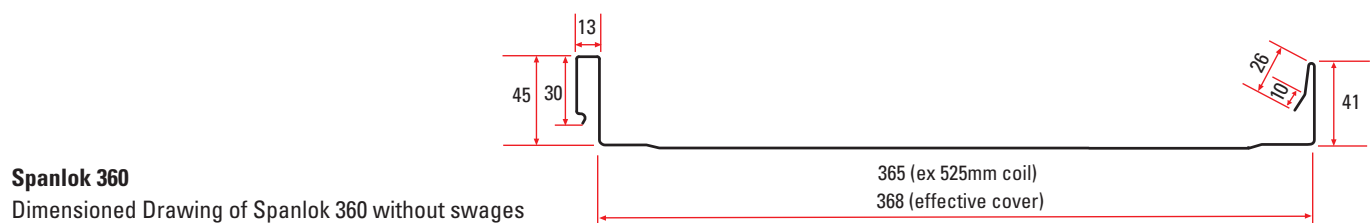
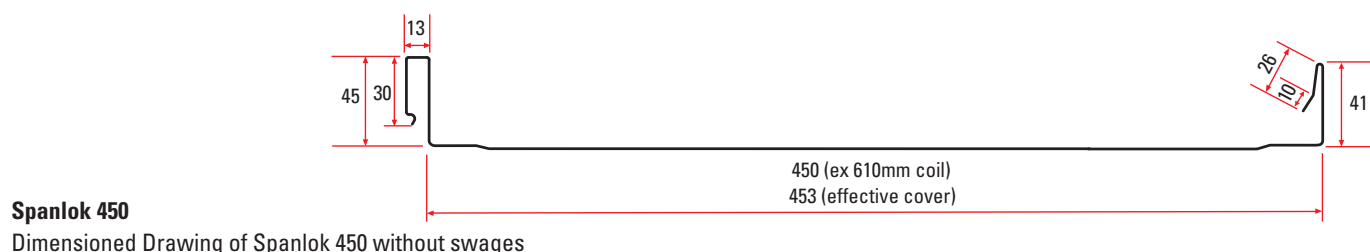
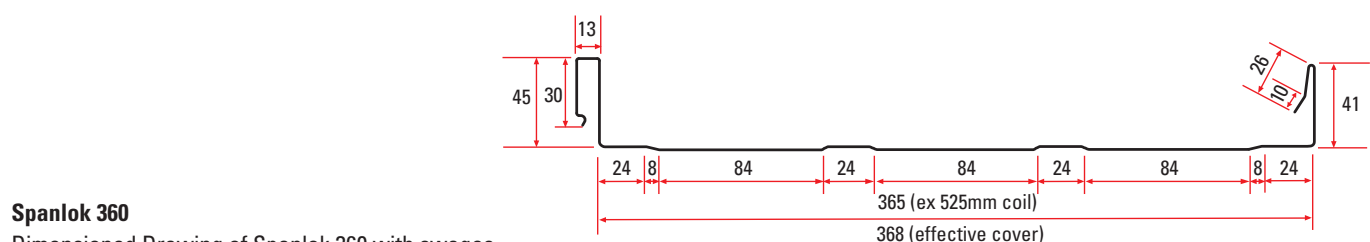
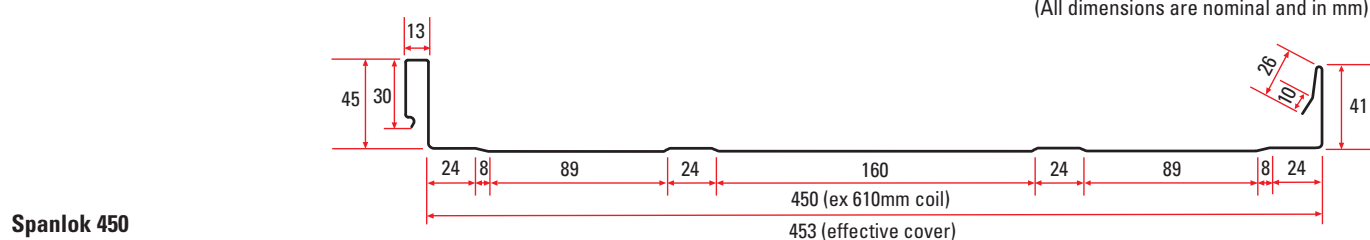




PROFILE TECHNICAL SUMMARY

(All dimensions are nominal and in mm)



Description

Eurostyle Spanlok is the very latest wide tray roofing and walling system incorporating superior technology, with even greater wind loading capacity. Suitable for roof pitches down to 3° and with a profile height of 45mm it is arguably the most superior roof of its class.

Designed to be self supporting on purlins or girts it provides the very latest in architectural design at an economical price. Eurostyle Spanlok is manufactured principally for the North Island.

Branches: • Whangarei • Auckland • Pukekohe • Hamilton • Taupo • Tauranga • Palmerston North
• Wellington • Christchurch • Cromwell

EUROSTYLE SPANLOK ROOFING AND CLADDING

Design Considerations

The designer should take into account the following factors when specifying Eurostyle Spanlok:

- Preferred pan width
- Material type and finish
- Roof pitch
- Sheet lengths
- Wind Loadings (Refer to Wind Loadings Section)
- Snow design
- Reference to our detail drawings
- Swaged or non swaged
- Purlin spacing

Wide tray type roofing and walling profiles due to their inherent nature of a flat pan without the use of structural ribs can give rise to undulations in the wide flat pan. These are considered to be an architectural feature of the profiles. Normally, structural integrity is not affected. However, structural integrity must be reviewed if the distortion results from an extreme external influence. Since many uncontrollable factors are involved, Roofing Industries can not realistically assure the total elimination of undulation in the pan. Eurostyle Spanlok can offer the use of a double swage in each pan as an architectural feature which assists in eliminating this if required. Inclusion or exclusion of swages must be specified at the

time of order. Different swage options, including single swage, are also available on request. A clip relief swage at the pan edges is supplied standard unless otherwise requested.

Low gloss paint coatings are also available which assist in minimising any undulations but must be specified at time of coil ordering.

Penetration flashings for Eurostyle Spanlok must be installed by the Eurostyle Spanlok installation contractor only and other trades must not cut any holes unless under the supervision of the roofing contractor. The placement of penetrations should ensure that they do not interfere with the panel joints.

Eurostyle Spanlok falls outside the scope of E2/AS1 and is to be designed and installed to the manufacturers recommendations. Options apply around flashing details so these are best discussed with your local installer.

- Manufactured custom cut to length subject to transport and site limitations.
- Eurostyle Spanlok can be manufactured at our local branch or in cases where access or transportation is an issue can be manufactured on site.
- As sheet lengths increase higher transportation costs may be applicable.

MATERIAL RECOMMENDATIONS & STANDARD PAN WIDTHS TO SUIT STANDARD COILS

The use of the following sizes minimizes waste and cost and generally shortens lead times.

However other sizes are available and if other than standard sizes are required contact Roofing Industries for specific advice

Profile	.55 Plain and Prepainted Steel	0.90 Plain and Prepainted Aluminium	0.70 Copper Aluminium
Eurostyle Spanlok 450	450mm	445mm	N/A
Eurostyle Spanlok 365	365mm	N/A	335mm

The above pan widths are based on standard coil widths and are a nominal sizes only.

Material availability is subject to available stock and some material such as copper may have lead times of 3-4 months. For all other materials such as Titanium Zinc refer to Roofing Industries. All measurements are nominal. N/A - Not Readily Available

MINIMUM PITCH

The minimum pitch for Eurostyle Spanlok is 3°

Notes

- Minimum pitch may be affected by snow loadings in areas subject to snow. Refer to Roofing Industries
- Any transverse seams should be soldered or sealed in high or very high wind design load areas at pitches less than 20 degrees
- The building design pitch may need to be higher to take into account any cumulative deflections of the frame, purlin and roof sheeting.
- With curved roofing the roof cladding must not terminate at a pitch lower than permitted above. For any curved roof situation contact Roofing Industries prior to design.
- Refer to NZ Metal Roof and Wall Cladding Code of Practice for cross welt details and limitations.

SUBSTRATE

Eurostyle Spanlok Roofing and Cladding is secret fixed designed to be self supporting on purlins or girts and panels are joined by clipping and locking and do not have any external through fixings. Purlins are generally 75 x 50 or 100 x 50 purlins on the flat, fixed in accordance with NZ Building Regulations. It can also be laid over a continuous plywood substrate which is structurally fixed to the frame.

For aluminium or copper Spanlok the use of a plywood substrate is recommended.

If plywood is used it must be smooth, dimensionally stable and with a moisture content of <18% (generally CPD) and a minimum thickness of 15mm.

It must be H3.2 treated using a water based system, and of Stress Grade F11. A 2-3 mm expansion gap must be provided between sheets. Ventilation gaps to be provided at ridge, abutments and soffit areas.

Generally for 15mm plywood and rafters at 900mm centres the purlin spacing to which the plywood is fixed should be at 800mm centres and nogs provided to all sheet ends and edges (Not required on

edges if tongue and groove system used). With 17mm ply the purlin spacings may be increased to 900mm. Fixings for the plywood should be a minimum of 8g x 40mm for 15mm plywood and 10g x 40mm for 17.5mm plywood.

They must be countersunk screws manufactured from corrosion resistant material such as stainless steel fixed at 150mm centres to the perimeter of the sheet and 300mm to intermediate purlins. Fixings must not be closer than 10mm to sheet edges or 15mm when tongue and groove edges are used, and must not protrude above the surface.

Closer fixing centre may be required on high wind load areas such as gable ends. The plywood should be laid in a staggered pattern with the face grain at right angles to the supports.

The above is a guide only and reference should be made by the designer to the NZBC and plywood manufacturers technical information.

In some cases increased or decreased support spacing may be applicable depending on wind loads.

PURLIN AND GIRT SPACINGS

Recommended purlin and girt spacings are contained in the table below. Reference should also be made to the Wind Loading Section as this may limit purlin and girt spacing.

	Roof	Walls
Intermediate Span	600mm	1200mm
End Span	600mm	900mm

The size of purling shall generally be taken from NZS 3604 section 10, using spacing to suit the spanning capability of the cladding.

WIND LOADINGS

It is first necessary for the designer to calculate the design wind load for the roofing and cladding in accordance with generally acceptable practice, by reference to AS/NZS 1170, and/or NZS 3604 as appropriate. For a fuller explanation of this refer to the NZ Metal Roof and Wall Cladding Code of Practice.

The uplift forces on Eurostyle Spanlok roof and cladding are transferred through the building via the clips and fasteners to the structure. The performance criteria is the number of clips or fasteners per m², which can be varied by the spacing of the purlins and clips, or the width of the panels.

To improve the uplift resistance of Eurostyle Spanlok roof and cladding the design options are:

- To reduce the width of the end bays
- To place the clips and fasteners closer together with the latter being the standard option.

This requires extra clips and fasteners around the periphery because of the increased wind load on all buildings as required by the local pressure factor (K₁). Additional clips and fasteners are also required in exposed situations subject to high wind design load areas.

In these areas consideration should also be given to reducing the maximum gable or verge panel width.

Purlin spacing and ultimately the number of secret fix clips and fasteners per lineal metre and ultimately per m² for Eurostyle Spanlok roofing and cladding must be derived from the following graph compiled as a result of testing as per the NZMRM Metal Roof and Wall Cladding Code of Practice.

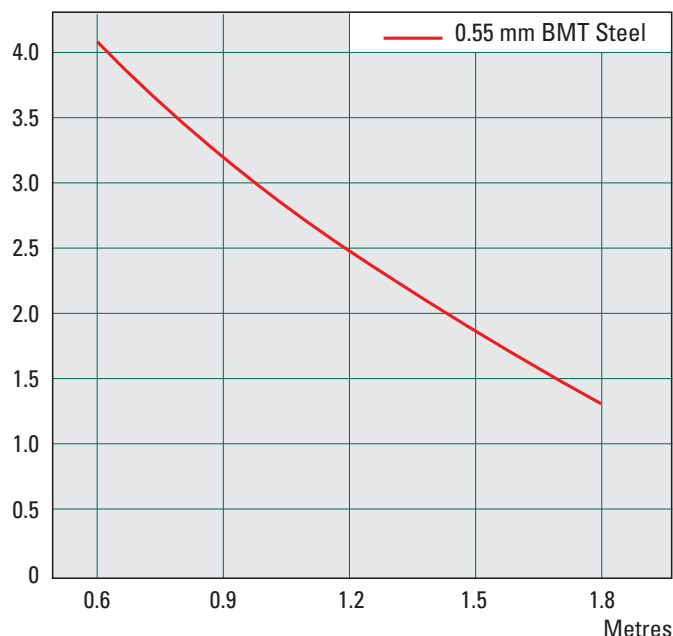
When fixing to a plywood substrate clips should be at or maximum spacing of 400mm.

It should be noted that for point load purposes when a roof can be walked on that purlin spacings should be at a maximum of 600mm unless otherwise approved by Roofing Industries. Spacing of clips for wind load only may be greater in accordance with the graphs but this should be done with caution to avoid any vibration to unclipped purlins.

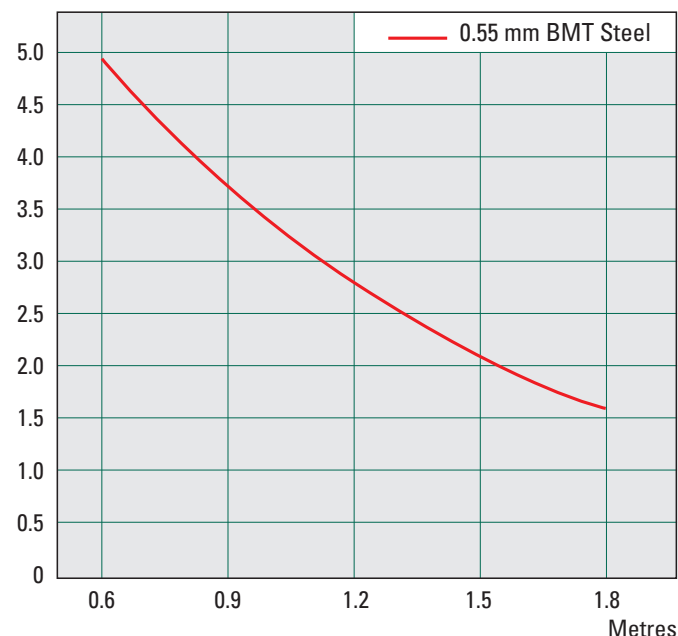
WIND LOAD DESIGN GRAPH

Roofing & Wall Cladding - Steel Based Material

kPa .55 Steel Based Material - 450mm Pan width



kPa .55 Steel Based Material - 365mm Pan width



Intermediate span in metres. End spans to be 2/3 of intermediate span. Intermediate span of 600mm can also use end span of 600mm. Testing confirms that .90mm Aluminium has similar results to .55mm Steel as shown above and these graphs can also be used for .90mm Aluminium loadings.

INFORMATION TABLE

Substrate Material	Steel	Aluminium	Copper
Thickness	.55mm	.90mm	.70mm
Aprox weight (Kgs) per lineal metre for 450mm pan	2.80	1.55	
Aprox weight (Kgs) per lineal metre for 365mm pan	2.40	N/A	3.10
Effective Cover for Standard Pan (mm) (Nominal)			
Eurostyle Spanlok - 450mm pan	453mm	448mm	N/A
Eurostyle Spanlok - 365mm pan	368mm	N/A	338mm
N/A = Not Readily Available			

Specifications

Refer to our Full Specification on Masterspec™ and/or Smartspec™, our website, or our Selection Guide.

Ventilation

Eurostyle Spanlok like any metal roof must have provisions for ventilation of the roof space to allow condensation to dissipate.

Ventilation should be provided at the eaves and ridge. Where a plywood substrate is used a ventilation space of 40mm minimum is recommended below the plywood with air flow to eaves and ridges.

An underlayment provided called Thermakraft Drainage Mat can also be used which provides a thin layer of scrambled nylon between the plywood and Eurostyle Spanlok to allow ventilation to occur.

Ventilation is particularly important with skillion type roofs.

Roof expansion provision

Thermal movement across the pan is taken up by the provision of a small gap at the base of the profile. Linear expansion is accommodated by the profile sliding on the clips.

Underlay

A breather type underlay is recommended under the roof and wall cladding. A self supporting grade is recommended due to its heavier grammage providing greater tear resistance and separation qualities. Thermakraft 407 is the recommended underlay for roofing.

PRIMARY FIXING CHART

Eurostyle Spanlok should be fixed in accordance with the following chart into the primary structure at purlin and girt spacing derived from the Windload Design Graph.

Product	Material	Clip Material	Screw Type Approved Timber Type	Screws per clip
Eurostyle Spanlok	Steelbased	Galvanised or Zam	10-12 x 45mm Class 4/5	2
	Aluminium	Stainless Steel	8g x 45mm Stainless c/s Sq. Drive	2
	Copper	Stainless Steel	8g x 45mm Stainless c/s Sq. Drive	2

Note: When fixing to a plywood substrate 8g x 25mm screws otherwise as above should be used and into the primary structure where possible with fixing clips as above.

Installation

Installation should be undertaken by experienced Eurostyle installers. Soft rubber soled shoes should be worn and foot traffic should be in the pan of the profile and on purlin lines. Other trades should be also be made aware of this by the main contractor.

Flashings should be notched over the ribs and all sheeting should be edge fixed. Packs on site should be kept dry and stored above ground level. If sheets become wet they should be fillet stacked to allow drying.

Maintenance

Maintenance should be performed as necessary to remove dirt, salt and pollutants in accordance with warranty conditions. In severe environments more regular maintenance may be necessary.

For further information on Eurostyle Spanlok roofing and cladding refer to the NZ Metal Roof and Wall Cladding Code of Practice, www.metalroofing.org.nz
Also refer to our suite of detail drawings available via www.roof.co.nz, NZ Steel Ltd, Pacific Coilcoaters Technical Helpline 0800 844 822, Ambro Metals Ltd and Mico Metals literature.

EUROSTYLE SPANLOK™