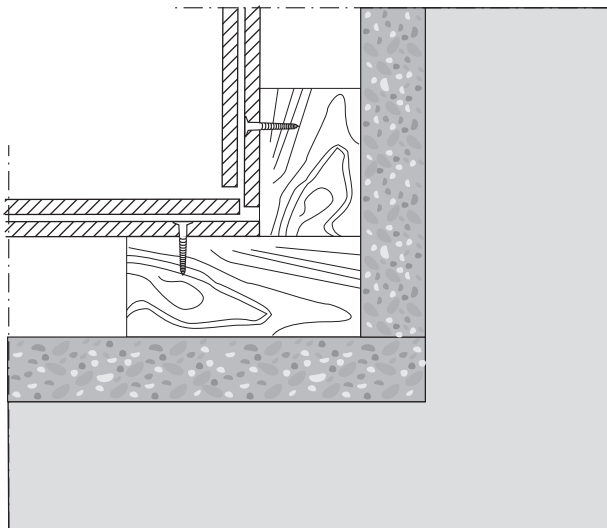
5.2 Detail drawings (possible solutions)



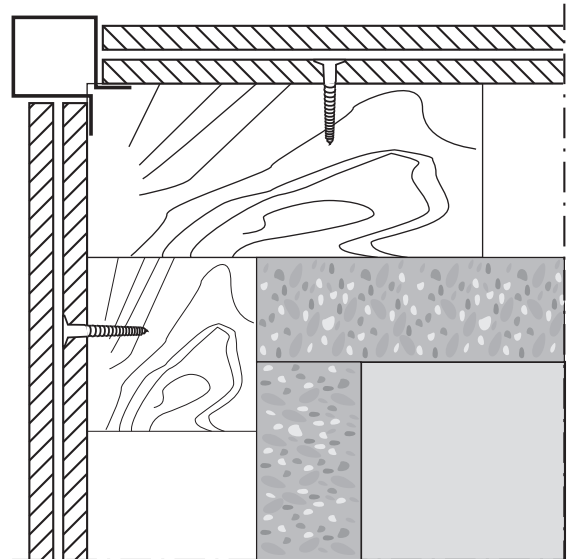
8. Connection to edging strip



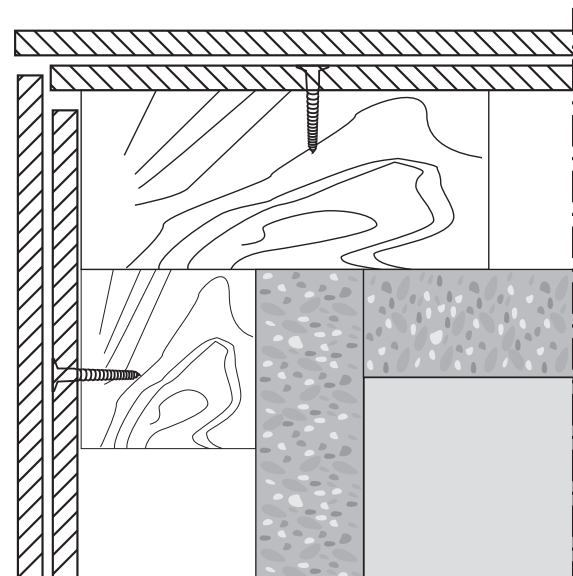
9. Connection to window casing



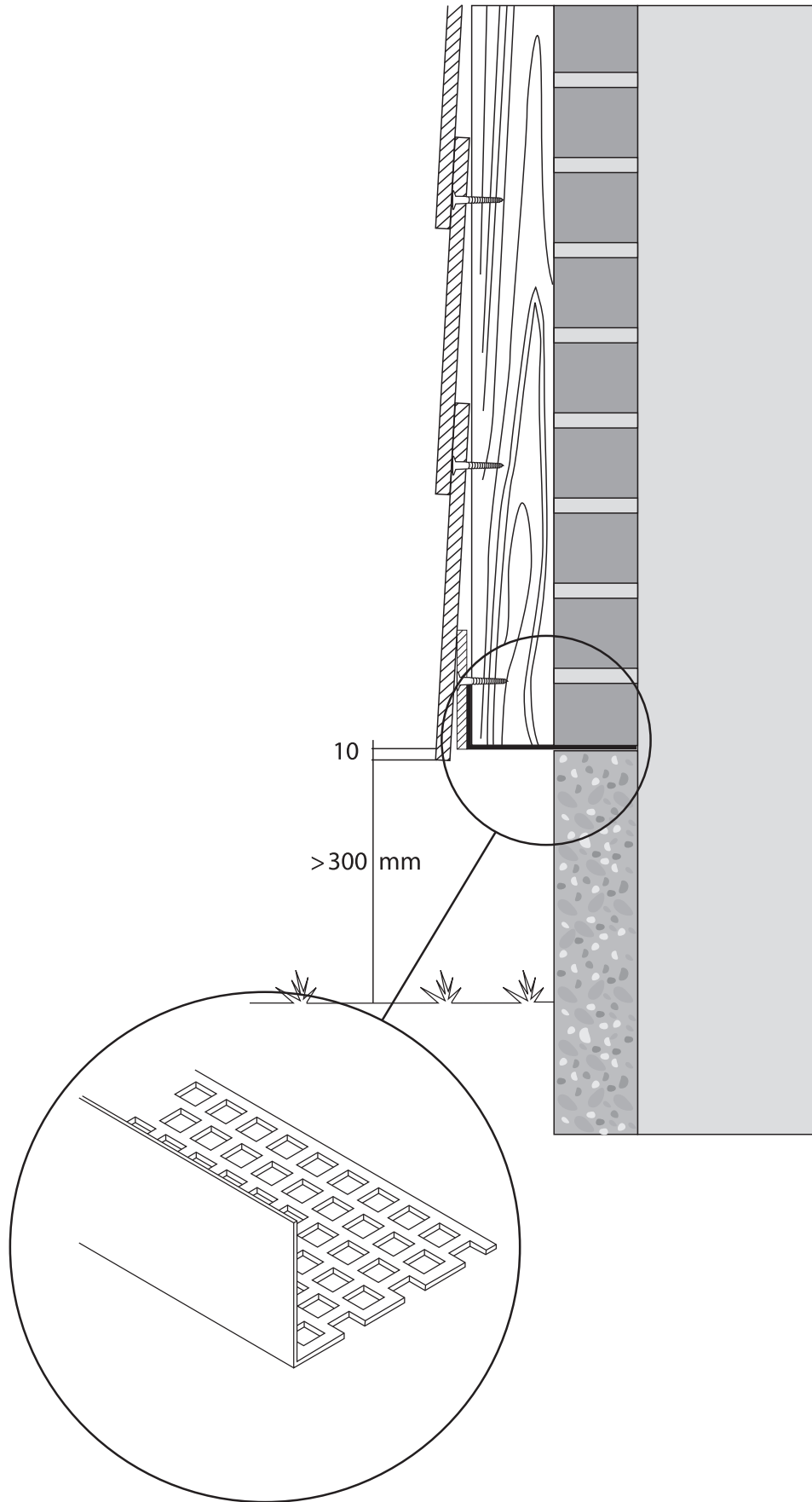
10. Inside corner solution without profile



11. Outside corner solution with profile



12. Outside corner solution without profile



13. Weatherboard solution bottom detail with protection against vermin

6. Guarantee conditions*:

Shera Wall Cladding with 10 years manufacturer's guarantee

Shera panels that develop defects within 10 years after delivery and for which it can be established that they have been stored and used in accordance with the Shera processing instructions and for which it can also be established that these defects may have adverse effects on the constructional application will at the discretion of Fetim Professional be replaced free of charge or the invoice value will be refunded.

Defects include manufacturing defects, other mechanical defects and possible delamination or rot. Compensation is also paid, during the first five years of the guarantee period, up to a maximum of €2,500 per event per end user:

- Labour costs for the replacement
- Costs of delivery of materials in connection with the removal, repair, change and/or replacement of delaminated and rot affected Shera panels.

During the sixth to the tenth years of the guarantee period only the net value of the Shera panels will be compensated or the invoiced value refunded.

As to UV resistance, we can inform you that changes in the weather may cause more or less colour changes depending on the colour used.

This discoloration is therefore not covered by the guarantee conditions.

Procedure

Any defects found must be notified by registered post, within 10 days after detection, accompanied by a copy of the project information to Fetim Professional.

Any other form of notification or enclosing incomplete information will not be honoured. Defects or complaints with respect to Shera as a result of work by third parties cannot be honoured by Fetim Professional.

Fetim Professional reserves the right to inspect at all times the complaint in its original appearance without the intervention of third parties.

If the claim under the guarantee is honoured, and the panels are to be redelivered, the ownership of the Shera panels to be replaced will return to Fetim Professional. The time of redelivery of new Shera panels may only be determined by Fetim Professional.

No rights can be derived from this.

Exclusions

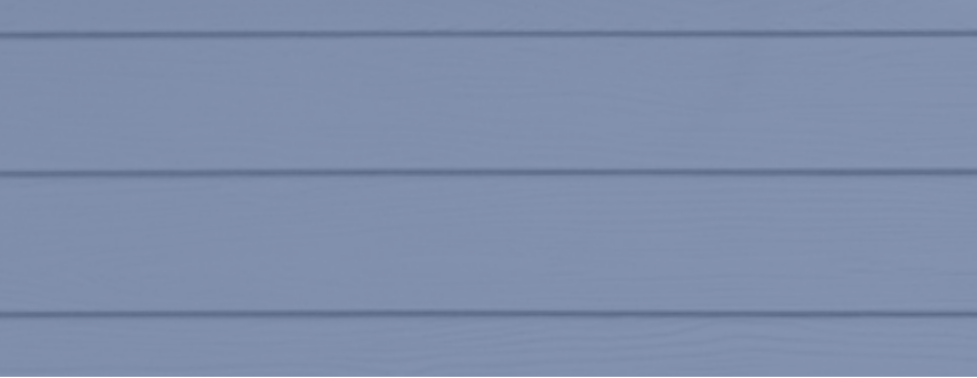
This guarantee does not relate to any damage resulting from incompetent processing and assembly, mechanical damage, poor maintenance and environment, or any other factors outside the direct sphere of influence of Fetim Professional. The responsibility is restricted to the product liability and the directions which Fetim Professional lays down in writing with respect to processing and assembly. Fetim Professional is therefore not responsible for any damage that you or third parties could suffer or have actually suffered either directly or indirectly due to any defect to the product supplied by Fetim Professional.

** Guarantee conditions as stated on the back of the Certificate of Guarantee*

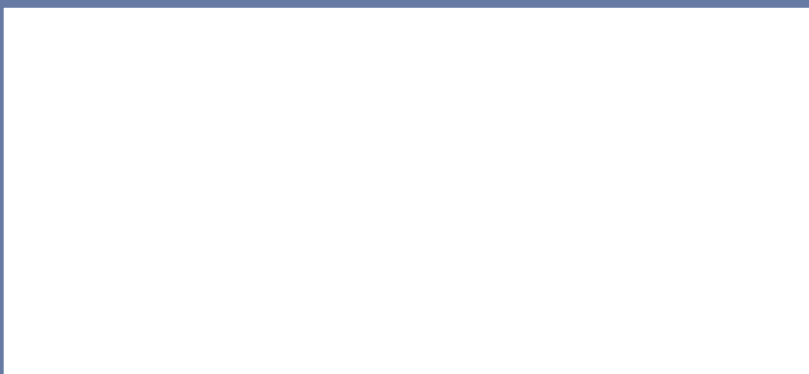
7. List of documents used *

NEN 1068:2001	Thermal insulation of buildings – Calculation methods including change sheet NEN 1068:2001/A4:2005
NEN 2686:1998	Air permeability of buildings – measuring method
NEN 2778:1991	Damp proofing in buildings – calculation methods including change sheet NEN 2778:1991/A3:2004
NEN 5077:2006	Sound insulation in buildings – Calculation methods for the quantities for sound insulation of external divisions, airborne sound insulation, impact noise insulation, noise levels caused by installations and reverberation time
NEN 5461:1999	Quality requirements for wood (KVH 2000) – Sawn wood and roundwood – General part including change sheet NEN 5461:1999/A1:2004
NEN 6062:1991	Determination of the fire safety of smoke discharge facilities including change sheet NEN 6062:1991/A1:1997
NEN 6064:1991	Determination of the incombustibility of building materials, including change sheet NEN 6064:1991/A2:2001
NEN 6065:1991	Determination of the contribution of flame spread of a (combination of) building materials, including change sheet NEN 6065:1991/A1:1997
NEN 6066:1991	Determination of the smoke production in the event of burning (combinations of) building materials, including change sheet NEN 6066:1991/A1:1997
NEN 6068:2004	Determination of the resistance to the spread of fire through surrounding walls and floors and spread of fire between rooms, including change sheet NEN 6068:2004/A2:2005
NEN 6700:2005	Technical principles for building constructions - TGB 1990 – General basic requirements
NEN 6702:2001	Technical principles for building constructions -TGB 1990- loads and deformations, including change sheet NEN 6702:2001/A1:2005
NEN 6760:2001	Technical principles for building constructions - TGB 1990 – Wooden constructions - Basic requirements – Requirements and calculation methods, including change sheet NEN 6760:2001/C1:2002
NEN 6762:1997	Steel peg shaped connecting devices for load bearing wooden constructions
NEN-EN 1027:2000	Windows and doors - Watertightness – Test method
NEN-EN 12467:2004	Flat fibre cement boards – Product specifications and test methods, including change sheet NEN-EN 12467:2004/A1:2005
NEN-EN 13501-1:2003	Fire classifications of building products and building elements - Part1: Classification based on results of fire characteristics
NPR 2878:1991	External divisions of buildings – Simplified calculation method for inside surface temperature factor
NPR 5070:2005	Sound insulation in residential buildings – Examples of walls and floors in stony load bearing constructions
BRL 2301:2004	Softwood
Buildings	
Decree 2003:	Buildings Decree Bulletins of Acts, Orders and Decrees (Stb) 2003 Stb. 2001, 410; Stb. 2002, 203, 516, 518; Stb. 2005, 1, 368, 417,528; Stb. 2006, 148 and the Ministerial Regulations Government Gazette (Stcrt). 2002, 241, Stcrt. 2003,101 and Stcrt 2005,163 and 249.
Building Materials	Decree soil and surface water protection Stb. 1995, 567, 614; Stb. 1997, 525, 686; Stb. 2000, 352, Stb. 2002, 203, 516 and 582 en Stb.2005, 610 and the Ministerial Regulations Stcrt. 1998, 20, 203; Stcrt. 1999, 126; Stcrt. 2000, 66, 210; Stcrt. 2004, 40, 68, 209, 217 and Stcrt 2005,163.

* For the correct version of the aforementioned norms, please refer to the latest change sheet in BRL 4101-1 en 4101-9.



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