SCB
EXTERIORS DESIGN

MARVIN PREMIUM*VINYL* COLORPLANK CANEXEL

90, avenue Denis Papin
45800 Saint-Jean-de-Braye
France
Tél. +33(0)2 38 60 66 25
Fax +33(0)2 38 60 66 24

E-mail : contact@scb-exteriorsdesign.com
Internet : www.scb-exteriorsdesign.com

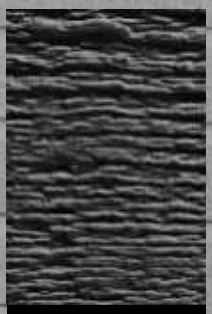
Nouvelle Approche - 10073

CANEXEL

Wood better than wood

SCB

EXTERIORS DESIGN



Technical guide

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A. DESCRIPTION

1. GENERAL PRESENTATION

1.1 General description

CANEXEL® is an external wall siding (cladding) system, covered by a **CSTB Technical Assessment**, wood fibre base, thinly impregnated with thermosetting resins and, on the visible face, an acrylic paint base decorative protective covering.

The siding elements* can be laid on flat or curved walls, curve radius to be equal to or greater than 5 m. They come in three different section shapes. The siding elements are laid horizontally, vertically or diagonally for the Ridgewood and Ultra-Plank section shapes and only horizontally for the Ced'r-tex section shape.

The siding elements are installed by fitting conformations on their longitudinal edges and fixing by nailing on timber battens.

There is a ventilated air space between the inside face of the siding elements and the outside surface of the bearing wall or the outside surface of any heat insulation.

1.2 Application field

Installation on flat vertical substrates, of masonry or of concrete, new or renovated, blind or containing window or door openings, located on upper storeys or on ground floor, corresponding to exposure Class Q4 according to Standard P 08-302.

Installation on timber framing houses and buildings, in compliance with standards in force.

Installing on vertical façades, curved with radius greater than 5 meters, is also possible when the siding elements are laid horizontally.

1.21 Wind exposure

Wind exposure corresponding to pushing forces and pulling forces, under NORMAL (perpendicular) WIND, maximal values (in Pascals) with the siding elements installed either vertically, horizontally or inclined:

Type of siding elements	On-centre of fixing elements (mm)	Permissible strength under pulling force
Ced'r-Tex	400	1350
Ridgewood	400	700
Ultra-Plank	400	700

1.22 Fire safety

The system presents no obstacle to compliance with the rules according to the regulations. The verifications to be carried out (particularly with reference to the so-called "C+D" Rule, including for buildings already in service) will need to take the following characteristics into account:

The fire reaction rating:
- Siding elements: M3 (which limits its use to dwelling units of first and second family),
- Mineral wools: normally rated M0 (To be verified on the particular Test Reports according to the origins).
- Combustible mass of the siding elements: 185 MJ/m^2,
- The combustible mass of the mineral wools is considered to be negligible with relation to requirement levels.
- The combustible mass of the secondary timber framing corresponds to the weight of the framing expressed in kg/m^2. That density is then multiplied by the factor 17 to express it in megajoules/m^2.

1.23 Impact resistance

CSTB Test Report No. CL 97-007
As to impact resistance, the system satisfactorily resists impacts from small hard bodies (D1/10J) as well as impacts from large soft bodies (M50/400J), but undergoes incipient splitting on the back of the siding elements when impacted by small soft bodies (M3) at 60 joules. This incipient splitting does not appear under energy of 20 joules.

The performances of the Ced'r-Tex siding elements with relation to impacts from small soft bodies (M3) are improved by reducing of the on-centre of the substrates to a maximum of 300 mm when those impacts reach 60 joules.

Given the possibility of replacing accident damaged siding elements relatively easily, the Class Q4 can be attributed in normal installation for all types of siding elements.

In application of the attribution rules defined in the document "reVETIR rating of systems for heat insulation of façades from the outside", the system is rated:

- Ced'r-Tex siding elements: $r_2\ e_2\ V_2\ E_3\ T_3$* $I_2\ R_4$,
  *T4 with on-centre of cleats ≤ 300 mm
- Ridgewood and Ultra_Plank siding elements:
  $r_2\ e_2\ V_1\ E_3$* $T_3\ I_2\ R_4$
  *E2 in vertical or inclined installation on single grid framing.

1.3 Technical characteristics

- Density 920 kg/m^3 (in ambient condition, siding elements at 8% water content),
- Water absorption after 24h of immersion of the boards: 8.4%.
- Cohesion: average value > 760 Kpa.
- Modulus of rupture: average value > 32 Mpa.

* Siding or cladding elements may be siding boards, clapboards, boards, siding panels, etc...

1.4 Technical tests

1.41 Isotropy

CSTB Technical Inspection no. BDC-CQ-0042/84
The CANEXEL® siding is isotropic. Its physical and mechanical characteristics are the same in the longitudinal and in the transversal direction.

1.42 Humidity variation

CSTB Technical Inspection no. BDC-CQ-0042/84

Water content at reception	6.0%
Water absorption after 24h of immersion	8.4%
Swelling after 24h of immersion	2.1%
Dimensional variation in atmosphere	0.6%

(After 3 days of exposure, on the one hand 85% RH 25°C, on the other hand 30% RH 25°C)

These results show that the CANEXEL® siding resists humidity well. It can be expected that the behaviour will be good once it is installed, contingent upon a rapid drying after a period of humidification.

The relative smallness of the dimensional variations certainly favourably affects the behaviour of the paint.

1.43 Ageing

VERITAS Test Report No. CN53B950112E

- After 75 conventional climatic cycles of ageing as defined in Standard P84-402, the CANEXEL® siding shows no visible alteration, neither chalking, nor scaling, nor blistering.
- After 75 conventional climatic cycles, the colour difference measured with a Minolta CR 2000 colorimeter is, according to the colour, barely perceptible or not perceptible.
- The adherence, measured according to Standard NF EN 26-624, is the same before and after the 75 conventional climatic cycles.

These tests indicate the proper behaviour of the material and of its covering, in compliance with the definition of "durability" mentioned in Standard NFT 36001 "Technical dictionary of paintwork and application works".

1.44 Behaviour under thermal stress

CSTB Test Report No. BDC.83.CQ.141.1/84

After exposure alternation, according to the Specifications of the UEAtc*** document "Common directives for approval of light façades", the deformations measured following the test programme are insignificant and no damage was observed on the test specimens.

1.45 Reaction to inclement weather phenomena

COT Laboratory Test No. LB94-315 RAP

Resistance to splitting	good
Paint scaling	none
Reaction to spraying	none
Decolouration	none
Swelling at incision	very little

1.46 Insulation factor R

The CANEXEL® siding has an R factor of 0.70.

2. MATERIALS

2.1 Materials used for making the siding elements

- Long wood fibres (deciduous),
- Phenol-formaldehyde resin,
- Wax with an alumina-based catalyst,
- Rigid polystyrene for the Ced'r-Tex tongue.

2.2 Used for finishing the siding elements

- Acrylic paint in aqueous phase from AKZO NOBEL.

2.3 Used for installation

- Timber battens or support timbers with mechanical strength corresponding at least to Class C18 according to Standard NF B 52001-4, impregnation treated for risk Class 2, according to jobsite with water content at least 18% in weight.
- Steel sheet, minimal thickness 20/10 mm, galvanised Z 275 according to Standard NF A 36-321 for the fixing lugs for installing battens or support timbers on masonry.
- Galvanised steel nails for fixing the boards.
- Mineral wool panels.
- Aluminium sheet, baked enamelled or not, thickness 4/10 to 6/10 mm for the various accessories (moulding trim pieces, drip mouldings, joint strips,...) coming from CANEXEL®.
- Extruded PVC for the rodent-proof grilles.
- Pre-baked enamelled aluminium sheet in compliance with Standard NF P 34-601 or pre-baked enamelled steel sheet in compliance with Standard NF P 34-301 for protecting individuated points.
- Latex-acrylic base CANEXEL® joint mastic.
- Retouch paint and stain, from CANEXEL®.

3. ELEMENTS

CANEXEL® system is a system of external wall siding comprising:

- The siding elements,
- The specific CANEXEL® accessories,
- The various fasteners,
- A technical documentation defining the fixing

*** UEAtc – Union Européenne pour l'Agrément technique dans la construction (European Union of Technical Agrément in Building)

framing, the complementary heat insulation and the sections made to order that may be required for application on individuated points.

3.1 Siding elements

The siding elements are cut out from panels.

The panels have a phenol-formaldehyde heat setting resin impregnated wood fibre base, pressed (3100 Kpa) at high temperature (220°C).

The CANEXEL® siding elements are composed as follows:

- 95% wood fibres,
- 2% phenol-formaldehyde resin,
- 3% wax with an alumina catalyst.

The technical characteristics are as follows:

The CANEXEL® siding element line is composed of three section shapes (Figure 1):

- Ced'r-Tex: single flat with tongue,
- Ridgewood: boards with incurved groove,
- Ultra-Plank: boards with rectangular groove.

■ Dimensions:

- Widths:
  Ced'r-Tex: 225 mm, Effective width: 200 mm,
  Ridgewood: 300 mm, Effective width: 280 mm,
  Ultra-Plank: 300 mm, Effective width: 280 mm.
- Thickness:
  Ced'r-Tex: 9.5 mm,
  Ridgewood: 11 mm,
  Ultra-Plank: 11 mm.
- Length: 3660 mm.

■ Tolerances on dimensions:

- Width: + or – 0.8 mm
- Length: + or – 3.2 mm
- Thickness: + or – 0.7 mm
- Squareness: 1.3 mm/m

■ Density: 920 kg/m^3

■ Weight per unit of surface area (square meter):

- 10.6 kg for the Ced'r-Tex siding elements,
- 10.3 kg for the Ridgewood siding elements,
- 10.3 kg for the Ultra-Plank siding elements.

■ Appearance: wood relief.

■ Colours: Ced'r-Tex: White, Almond, Sand, Mist grey, Scottish blue, Maïze, Sage green, Acadia, Yellowstone, Sierra.

Ridgewood colours: White, Almond, Sand, Mist grey, Scottish blue, Maïze, Sage green, Country red, Cedar, Acadia, Yellowstone, Sierra.

Ultra-Plank: White, Almond, Sand, Mist grey, Scottish blue, Acadia, Yellowstone, Sierra.

3.2 Fixing the siding elements on the support timbers or the battens

The siding elements are fixed with the aid of ring shank nails Ø 2.2 of galvanised steel, flat head, Ø 5 mm minimum. The nails are to penetrate 30 mm into the support timbers or battens, which implies using 40 mm nails. A slight fluting of the siding elements makes it possible to determine the position of the nail.

The characteristic resistance Pk of the ring shank nails to pullout from the substrate, determined according to Standard P 30-310, shall be at least equal to 380 N, for a penetration depth of 30 mm.

In horizontal installation, the fixing (concealed by the upper siding element) is done on the top longitudinal rim (distance from the edge 12 to 15 mm according to the section shape), with an on-centre maximum 400 mm. Only Ridgewood and Ced'r-Tex section shapes can be installed horizontally.

In vertical installation, the elements are fixed on the longitudinal rim (minimal distance from the edge 12 mm, on-centre 400 mm maximum). Only the Ridgewood and Ultra-Plank section shapes can be installed vertically.

In diagonal installation, the elements are fixed (fixing concealed by the upper siding element) on the top longitudinal rim (distance from the edge 12 to 15 mm according to section shape), with an on-centre maximum 300 mm.

Only Ridgewood section shape can be installed diagonally.

3.3 Support framing

The timber framing, consisting of timber battens or support timbers in single or double grid, shall comply with the specifications in the document "General Rules for design and installation of timber framing and of heat insulation of external wall siding, covered by a Technical Assessment" CSTB Book 3316 – January-February 2001, supplemented by the specifications below:

- Concrete or masonry framing:
  . Minimal width 60 mm,
  . Minimal thickness 30 mm.
- Timber framing:
  . Minimal width 60 mm,
  . Minimal thickness 22 mm.

3.4 Heat insulation

The heat insulation installed most often is mineral fibre panels or rolls in compliance with the Specifications of CSTB Book 3316 and of its Modification 3422.

3.5 Associated accessories (Figures 2 and 3)

3.51 Starter strip

For all the CANEXEL® siding element section shapes.

Aluminium sheet trim piece 6/10 mm. Installed before the siding is installed, it makes it possible to fix the siding elements at the bottom.

3.52 Individual outside corner trim piece, 22

For the Ced'r-Tex siding element section shapes.

Baked enamelled aluminium sheet trim piece 6/10 mm. Installed during the installation of the siding elements, it makes it possible to shield the salient angles.
Note: the siding elements shall not abut next to the angle.

3.53 Continuous outside corner trim piece of 25 and of 55

For the Ridgewood and Ultra-Plank siding elements.

Baked enamelled aluminium sheet trim piece, 6/10 mm. Installed before the siding is installed, it makes it possible to shield the salient angles.

3.54 Continuous inside corner trim piece

For all the CANEXEL® siding element trim pieces.

Baked enamelled aluminium sheet trim piece 6/10 mm. Installed before the siding is installed, it makes it possible to shield the re-entrant angles.

3.55 Joint mouldings of 22 and of 30

- 22 for the Ced'r-Tex siding elements,
- 30 for the Ridgewood and Ultra-Plank siding elements.

Baked enamelled aluminium sheet trim piece 4/10 mm. Installed during the installation of the siding elements, it makes it possible to butt joint the siding element while maintaining an expansion space.

3.56 Moulding trim piece J 13 or J 22

- J 22 for the Ced'r-Tex siding elements.
- J 13 for the Ridgewood and Ultra-Plank siding elements.

Trim piece of baked enamelled aluminium sheet 6/10 mm. Installed before installing the siding, it makes it possible to shield certain structures such as the vertical junction of the joinery.

3.57 Moulding trim piece F 13 or F 22

- F 22 for the Ced'r-Tex siding elements.
- F 13 for the Ridgewood and Ultra-Plank siding elements.

Trim piece of baked enamelled aluminium sheet 6/10 mm. Installed before installing the siding, it makes it possible to shield certain structures, for example, to conceal the lathwork in the case of finishwork on plaster.

3.58 Drip moulding

For all the CANEXEL® siding element trim pieces.

Baked enamelled aluminium sheet trim piece 6/10 mm. Installed before the siding is installed, it provides a shield above joinery acting as drain moulding.

3.59 Nails

For all the CANEXEL® siding element trim pieces.

Ring shank nails Ø 2.5 x 40 mm, galvanised steel, (flat head Ø 5 mm) used for concealed fixing of the siding elements onto the framing.

The characteristic pullout resistance Pk of the ring shank nails from the support members, determined according to Standard P 30-310, shall be at least equal to 380 N, for a penetration depth of 30 mm.

3.510 Coloured acrylic mastic

For all the CANEXEL® siding element trim pieces.

This mastic, coming in various colours, makes it possible to do certain finishwork.

Composition: Xylene 35%, Latex 25%, Acrylic resin 27%, various pigments and additives 13%.

3.511 Retouch paint and stain

For all the CANEXEL® siding element trim pieces.

These paints and stains, coming in various colours, make it possible to repair small surfaces of damaged coating. Paint for the solid colours and stain for the wood colours.

3.512 Rodent-proof grille

Rigid PVC L-section trim piece 25 x 25 mm or 30 x 30 mm, perforated on one flange, white or chestnut colour.

3.513 Complementary trim pieces

These are trim pieces with various uses, usually in installing traditional external wall siding, made of press-formed baked enamelled sheet metal, particularly for the drip moulding, the coping overlay and the window or door opening framing.

4. MANUFACTURE

The manufacturing method for the panels applies a patent filed by Guillaume Mason, inventor of the Gun-system process, which consists of linking wood fibres by liquefying the lignin under the combined effect of heat and of pressure.

The manufacturing operations are sequenced as follows:

4.1 Chopping and chipping

These operations are carried out with the aid of heavy machines with cutters positioned on a drum.

4.2 Defibrating

The defibrating is done with water at a temperature of 180°C, under a minimal pressure of 0.5 Mpa. The mixture coming out of this operation is composed 98% of water and 2% of wood.

4.3 Formation of the fibre matting

This operation consists of receiving the pulp on a metal sieve with mesh apertures of 1 mm to enable the water to flow through. The matting receives an addition of 0.25 to 0.28% of phenol for the dry weight of the chips. The forming line makes it possible to eliminate a maximum of water from the matting. Following this operation, the matting is composed 40% of wood and 60% of water.

4.4 Pressing

This operation is done by a press containing 30 stainless steel beds with sections of 1300 mm x 7500 mm. Under the combined effect of the heat (220°C) and of the pressure (3100 Kpa), the wood lignin liquefies and then crystallises as the temperature drops. The press's beds are textured to provide the surface appearance of the siding elements.

The wood panels made in this way come out of the press with 0% water content.

4.5 Cutting to size

As the panels come out of the press, 7500 mm long, 1300 mm wide, they are cooled then cut into siding elements of various widths.

4.6 Stabilisation

After a dampening to 8% water content, the siding elements are placed on pallets and stored for stabilisation during about two weeks.

4.7 Making the siding elements

Once they are stabilised, each of the siding elements is machined with various milling cutters to one of the three section shapes.

4.8 Finishwork

The siding elements are brushed. They then receive, continuously, a tack primer, two coats of paint and a treatment to increase UV resistance. The paints are acrylic type, thermosetting, and they are baked in ovens at 160°C.

5. QUALITY ASSURANCE OPERATIONS

At the factory, the self-inspection for the production of the siding elements comprises, in particular, the following points:

Inspections on production line of raw materials, of setting parameters and of product characteristics,

Inspection of finished products, marking and labelling, finish appearance, geometrical, physical and mechanical characteristics of the products.

The results of the self-inspections are recorded and archived.

Inspections of raw materials:

- Verification of the compliance of the raw materials, timber, resins, fillers and water, by comparison with the acceptance inspection sheets.

6. DISTRIBUTION

In France, SCB distributes the siding elements and the basic trim pieces, specific to the system (angle and connection trim pieces).

Upon request, SCB can also supply nails, retouch paint and stain, as well as coloured mastics.

The insulation, the framing timber as well as the trim pieces of press-formed baked enamelled sheet for framing door and window wall openings, in particular, are to be procured directly by the installer in compliance with the specifications given in this document.

7. IDENTIFICATION

Siding elements holding a CSTBat Certificate can be identified by a labelling in compliance with Appendix 3 of the Special Rules of CSTBat Certification, attached to the Technical Assessment of the products including the external wall sidings, insulated siding elements, cladding elements, and in particular, include:

On the product:

- The CSTBat logo.
- The identification reference of the production batch.

On the pallets:

- The CSTBat logo.
- The name of the system accompanied by the number of the Technical Assessment covering it.
- The certificate number with the factory reference and the last three digits of the Technical Assessment number.

In addition to compliance with the rules, the labelling includes, on the label stapled to each pallet, the trademark, the type of siding element, the colour, the dimensions and the quantities.

8. INSTALLATION

8.1 General description

The SCB Company does not install the products itself. The installation is carried out by installation contracting firms, to which SCB provides, at their request, its technical assistance. For that purpose, it has prepared a detailed installation manual, written in French and translated into German and English.

The CANEXEL® siding elements are installed easily and quickly, without special tooling, on walls of concrete or of masonry elements. They can be installed, according to their type, horizontally, vertically or diagonally, on flat or curved surfaces (maximal curve radius 5 m in horizontal installation only). They can be installed on Timber Frame Houses in compliance with standards in force.

8.11 Storage

The CANEXEL® siding elements are to be stored outside to adapt themselves to the ambient temperature and they are to remain flat on the pallets supplied. Make sure that there is always enough humidity.

8.12 Ventilation

Ventilation is important whatever the substrate or direction of installation of the siding elements. Ventilation must be provided at several levels:

- at the bottom part, starting the siding elements at least 15 cm from the ground,
- at the top part, providing a space of 10 to 15 mm without ever blocking the siding elements,
- next to the door and window wall openings to enable air circulation.

8.13 Expansion

For façades with lengths greater than 10 meters (horizontal installation), the siding element length is to be limited to about 2.50 meters to avoid any accumulation of dimensional variations (expansion – shrinkage).

8.14 Cutting to size

The CANEXEL® siding elements are cut with the aid of a fine tooth saw on the paint side. Small cuts may be done using a jigsaw.

8.2 Installing the siding elements

A minimal distance of 15 cm must be kept between the bottom of the siding elements and the ground level (5 cm in the case of slabbing) or 5 cm in the case of an underlying flashing. Before nailing a siding element, make sure that it has been properly fitted into the previous one. Like wood, the CANEXEL® siding elements undergo dimensional variations depending on the humidity. It will be important to take this into account when installing, particularly in a dry period, by leaving clearances of 5 mm at the extremity of the boards to make expansion possible (next to angles, joinery, etc.). The CANEXEL® joint mouldings have shapes which make it possible to ensure the expansion.

8.21 Horizontal installation (Figures 4 and 5)

Only the CANEXEL® Ridgewood and Ced'r-Tex siding elements can be installed horizontally. The Ultra-Plank siding element for vertical installation.

CANEXEL® siding elements are installed horizontally on vertical support timbers or battens, spaced at a maximum of 400 mm on-centre. These are to have a minimal thickness of 30 mm on masonry and of 22 mm on timber framing.

The installation of the first siding element at the bottom requires installing a starter strip to hold the siding elements at the bottom part. It is recommended that the support timbers or battens be backed up by timber pieces 20 cm high to properly hold the starter strip.

The siding elements are fixed to the vertical battens by concealed nailing at the top part of the boards. A grooving at the top part of the boards indicates the positioning of the nails.

Each extremity of the siding element shall coincide with a stud. The butt joint of the boards is constructed with the aid of joint mouldings. These must be nailed at the top part onto the timber stud.

For façades longer than 10 m, the length of the siding elements is to be limited to 2.50 m to avoid any accumulation of dimensional variations.

8.22 Horizontal curved installation

Only the CANEXEL® Ridgewood and Ced'r-Tex siding elements can be installed horizontally on curved walls with a curve radius equal to or greater than 5 m.

The horizontal installation of CANEXEL® siding elements on curved walls is done on vertical support timbers or battens, spaced a maximum of 300 mm on-centre. These shall have a minimal thickness of 30 mm on masonry and of 22 mm on timber framing.

The siding elements are fixed to the vertical battens by concealed nailing at the upper part of the boards. A grooving at the upper part of the boards indicates the positioning of the nails.

Each siding element extremity shall coincide with a support member. The boards are butt jointed with the aid of joint mouldings. These must be nailed at the upper part on the lathwork.

The length of the siding elements shall not be greater than one third of the curve diameter to reduce risks of unclinching of siding elements during expansion.

8.23 Vertical installation (Figure 6)

Only the Ridgewood and Ultra-Plank CANEXEL® siding elements can be installed vertically.

The CANEXEL® siding elements are installed vertically on horizontal support timbers or battens, spaced 400 mm on-centre. These are to have a minimal thickness of 30 mm. To enable the air to circulate properly, cutouts of 120 mm, positioned in the axis of the siding elements, are to be made in

the battens in staggered pattern. Another solution to provide good ventilation is to install underbattens.

The siding elements are fixed to the horizontal battens by concealed nailing. A grooving on the tongue indicates the positioning of the nails.

Each extremity of the siding elements shall coincide with a support member. The boards are to be butt jointed with the aid of CANEXEL® coloured mastic. The space between two boards shall be 5 mm to enable expansion as temperature and humidity vary.

For heights of more than 3.60 m, the butt jointing of the siding elements can be replaced by a horizontal broken joint.

8.24 Diagonal installation (Figure 7)

Only the Ridgewood siding element can be installed diagonally.

The CANEXEL® siding elements are installed diagonally on vertical support timbers or battens, spaced a maximum of 300 mm on-centre. These are to have a minimal thickness of 30 mm on masonry and of 22 mm on timber framing. In the case of an angle more than 50° off horizontal, the lathwork is to be installed horizontally (Chapter 8.23 Vertical installation).

The siding elements are fixed to the vertical battens by concealed nailing at the upper part of the boards. A grooving at the upper part of the boards indicates the positioning of the nails.

Each extremity of the siding element shall coincide with a support member. The boards are joint butted vertically with the aid of the CANEXEL® coloured mastic. The space between two boards shall be 5 mm to enable expansion with the temperature and humidity variations.

8.3 Particularity of installation on timber framing (Figure 17)

The wall external facing will consist of panels in compliance with standards in force.

A rain-guard in compliance with standards in force is to be installed on the outer face of the wall between the plywood panels and the timber lathwork.

The siding boards are to be nailed (see Chapter 3.2) to a framing in compliance with Chapter 3.3.

An air layer with a minimal thickness of 22 mm is also established between the panel wall and the outside facing.

9. INDIVIDUATED POINTS

9.1 Shielding the angles

Angles can also be shielded by timber trim pieces according to standards in force or other accessories, which would provide perfect leak-proofing. The joint between the siding element and the trim piece is to be waterproofed with an acrylic mastic in the case of an angle trim piece which has no extension in back of the siding elements (Figures 14 and 15).

9.10 Salient angles

For the Ced'r-Tex siding elements, the salient angles can be shielded with trim pieces of baked enamelled aluminium sheet, 6/10 mm, referred to as the "Individual outside corner trim piece of 22". This trim piece is to be installed on the battens after the CANEXEL® siding elements are installed.

For the Ridgewood and Ultra-Plank siding elements, the salient angles can be shielded with a baked enamelled aluminium sheet 6/10 mm, referred to as the "Continuous outside corner trim piece". This trim piece is to be installed on the battens before the CANEXEL® siding elements are installed (Figure 9).

9.11 Re-entrant angles

The re-entrant angles can be shielded with trim pieces of baked enamelled aluminium sheet 6/10 mm referred to as the "Continuous inside corner trim piece". This trim piece is to be installed on the battens before the CANEXEL® siding elements are installed (Figure 10).

9.2 Shielding the tops of doors and windows

The tops of doors and windows can be shielded with trim pieces of baked enamelled aluminium sheet 6/10 mm referred to as the "Drip moulding". This trim piece is to be installed on the battens before the CANEXEL® siding elements are installed. Its function is to channel the water. Nail it every 30 cm and let it protrude 15 mm on each side of the door or of the window (Figure 17).

9.3 Shielding the edges of the siding

The edges of the siding can be shielded with baked enamelled aluminium sheet trim pieces 6/10 mm, referred to as:

- "Moulding trim piece J 13" for the Ridgewood or Ultra-Plank,
- "Moulding trim piece J 22" for the Ced'r-Tex,
- "Moulding trim piece F 13" for the Ridgewood or Ultra-Plank,
- "Moulding trim piece F 22" for the Ced'r-Tex,

These trim pieces are to be installed on the battens before the installation of the CANEXEL® siding elements (Figures 11 and 12).

9.4 Shielding the bottom of the façade

It is recommended that a rodent-proof grille be installed at the bottom part of the façades (Figure 13).

9.5 Various shieldings (Figure 16)

Complementary trim sections can be installed to shield individuated points. These are the sections habitually used in installing traditional external wall sidings. They are made of press-formed pre-baked enamelled sheet, particularly for the drip moulding, the overlay on the coping and the framing of the door or window opening (Figures 8, 16, 17 and 18).

10. SERVICING

CANEXEL® external siding was designed to keep its eye appeal over the years without servicing. However, the atmosphere of certain regions and certain polluting environments may require a minimum amount of servicing.

10.1 Current servicing

The CANEXEL® siding is cleaned easily with water and a non-abrasive detergent.

Any small damaged surface can be repaired with the aid of the CANEXEL® retouch paint and stain.

10.2 Renovation by painting

In a long term, it is possible to apply a new coat of paint to the CANEXEL® siding elements. After cleaning (see previous Chapter), a paint recommended by SCB is to be applied. This paint can be applied with a brush, a roller or a spray gun, in one or two coats.

10.3 Replacing a siding element

A siding element is replaced by the non-concealed nailing of a new standard siding element.

After longitudinal sawing of the accident damaged siding element, the lower part is taken off without difficulty. To disengage the upper part, it is necessary to use a pinch bar to remove the nails in place.

The new siding element, prepared in advance by eliminating the slanting part of the lower fitting conformation, is slid under the bottom rim of the upper siding element.

Ring shank nails, the heads of which remains visible, fix the two rims again.

B. EXPERIMENTAL RESULTS

The CANEXEL® siding elements have been subjected to many tests, in Canada, in Holland as well as in France.
Among the tests carried out, the following may be mentioned:
At the "Centre Technique du Bois et de l'Ameublement" (CTBA) (Wood and Furniture Technical Centre) (CR CØ 0042/84)

- Water absorption at 24 hours, swelling, moisture related dimensional variations,
- Thermal stresses,
- Behaviour when subjected to impacts,
- Artificial ageing.

At "Centre Scientifique et Technique du Bâtiment" (CSTB) (Scientific and Technical Building Centre) (CR No. CL 97-007)

- Resistance to pulling force,
- Behaviour when subjected to impacts.

From the "Laboratoire Central VERITAS" (Test Report CN 53 B 95 0112 E – July 95)

- Dimensional and weight related variations,
- Adherence of the siding and stability of the colours after 75 conventional climatic cycles according to Standard P 84-402.

At the "Laboratoire National d'Essais" (LNE) (National Test Laboratory) (No. E021068-CEMAT/1)

- Fire reaction Rating M3.

At LNE (No. 5040807/95)

- Gross calorific value.

The CANEXEL® siding elements hold **CSTB Technical Assessment No. 2/03-1037**.

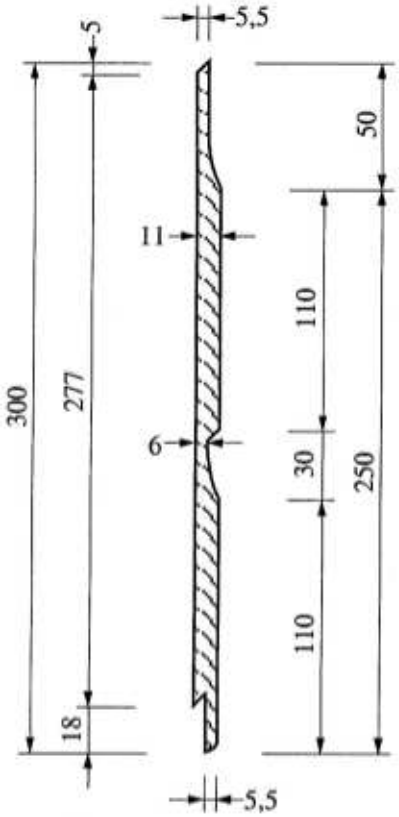
C. REFERENCES

Manufactured for about fifty years, the CANEXEL® siding elements now cover several million square meters in North America (Canada and the USA).

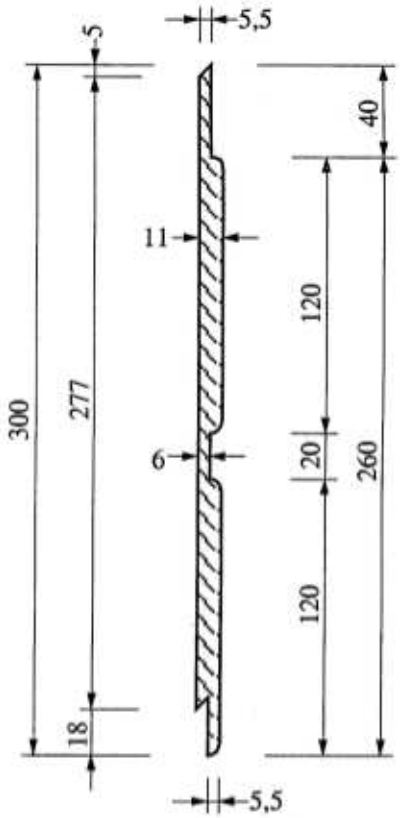
As of today, the total completed projects amount to 3.000.000 m^2, mainly in individual homes, small apartment buildings, public, commercial and leisure oriented buildings.

On simple request, the SCB company can supply a list of references in France and in Europe in the various fields of application.

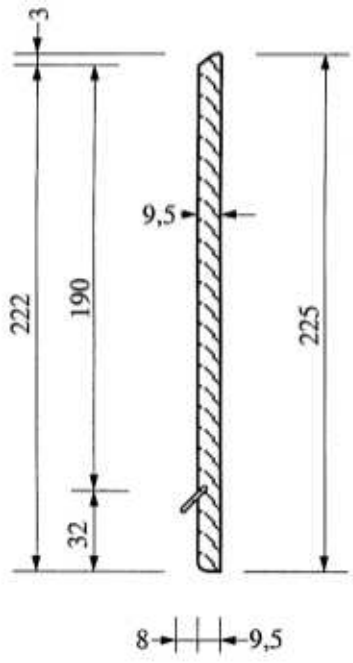
Figure 1 CANEXEL siding elements



RIDGEWOOD siding elements

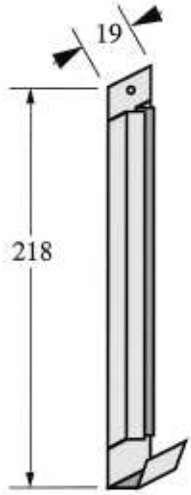


ULTRA-PLANK siding elements

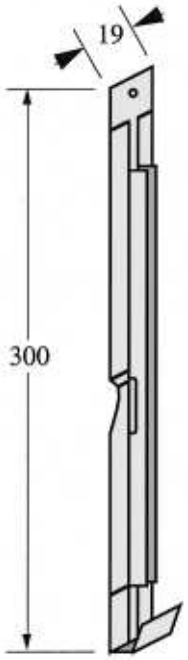


CED'R-TEX siding elements

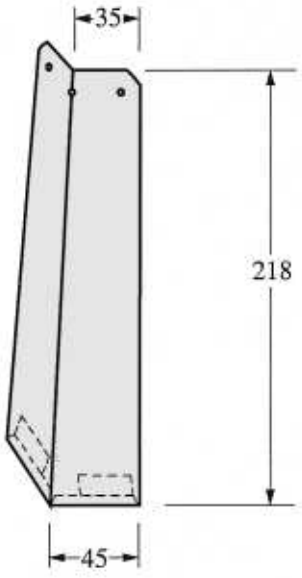
Figure 2 CANEXEL accessories



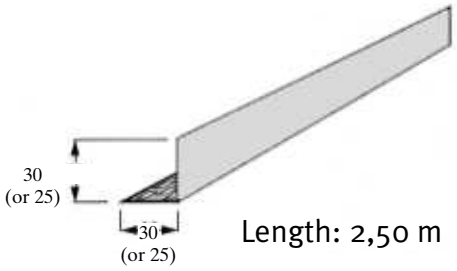
Joint moulding trim
piece 22



Joint moulding trim
piece 30



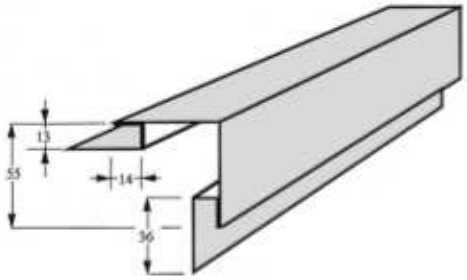
Individual outside corner trim
piece 22



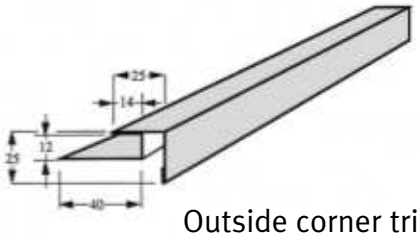
Length: 2,50 m

Rodent-proof grille

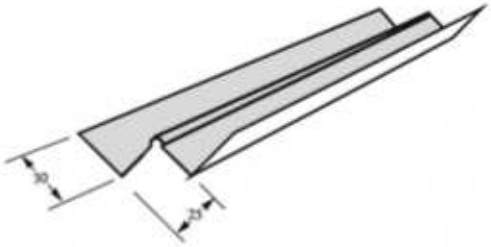
Figure 3 CANEXEL accessories



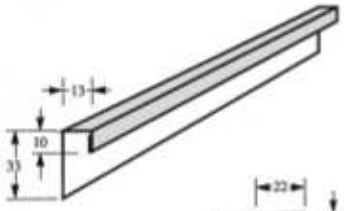
Continuous outside corner trim piece 55



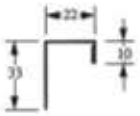
Outside corner trim piece 25



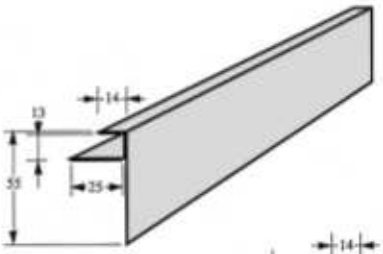
Continuous inside corner trim piece



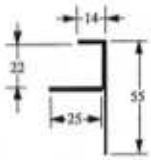
Moulding trim piece J 13



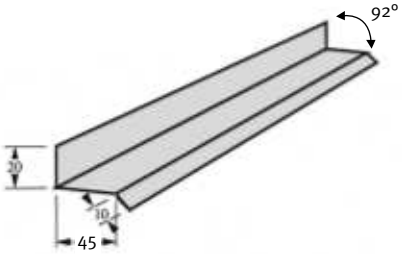
Moulding trim piece J 22



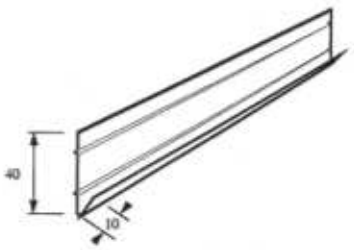
Moulding trim piece F 13



Moulding trim piece F 22



Drip moulding



Starter strip

Note
All the accessories illustrated here are 3 m long.

Figure 4 Horizontal installation of Ced'r-Tex

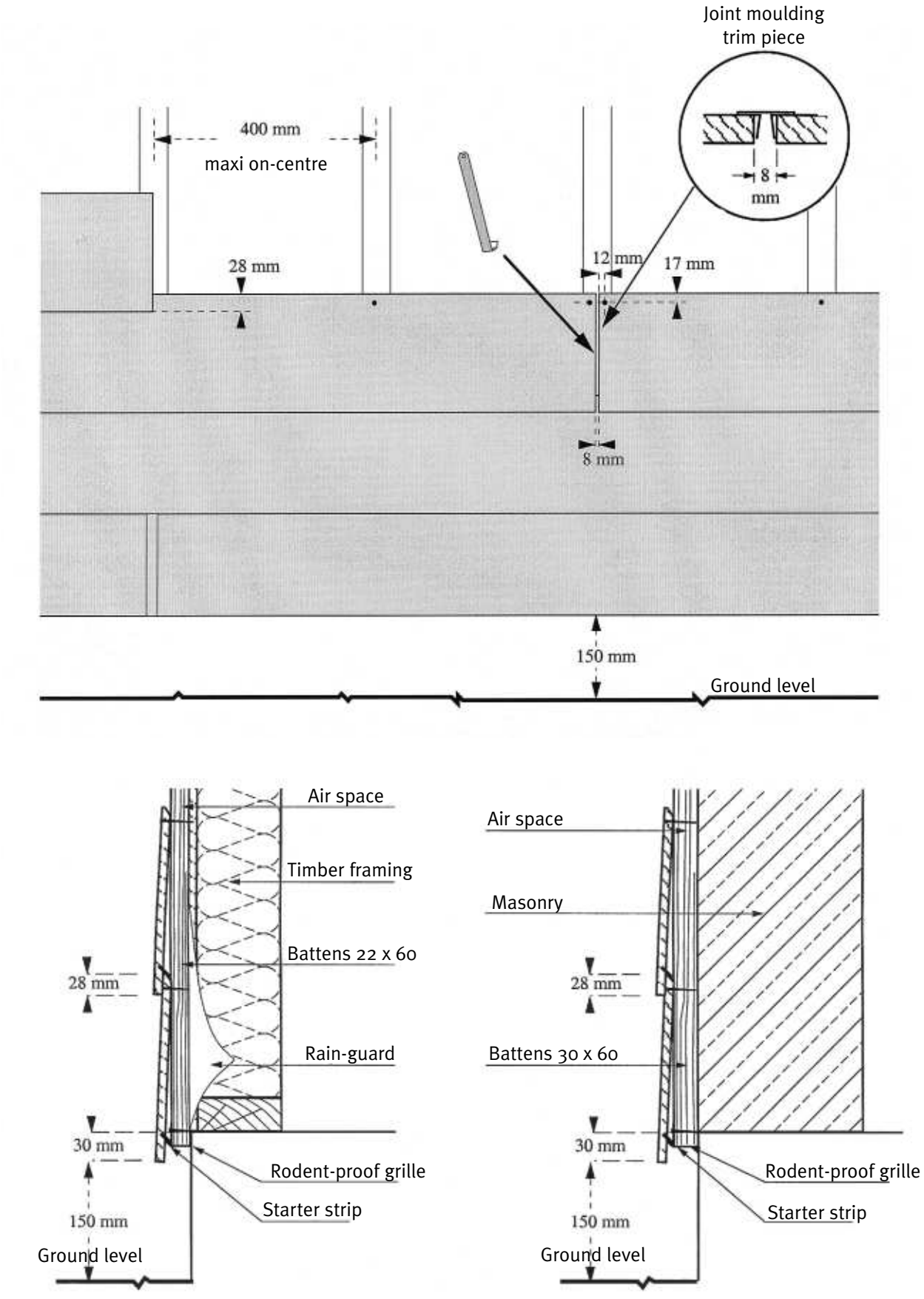
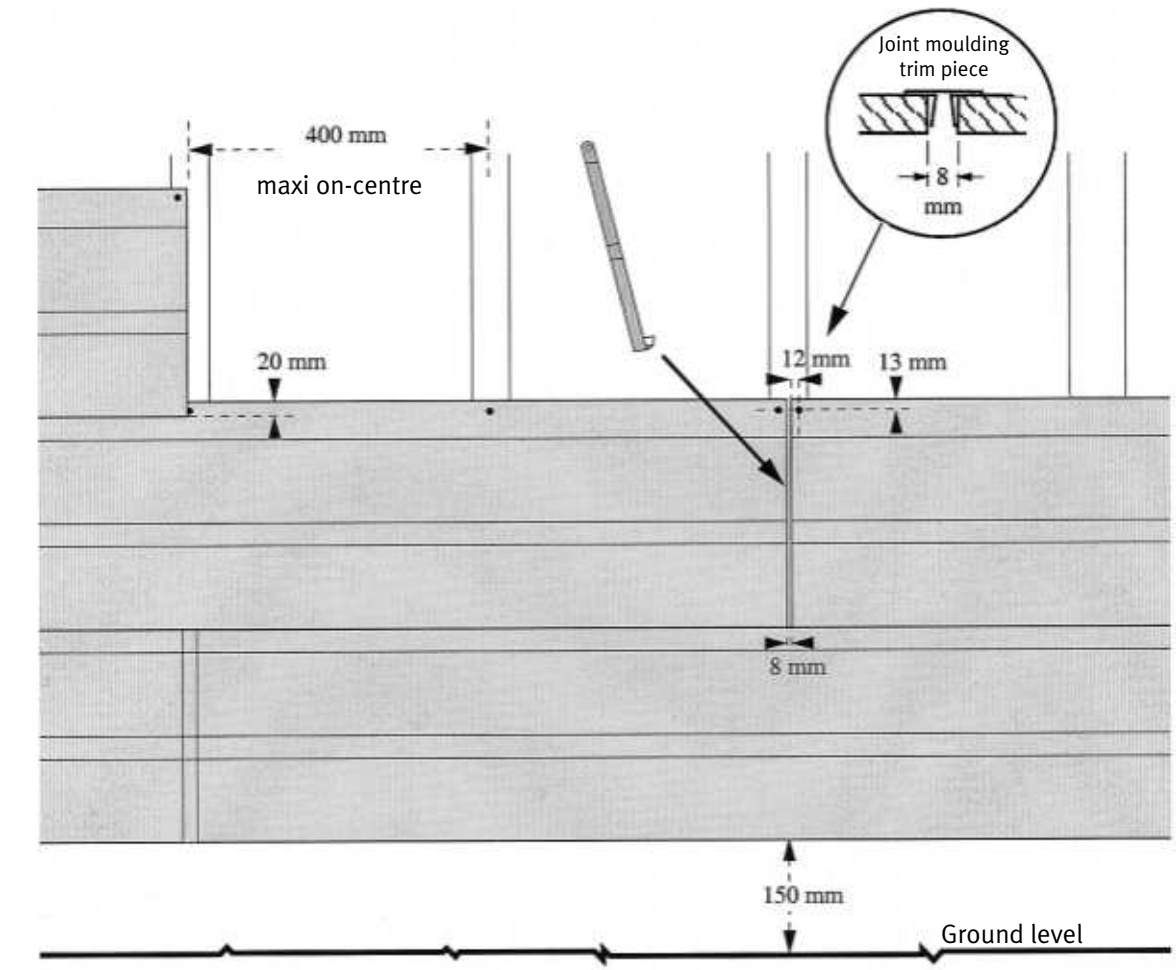
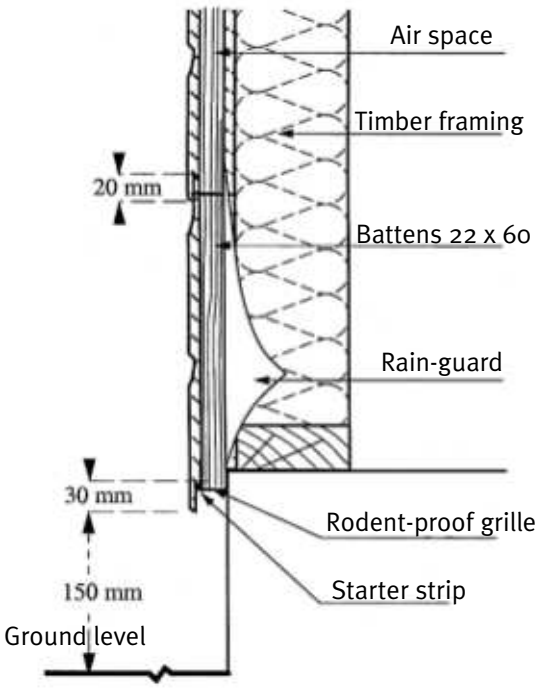


Figure 5 Horizontal installation of Ridgewood





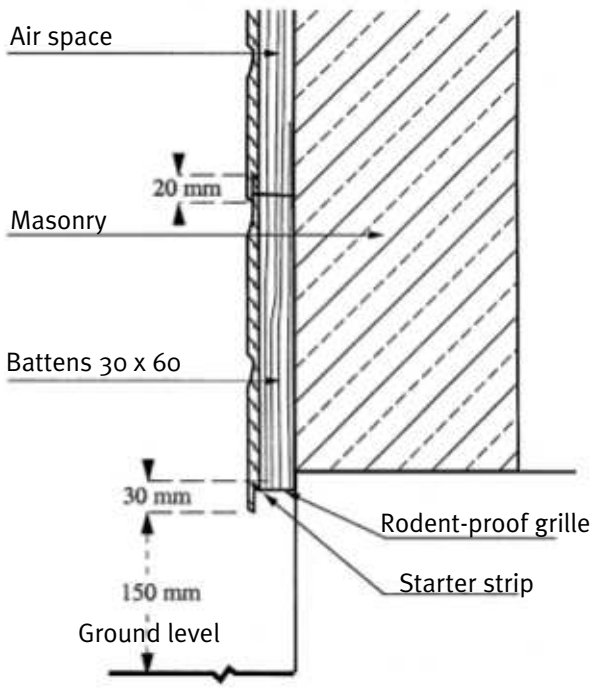
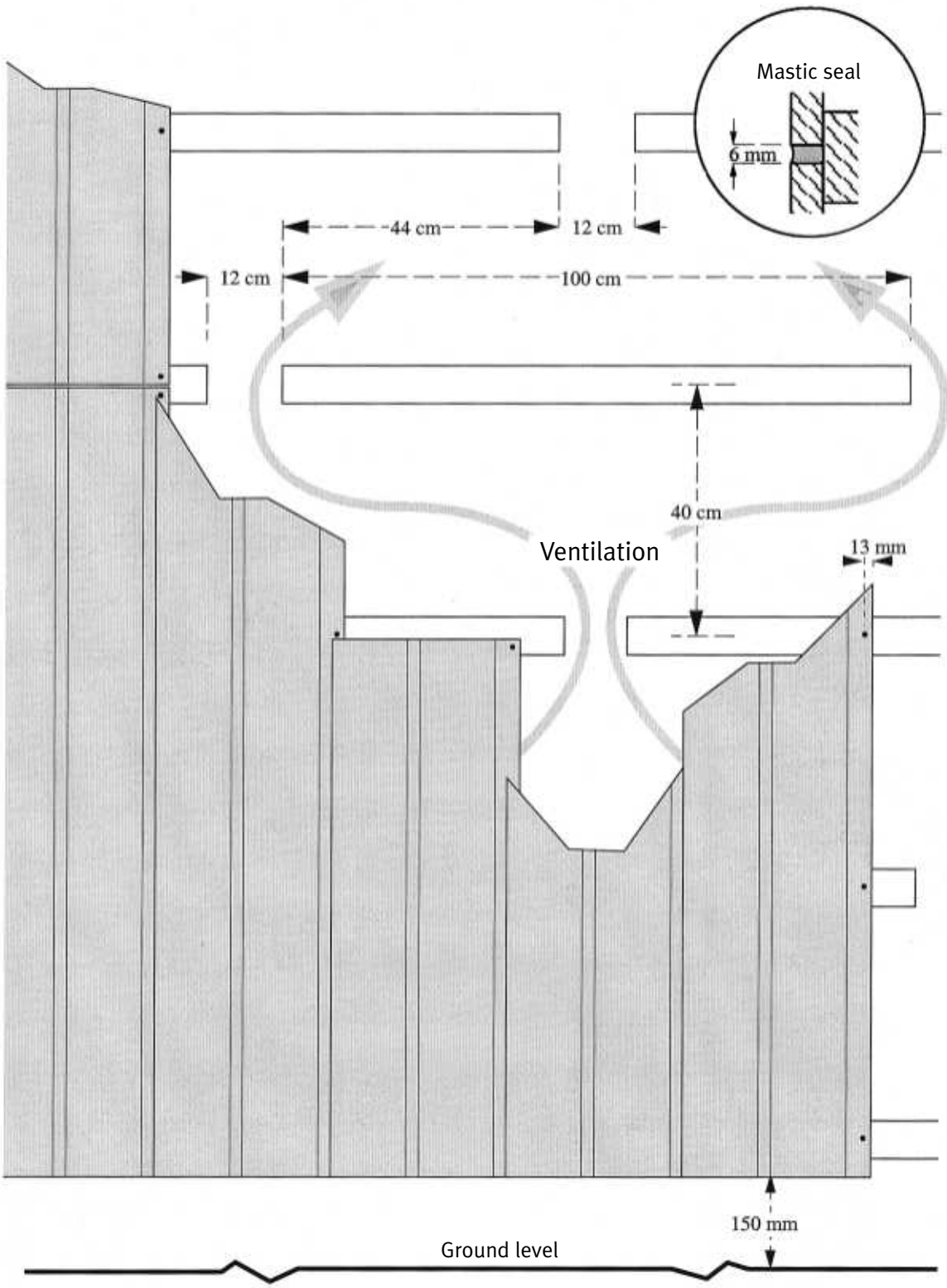


Figure 6 Vertical installation of Ultra-Plank/Ridgewood



Cross section of view of Ultra-Plank

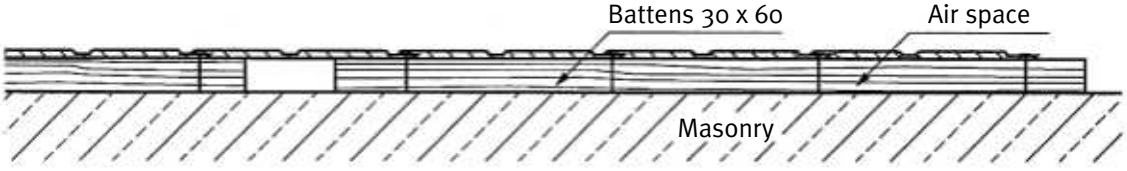


Figure 7 Diagonal installation Ridgewood

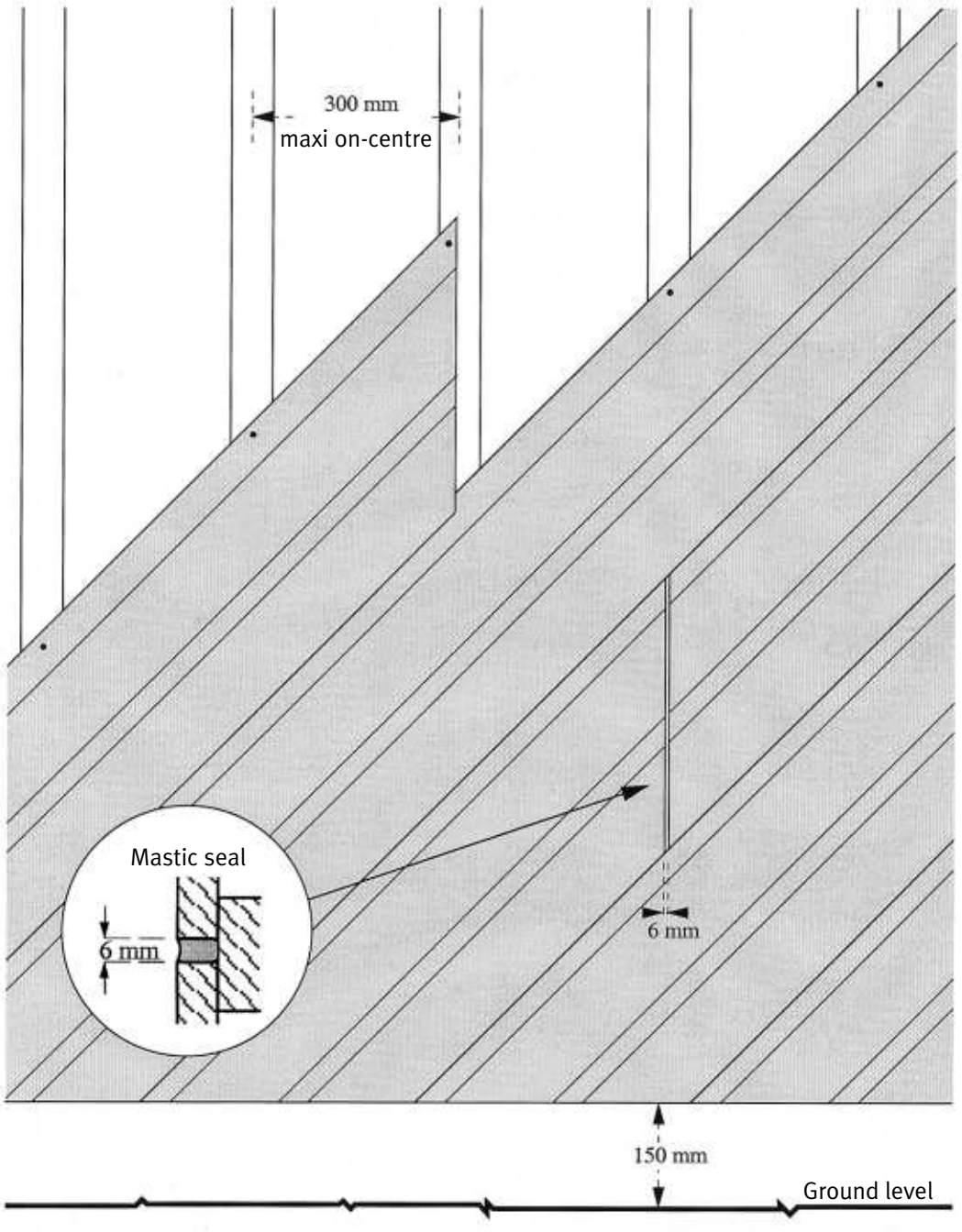


Figure 8 Cross sectional view of horizontal installation with insulation

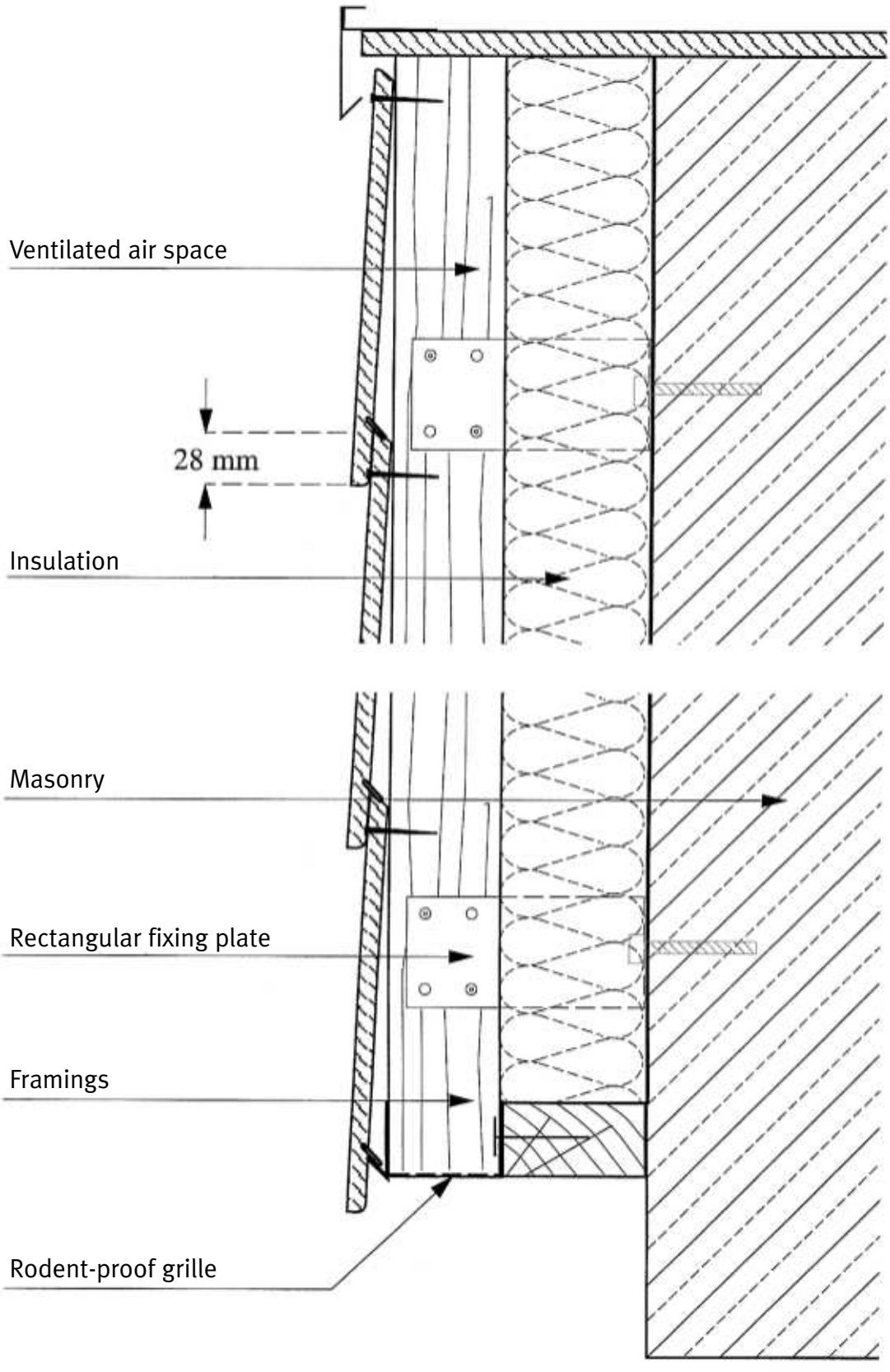
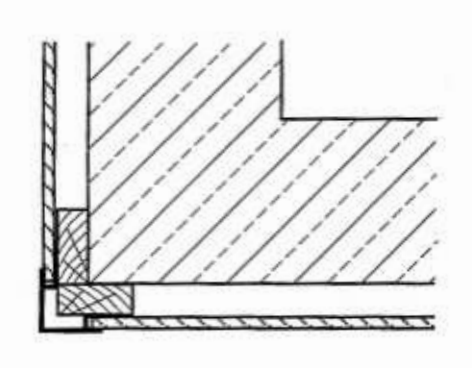
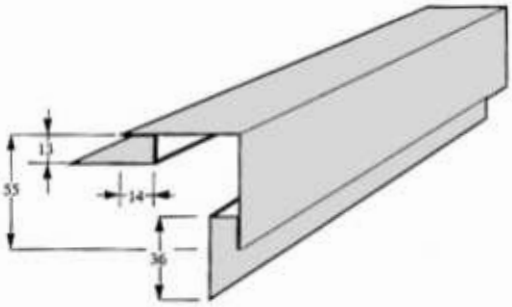
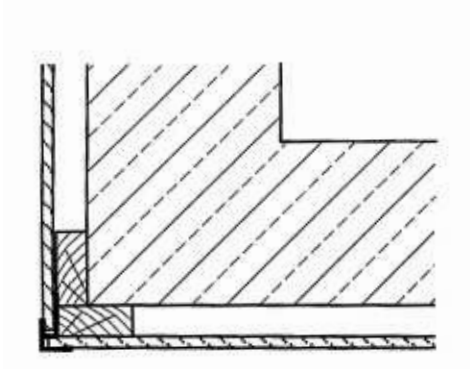


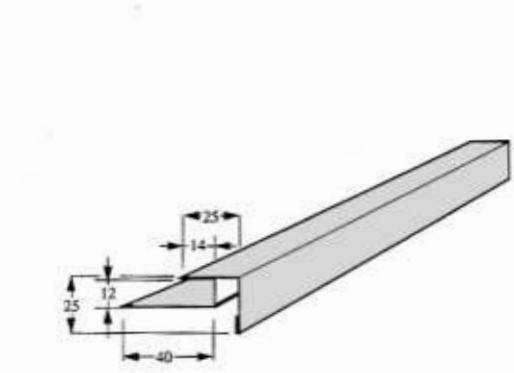
Figure 9 Salient angle





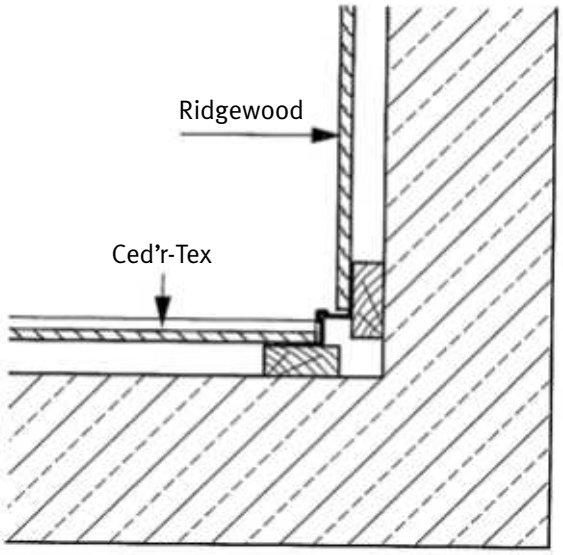
Continuous outside corner trim piece 55

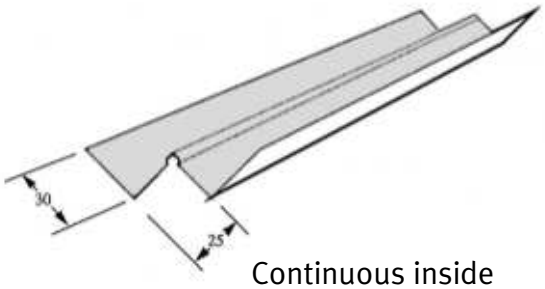




Outside corner trim piece 25

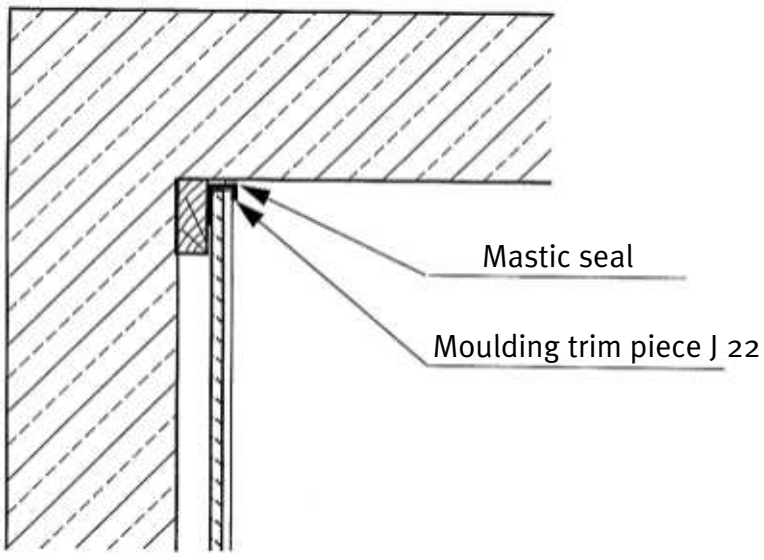
Figure 10 Re-entrant angle

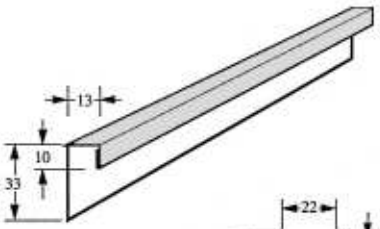




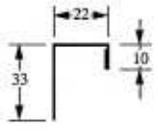
Continuous inside corner trim piece

Figure 11 Moulding trim piece J



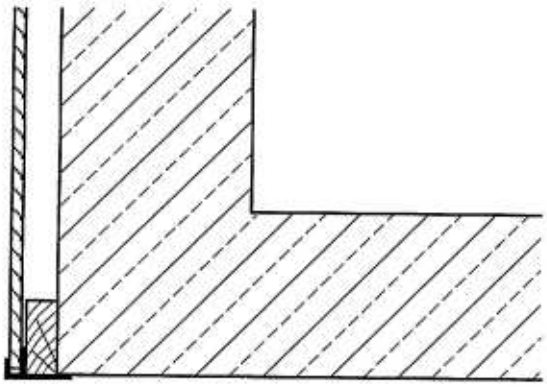


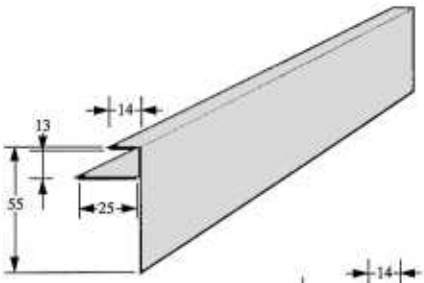
Moulding trim piece J 13



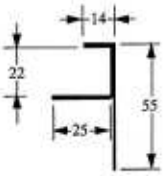
Moulding trim piece J 22

Figure 12 Moulding trim piece F



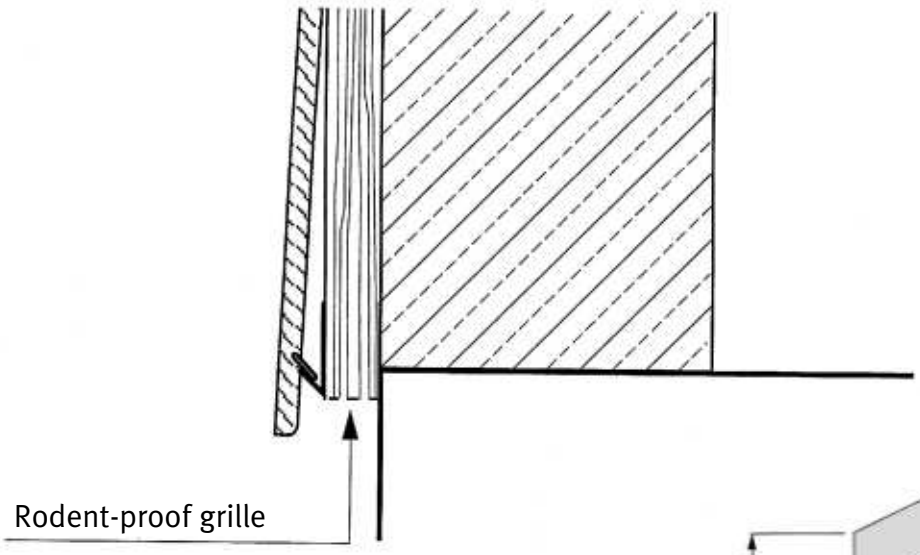


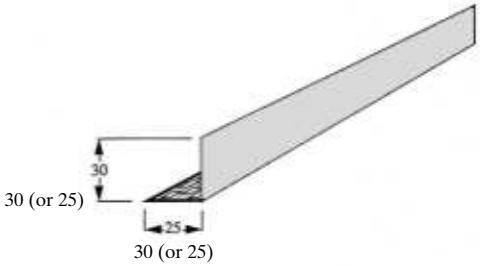
Moulding trim piece F 13



Moulding trim piece F 22

Figure 13 Rodent-proof grille





30 (or 25)

Figure 14 Solid wood re-entrant angle

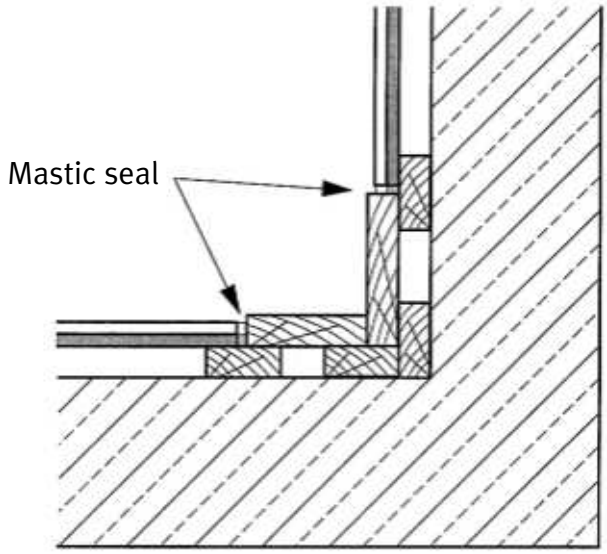


Figure 15 Solid wood salient angle

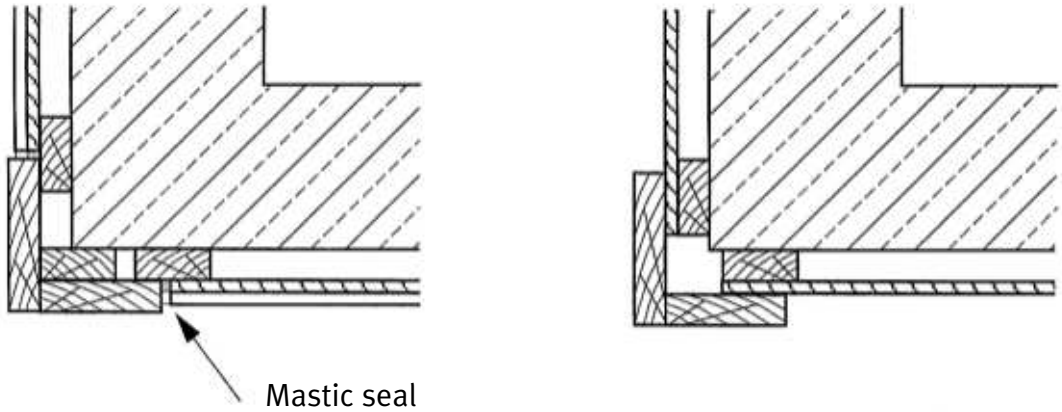


Figure 16 Details – broken joint and coping

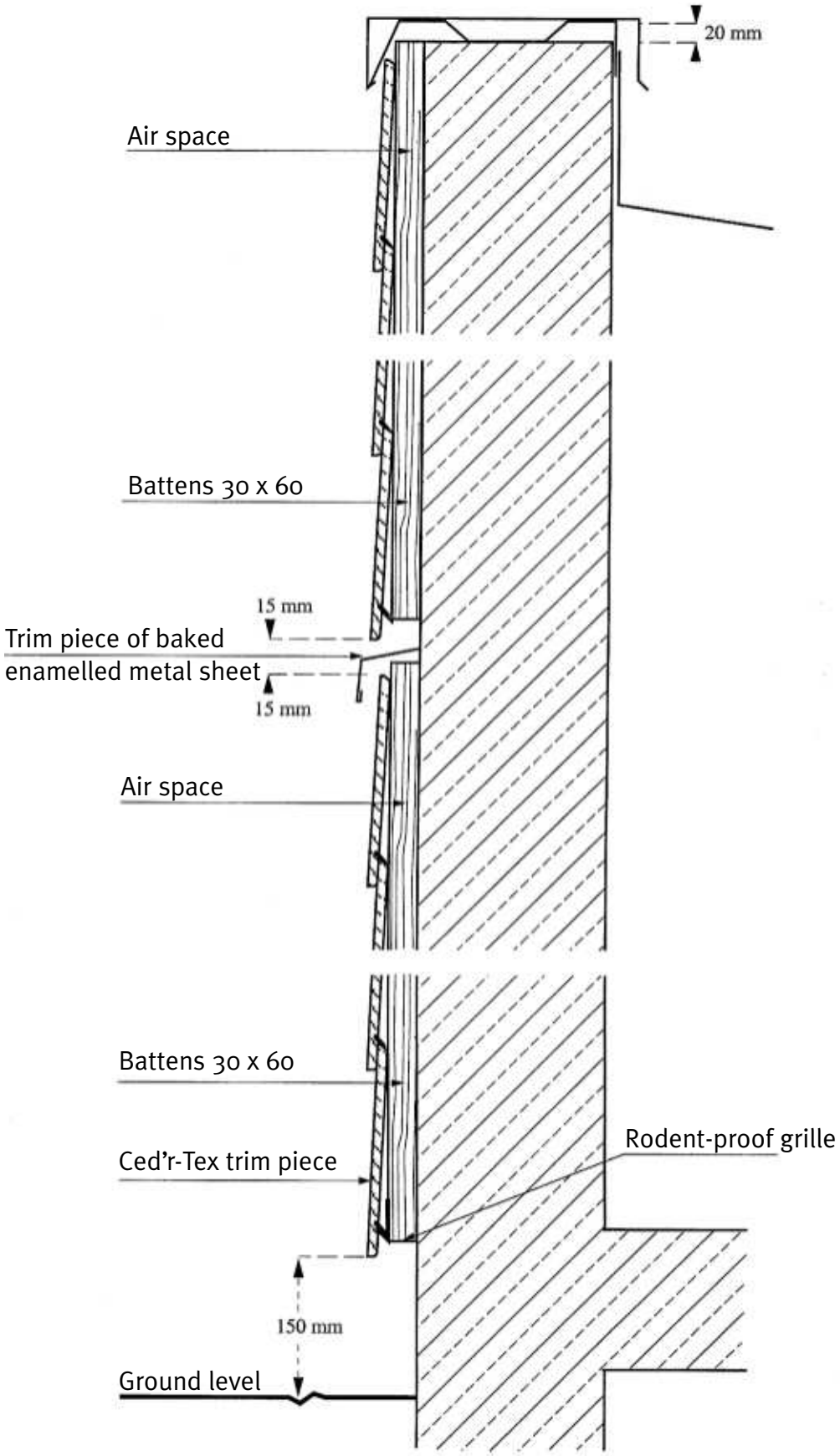


Figure 17 Sectional view of joinery at the outside surface

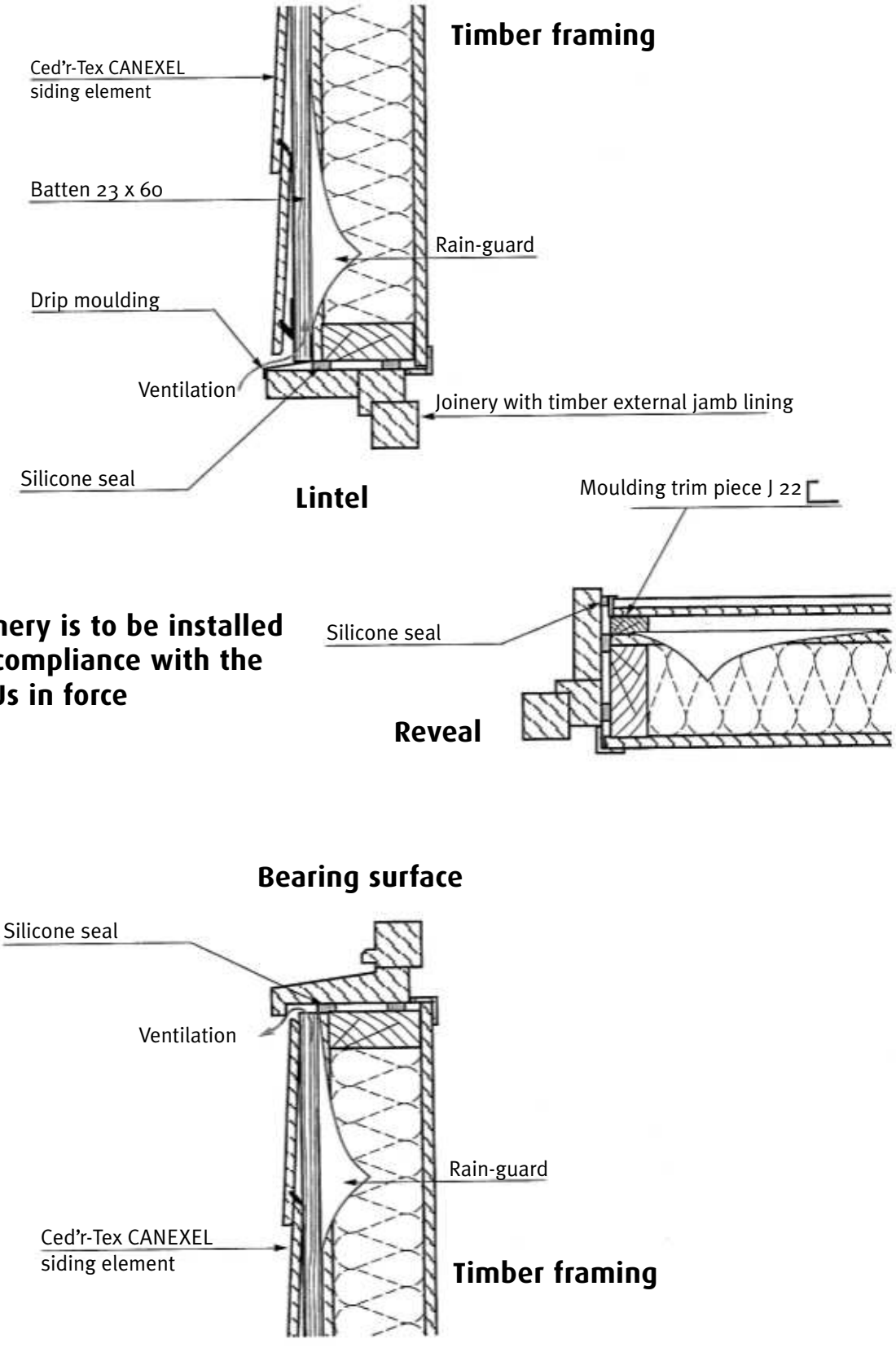
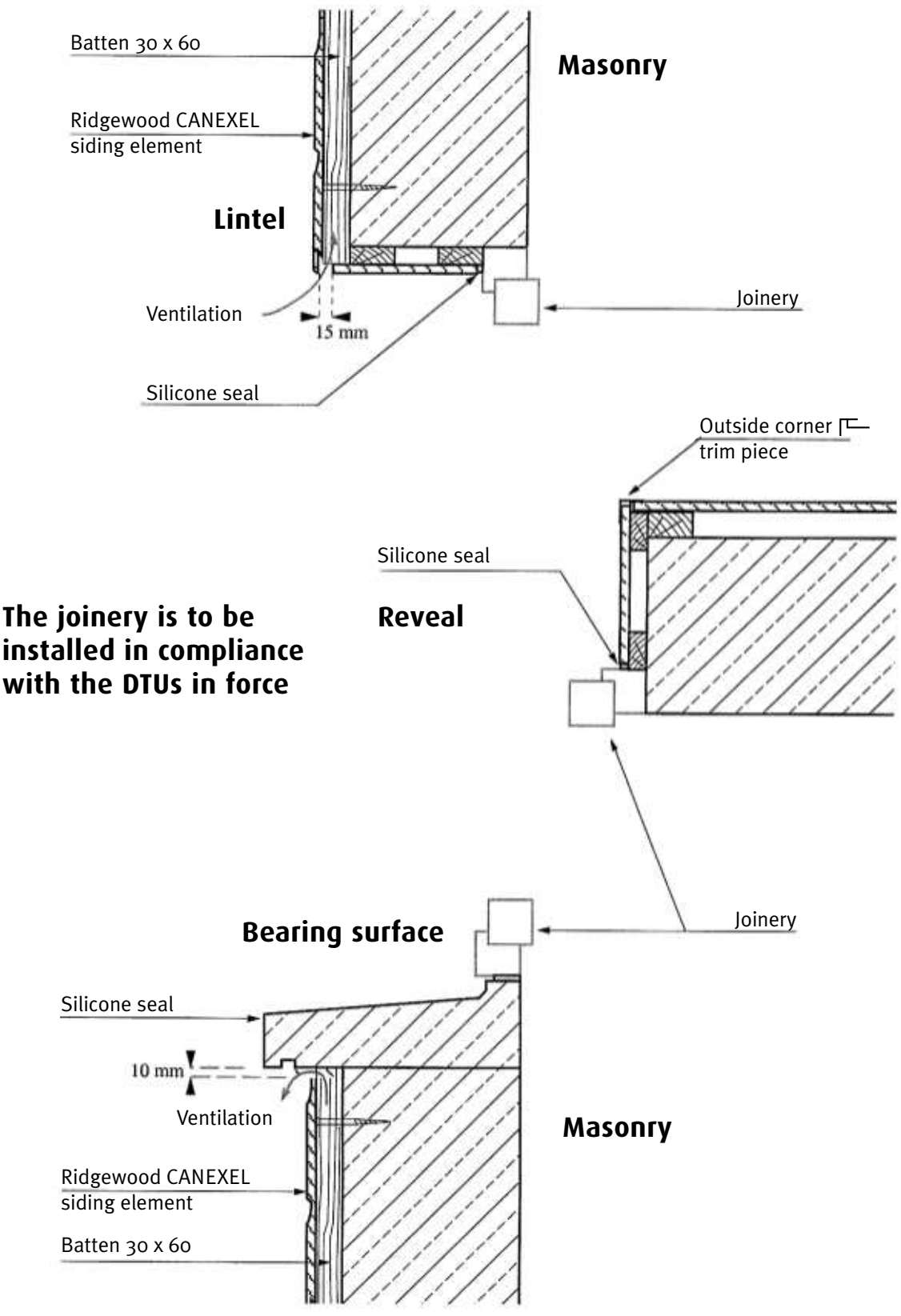


Figure 18 Sectional view of joinery with reveals



The joinery is to be installed in compliance with the DTUs in force

Summary technical information sheet

Siding element range	CED'R-TEX	RIDGEWOOD - ULTRA-PLANK
Composition	95% wood fibres, 3% wax, 2% phenol resin	
Board	Single board with tongue	Double board with incurved channel (Ridgewood) or rectangular channel (Ultra-Plank)
Appearance	wood-textured	
Paint finish	4 coats of acrylic paint oven baked at 160°C – UV treatment	
Colour	White, Almond, Sand, Mist grey, Scottish blue, Maïze, Sage green, Acadia, Yellowstone, Sierra	White, Almond, Sand, Mist grey, Scottish blue, Acadia, Yellowstone, Sierra. Additional Ridgewood colours: Maïze, Sage green, Country red, Cedar
length x effective width x thickness	3660 x 200 x 9.5 mm	3660 x 280 x 11.1 mm
Installation	By overlap horizontally or diagonally	By conformation fitting horizontally, vertically and diagonally for ridgewood, only vertically for Ultra-Plank
Fixing	Concealed by nailing every 400 mm	
Effective surface per bundle	4 siding elements = 2.91 m^2	4 siding elements = 4.10 m^2
Effective surface per pallet	40 bundles = 116.40 m^2	27 bundles = 110.70 m^2
Weight per unit of surface area	10.6 kg/m^2	10.3 kg/m^2
Density	920 kg/m^3	920 kg/ m^3
Guarantee and certifications	Ten year guarantee SMABTP no. 285425V Fire reaction Rating M3 – Test Report no. E021068-CEMAT/1 CSTB Technical Assessment no. 2/03-1037	
reVETIR rating	$r_2e_2V_2E_3T_3I_2R_4$	$r_2e_2V_1E_3T_3I_2R_4$
Strength and resistance tests	Good ageing stability, attested by Bureau Veritas Tests of isotropy, moisture resistance, temperature differences, impacts, by CSTB	
Servicing	Minimised servicing. Dirty surfaces can be cleaned with water and non-abrasive detergent	

Recommendations

CANEXEL siding is a product with a natural wood fibre base. Like wood, it is a living material, which undergoes dimensional variations under the effect of moisture.

Precautions are to be taken so as not to impede the expansion and to reduce it by providing an efficient ventilation of the air space. These precautions are simple to implement and are defined in the Technical Assessment and in this Technical Guide.

Five basic rules are to be observed:

❏ On-centres for fixing of 400 mm maximum
(on-centres of 300 mm maximum in the case of a horizontal curved installation)

❏ A fixing by ring shank nails with a penetration of 30 mm into the support members

❏ Sufficient expansion spaces, particularly next to windows

❏ Efficient ventilation of the air space and special attention next to windows and in copings

❏ In the case of a façade longer than 10 m, siding elements to be cut to 2.50 m.

NOTES: