INSTALLATION GUIDE

Eurostyle® panelok®

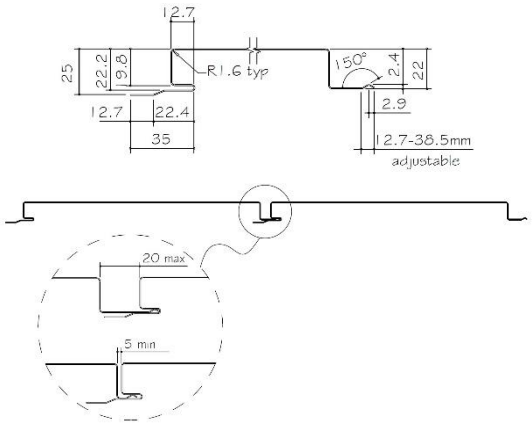
Eurostyle® panelok® (North and South Island)

- 525mm coil width: nominal panel width – 400mm
- 390mm coil width: nominal panel width – 265mm
- 340mm coil width: nominal panel width – 215mm

Tolerance for nominal effective cover/panel width: ±5mm

Panel Weight	Steel x 0.55mm*
400mm	2.35kg/m
265mm	1.75kg/m
215mm	1.55kg/m

All weights are approximate (*150g/m² alloy coating)



All dimensions are nominal, in mm. Not to scale.

DESCRIPTION

Eurostyle® panelok® is the latest tray wall cladding system incorporating superior technology. It is a highly adaptable interlocking panel type wall cladding solution.

Designed to be self-supporting on cavity battens, Eurostyle® panelok® can also be direct fixed for economy, providing a modern architectural design.

BUILDING DESIGN / PERFORMANCE CRITERIA / PRODUCT SELECTION

During the design phase, it is necessary for the designer to consider a number of factors when specifying Eurostyle® panelok®:

- Preferred pan width
- Material type and finish
- Sheet lengths
- Wind loadings
- Reference to Roofing Industries detailed drawings
- Swaged or non-swaged
- Nogg/Girt spacing

Eurostyle® panelok® is to be used as wall cladding only.

Underlay as per the project specifications should be used to meet the NZS 2295 and AS/NZS 4200 standards.

Whilst aesthetics and product availability do play a part, the chosen profile must meet certain performance criteria. These are centred around the ability of the product to span between nogg/girt spacings and meet the design criteria.

Walling profiles with wide flat ribs and without the use of swages can give rise to a visible waviness or undulations known as canning. These are considered to be an architectural feature of the profile.

Eurostyle® panelok® has the option of a double swage in each pan as an architectural feature, to assist in reducing undulation if required. Different swage options, including single swage, are available on request and must be specified at time of order.

Normally, structural integrity is not affected by canning. However, structural integrity must be reviewed if the distortion results from an extreme external influence.

Since many factors are involved outside of our control, Roofing Industries cannot realistically assure the total elimination of undulation in the ribs of Eurostyle® panelok®.

Low gloss paint coatings are also available which assist in minimising the visual apparentness of any undulations and must be specified at time of coil ordering. Refer also to the Canning Section.

Penetration flashings for Eurostyle® panelok® must be installed by the Eurostyle® installation contractor only and other trades must not cut any holes unless under the supervision of the roofing contractor.

Ensure placement of penetrations does not interfere with panel joints. Eurostyle® panelok® is an alternative solution to E2/AS1 and is to be designed and installed to manufacturer's recommendations.

Custom-made cut to length sheets are subject to transport and site limitations. As sheet lengths increase higher transportation costs may be applicable.

Eurostyle® panelok® is manufactured in our factory, however it may be possible to manufacture on site in cases where site access or transportation is an issue, contact Roofing Industries for specific advice.

Supported by load/span data and recommended fastener patterns derived from load testing using industry test-rig apparatus in accordance with the NZ Metal Roofing Manufacturers (MRM) test procedure.

All fixings and fasteners are to be of an approved type, compatible with all materials, the environment and must meet the requirements of the NZ Building Code. Refer to E2/AS1, the NZ MRM Roof and Wall Cladding Code of Practice (MRM COP).

Installation is to be in accordance with the MRM COP and manufacturers literature.

COATINGS

Selecting the right substrate is dependent on the environment in which the project is situated. Eurostyle® panelok® profiles are available in the following Pacific Coilcoaters and New Zealand Steel materials along with the full range of ColorCote® and COLORSTEEL® colours.

Steel Substrate

Base Metal Thickness (BMT): 0.55 mm

- ColorCote® ZinaCore™
- ColorCote® MagnaFlow™
- COLORSTEEL® Maxam®

Refer to Pacific Coil Coaters and New Zealand Steel literature for environmental zones, coating systems and warranty information.

Material is subject to availability and other materials such as aluminium may be available subject to longer lead times. Contact Roofing Industries for specific advice.

FIRE TESTING

Refer to Pacific Coil Coaters and New Zealand Steel bulletins for fire testing of ColorCote® and COLORSTEEL® products, which can be supplied on request.

SUBSTRATE

Eurostyle® Panelok® Panel is a contemporary-looking wall cladding system installed with a drained cavity/ventilated air gap and is suitable for external and internal applications. The panels are connected by an interlocking groove giving it the elegant appearance of a recessed joint.

The reveal panel ranges from 215mm to 400mm width and the recessed seems (shadow lines) can range from 5mm to 20mm. Steel sheets are available greater than 8m, however these require crating or specialised transportation to protect the sheeting.

Interlocking panels are laid vertically or horizontally (from the top down), using concealed fasteners fixed through the grooved flange directly into perpendicular battens, with following panels connected by inserting the male flange into the groove ensuring swift and straight forward installation across large wall areas. In some cases, additional pan fixings will be required.

A continuous plywood substrate is not required.

THERMAL EXPANSION/CONTRACTION

All metal cladding and flashings are subject to expansion and contraction caused by changes in temperature, and their design should allow for this movement. The energy produced should be absorbed without damage to the cladding, fixings or structure.

Eurostyle® panelok® interlocking panel system allows for thermal expansion in the panel joints.

NOGG/GIRT SPACING LIMITATIONS AND RECOMMENDATIONS

E2/AS1 states that a specific design may produce a more optimum spacing for fixing than as presented in this document. For profiles such as Eurostyle® panelok® that is particularly applicable and as such the manufacturer's information should be used. Manufacturers' recommendations for maximum spacings are as per the MRM COP.

Eurostyle® panelok® panels must be fixed into **all** nogg/girt lines and top/bottom plates.

WIND LOADINGS

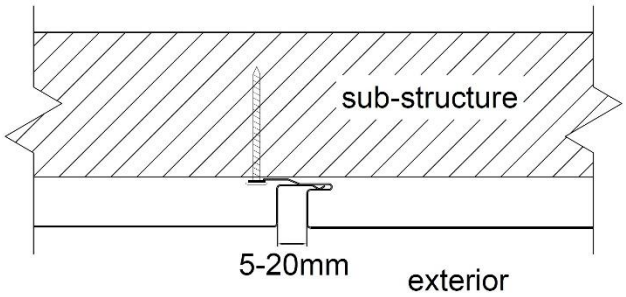
Firstly, it is necessary for the designer to calculate the design wind load for the cladding following acceptable practice, by reference to AS/NZS 1170, and/or NZS 3604 as appropriate. For further explanation of this refer to the MRM COP.

The wind suction forces on Eurostyle® panelok® cladding are transferred through to the building via the fasteners into the structure. The performance criteria are the number of fasteners per square metre, which can be varied by the spacing of the battens/noggs/girts, and/or the width of the panels.

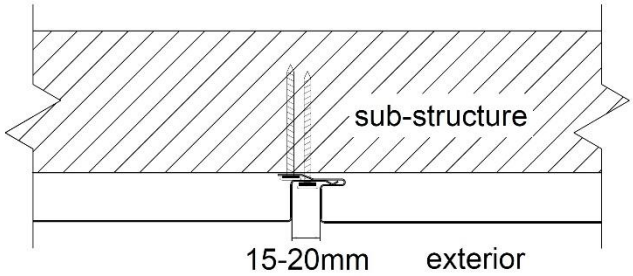
WIND ZONES

Eurostyle® panelok® is typically screw-fixed through the flange extending from the female part of the clip-lock joint only, which provides a 'secret fixed' appearance with no visible fixing.

Where required, the profile is also screw-fixed through the pan (i.e. both male and female legs of the lap) with wafer head fixings including a neoprene sealing washer, as fixing through the pan provides additional integrity to the clip-lock connections between panels. In this case the minimum shadow line for the negative detail is 15mm. The following sketches are provided for 'Secret Fixed' and 'Additional Pan Fixed' options.



Secret Fixed



Additional Pan Fixed

The following table outlines guidance for Eurostyle® panelok® fixing requirements for buildings within the scope of NZS 3604 and NASH standards, for up to Extra High Wind Zones. SED Wind Zones require specific design by a suitably qualified structural engineer, contact Roofing Industries for guidance.

Guide to Maximum Wind Zone for Secret Fixed option

Nogg/Girt Spacing (mm)	Panel Face Width (mm)		
	215	265	400
400	Extra High	Extra High	Extra High
600	Very High*	High*	N/R*
800**	Medium*	Medium*	N/R*

N/R = Not Recommended Maximum 150mm allowable sheet overhang (from last fixing line to sheet end)

*Additional Pan Fixed option required to achieve Extra High Wind Zone.

**For buildings within the scope of NZS 3604 using, a.) cavity construction, a maximum batten spacing of 800mm is recommended to balance aesthetics and practicality, or b.) direct fixed vertical sheeting, using E2/AS1 as guidance for direct fixed profiles, a maximum nogg/girt spacing of 480mm is required to comply with E2/AS1 Clause 9.1.1.5.

Please note for 265mm and 400mm outside face widths, a continuous 50mm wide blocking strip of thickness to suit the panel depth is to be installed down the middle of the back of each panel to support the outside face.

INSTALLATION IN HIGH, VERY HIGH AND EXTRA HIGH WIND ZONES

In strong and/or adverse wind conditions, the cladding may “flutter” which may cause a “drumming” noise. For High Wind Zones and above, Roofing Industries recommends consideration be given to the following to help mitigate potential wind noise:

- Use continuous 50mm wide blocking strips of thickness to suit the panel depth, installed down the middle of the back of each panel to support the outside face
- Reduce the nogg/girt/batten spacings to 400mm maximum centres
- Including optional swages in the pan
- Only install into timber when the moisture content is 18% or less (i.e. the maximum moisture content as specified in NZS 3604 and the MRM COP)
- For wall cladding, use approved drained battens such as castellated timber batten, approved proprietary drained steel or plastic battens

FIXINGS

Wall claddings are typically fixed through the pan of the profile. Eurostyle® panelok® is fixed with screws through the flange extending from the female part of the clip-lock joint. There are no penetrations through the weather-exposed parts of the profile.

Additional screw fixing using wafer head fixings with a neoprene washer through the Eurostyle® panelok® pan provides additional integrity to the clip-lock connections between panels. Where fixings penetrate the weather-exposed part of the profile, the neoprene washers mitigate the risk of water penetration. Refer to Wind Zones section.

Konnect Ruspert (TT10-12X65CL4WASQ2GRU) fixings, Konnect T17 Timber (TT10-12X50CL5N) fixings incorporating a low-profile hex. head or 10g-12 x 45mm wafer head fixings are used with minimum 30mm embedment into structural timber battens or timber framing, adjusting fastener length where non-structural battens are used to account for batten thickness etc. Note for 10g-12 x 45mm, 10g refers to a 10-gauge screw, where 12 refers to 12 threads per inch (TPI) and 45mm is a 45mm long shank.

When fastening into other structural materials, contact Roofing Industries for specific advice.

DIRECT FIX

Eurostyle® panelok® must be isolated when laid directly on timber battens, plywood or other incompatible materials using a suitable isolator in-between.

Green (or wet) timber contracts as it dries, resulting in shrinkage. Only install into timber when the moisture content is 18% or less (i.e. the maximum moisture content as specified in NZS 3604 and the MRM COP).

Be aware that the temperature build-up of dark colours is higher than those of lighter colours and as a result darker colours will thermally expand more which can also cause noise and canning. Refer to the MRM COP for further information on noise.

The MBIE Guide to Tolerances document for cladding advises that noise from thermal expansion is normal and should be expected. Refer to MBIE - Guide to Tolerances, Materials and Workmanship in New Residential Construction.

SHEET ENDS

For vertical panel installation, stop end the top of the panel, and at the bottom use a 15mm 90-degree turnback. Where horizontal panel installation is being considered, contact Roofing Industries for specific advice.

PROFILE SIDE LAPS

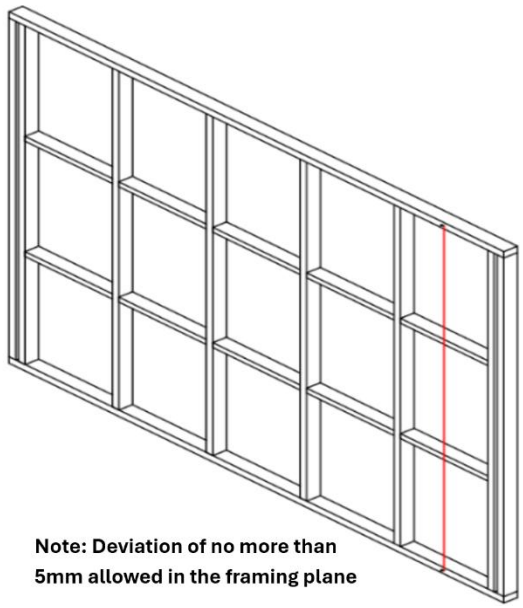
The side lap is formed by the clip-lock connection between panels, where a formed metal tongue is fitted into a matching female part. The joint incorporates a capillary break that provides a drainage path down the lap joint for moisture. Should water pass across the capillary break it would track to the fixing flange, draining down the face of the fixing flange rather than onto the wall underlay. In the unlikely event that external moisture did migrate to the underlay, the underlay characteristics are such that the framing is protected.

MOUNTINGS ON EUROSTYLE® PANELOK®

Any structures or components mounted onto Eurostyle® panelok® wall cladding for example (but not limited to) awnings, louvres, light fixtures, signage and the like need to be designed accordingly by a suitably qualified structural engineer and installed in accordance with that design.

Consideration shall also be taken to any impact on the weathertightness and durability of the wall cladding.

FRAME TOLERANCE



It is important that the structure is suitable for the installation of wall cladding.

Particular attention should be paid to the squareness of the structure and alignment of the studs, noggs and framing, which is required to be within acceptable tolerance.

Prior to installation, the installer is to consider sheeting set out, for example to accommodate windows, doors, and penetrations. During installation, the installer must check alignment of the framing using string line or a straight edge, particularly around penetrations to ensure the wall cladding is plumb and true.

Where sheets are cut, for example to accommodate corners and around penetrations etc. they require packers to support the flashings.

Eurostyle® panelok® laid directly onto cavity battens requires alignment of the studs, noggs and framing to be within a 5mm tolerance to mitigate batten creasing.

CANNING

Canning is the visible waviness or undulations in the flat areas of metal cladding or wide flat panel flashings. This phenomenon occurs due to differential stresses which build up in the material, and as these stresses are relieved, undulations form leading to the characteristic waviness associated with canning.

The apparentness of these undulations can be affected by several factors such as the angle of viewing, direction and clarity of the light, sheet length, colour, temperature and the thickness of the material; some degree of distortion is inevitable in thinner gauge materials.

In addition, the high gloss levels of brand-new sheets can highlight these undulations but with time natural weathering reduces reflectivity which in turn reduces the visible effect of canning. Low gloss paint finishes are recommended.

The property/building owner, builder and specifier must be aware that these undulations can occur in the flat areas of profiles. Please note canning is aesthetic in nature only and in general does not pose any structural issue or affect the performance or material warranty of the cladding.

The following material factors can assist in reducing the apparentness of canning,

- Use of thicker gauge materials
- Inclusion of stiffening swages
- Limiting the width of flat elements

Attention to detail during installation is also key to reducing canning, and it is important to inspect the alignment of the structure, check sheeting for straightness prior to installing, and ensure sheeting is fastened to Roofing Industries recommendations and industry standards. Refer to Handling, Storage and Installation section.

STRIPPABLE FILM

Eurostyle® panelok® is supplied with strippable film to give temporary protection from scratching. Strippable film should be removed from underlaps while laying and removed entirely before UV sets the adhesive, making it difficult to remove without leaving glue residue on the sheet. Traffic across sheets should be kept to a minimum, particularly with self-supporting products.

HANDLING, STORAGE AND INSTALLATION

The following points, although not exhaustive, provide practical guidance to product handling storage and installation -

- Read the pack label for important guidance and inspect packs for any damage.
- Store Eurostyle® panelok® packs and accessories on site using evenly spaced and supportive dunnage, clear of the ground and under cover, to keep dry.
- Product surface protected with strippable film is to be stored under cover, away from UV light.
- If packs become wet and the product is not used immediately, separate the sheets to allow air circulation and drying.
- Do not drag sheets across each other or across rough surfaces.
- Other trades should be made aware of this by the main contractor.
- Installation is to be undertaken by suitably qualified installers experienced in the type of work being carried out, in line with acceptable trade practice.
- Flashings should be notched over the ribs, and all sheeting should be edge fixed.
- Refer to the Eurostyle® panelok® drawings at www.roof.co.nz

For further guidance refer to Roofing Industries Handling and Storage Guide, E2/AS1, the MRM COP and MRM Metal Long Run Roofing and Cladding Installation Guide. Failure to install all products to industry requirements may void the warranty.

MAINTENANCE

Regular maintenance should be performed as necessary to remove dirt, salt and pollutants extend the life of the cladding and accessories. Industry maintenance guide(s) are available from www.roof.co.nz and should be consulted in order that warranty conditions are fulfilled.

BRANCHES

Branch	Address	Phone	Email
Auckland	(Head Office) 5 John Glenn Avenue, Rosedale, Auckland 0632	(09) 414 4585	auckland@roof.co.nz
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Invercargill	133 Bill Richardson Drive, Avenal, Invercargill 9810	(03) 218 7663	invercargill@roof.co.nz

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