



Metalcraft
Roofing



ESPAN[®]
Installation
Guide



BEST PRACTICE GUIDELINES

Installation of Espan® should be carried out in accordance with the MRM Code of Practice, for secret fixed profiles. Whomever undertakes installation of Espan® must make themselves aware of the requirements of this document.

Any question pertaining to these requirements and also the additional requirements as per Metalcraft Roofing's - Espan® installation Guide should be discussed with Metalcraft Roofing prior to installation of Espan®. The MRM Code of Practice can be downloaded from www.metalroofing.org.nz

OIL CANNING

Oil canning is an inherent characteristic of cold formed metal products, particularly products with broad flat areas like Espan®. It is seen as waviness or distortion in the flat surfaces. Oil canning does not affect the products strength or performance but can attract comment from customers.

We recommend that the architect, builder and homeowner are made aware at point of sale that oil canning may affect the overall aesthetic outcome. Oil canning may occur during the roll-forming process and or during installation and where thermal expansion occurs.

The end result of the profile is dependent upon the quality of the substructure that supports it. It is critical that the roof purlins be square and level for optimum results.

Please refer to MRM NZ Metal Roof and Wall Cladding Code Of Practice - Section 2.3.5 for more information.

Espan® clips lap over the espan® profile and bracket marking should be expected and deemed acceptable.

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Refer also to MBIE -Guide to tolerances, materials and workmanship in new residential construction 2015 which advises oil canning is a common occurrence with products which have standing seams or wider profile patterns. This is not considered a defect and will become less apparent with weathering.

ROOF NOISE

The homeowner should be aware that temperatures of dark colours are higher than those of lighter colours. Darker colours will thermally expand more. Thermal expansion of metal roofs is covered in the MRM Code of Practice.

The MBIE document on roof 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 2015.

The Installer must take care when fixing into cavity battens to ensure the fixings are not over tensioned and that the fixing clips are positioned centrally.

BEST PRACTICE GUIDELINES

SOLAR ENERGY PANELS

Clip on solar panels can be installed on both Espan® 340 or Espan 470® with a COLORSTEEL® ENDURA® coating.

Please refer to the solar brochure for more information.
www.metalcraftgroup.co.nz

SOLAR PV LAMINATE STRIPS

Solar PV Laminate strips are available that adhere directly to the roof surface.

They are only compatible with Espan®470 and must be used on COLORSTEEL® MAXX® surface to validate NZS warranty.

Strip length is 6m and cannot be shortened so this is the minimum sheet length required.

Junction box is to be covered by ridge flashing and the cables are run in a cable tray flashing underneath the ridge flashing so allowance must be made between the heads of the sheets to accommodate this. Please consult with Metalcraft Roofing for a detail.

The two part ridge flashing is preferable for use with PVL strips.

Metalcraft can provide full supply and installation services for this if required; or supply only, the product/associated hardware, but be aware that a registered electrician is required to connect them to mains supply.

COLOURS

Espan is available in 20 standard colours from New Zealand Steel in trusted brands: COLORSTEEL® ENDURA® and COLORSTEEL® MAXX®. Colour brochures and steel swatches are available on request.

WARRANTIES

The correct grade of material for use in various environments is given in the New Zealand Steel Environmental Guide. Material warranties are closely linked to environmental categories. The NZ Steel Environmental Categories Brochure gives a guide to the classification of the environmental categories and the associated warranties that the various material finishes are given.

Please contact your local Metalcraft Roofing branch to request a brochure if you have any questions relating to which product to use in a particular location.



COLORSTEEL
maxx

COLORSTEEL
endura

INSTALLATION GUIDELINES

HANDLING AND STORAGE

Detailed information is included in the New Zealand Steel Installers Guide. Important considerations are as follows:

- Site Storage which ensures sheets are dry & ventilated.
- Reducing risk of surface damage to surface coatings during handling, installation and by other trades.
- Ensuring that spans and pitches used are not outside those recommended by Metalcraft Roofing.
- Ensuring that correct and sufficient fasteners are used.
- Installation in contact with incompatible materials is avoided.

PRE - INSTALLATION CHECKS:

Espan requires a level substrate and prior to installation of Espan®, this is critical and the installer must:

Check Timber Work:

Installer must check timber or steel work is level. Any risk of deviation will give rise to and result in increased oil canning and roof noise. Use a string line to check.

Roofing should not be fitted if moisture content exceeds 18% Max. Refer MRM Code of Practice.

INSTALLATION OF CANTERBURY PRICKLES:

Canterbury prickles can be installed on roofs down to 5 degrees. To install, drill through both sides of each rib at the base along the line of the ridge. Cut through each rib to the drill hole and fold the deck (sheet) over solid supportive blocking at the ridge. Fit the sheets at purlins adjacent to the ridge allowing for thermal expansion at the ends. Fill the Canterbury prickles with silicone sealant, fit them over the ribs and pop-rivet through each side of the rib.

Refer to MRM code of practice and Metalcraft Roofing's installation details.

INSTALLATION:

Clip Spacings:

Clip spacings and fixings are dependent on design loads and as per Metalcraft Roofings - loadspan tables.

These can be downloaded from www.metalcraftgroup.co.nz.

Clip Installation:

Clips should be laid progressively with sheets. Do not pre-install clips as this will likely result in problems.

Set Out Barge Spacings:

Consider barge spacings for an even finish to barge flashing cover to both sides.

Take Care:

Take care when fixing into cavity battens to ensure the fixings are not over tensioned and that the fixing clips are positioned centrally.

Cavity battens should not be crushed and the installers must take care when fixing.

Crushed cavity battens will give rise to and result in increased oil canning and roof noise as it will restrict the free movement of Espan® when subjected to thermal expansion and contraction.

Straight Alignment:

Ensure straight alignment of fixing clips and ensure the first Espan® sheet is aligned. Particularly important if cavibatts are used as the clips can slip off side of batten. Use a stringline to set position of clips in relation to gutterline for accuracy.

Installation Details and Flashings:

Espan® should be Installed as per consented drawings and as per MRM Code of Practice.

For Flashing details and installation details recommended by Metalcraft Roofing visit: www.metalcraftgroup.co.nz

Stopends and Turn Ups:

Stopends - Use only approved Metalcraft Roofing stopend tools and Turn Up and Turn Down Tools. A minimum 30mm stopend height is required for Espan®.

Stopend Tools are available to order from Metalcraft Roofing and a video demonstrating how to create a stopend can be viewed in the video section of Espan® 340 and Espan® 470 product pages on:

www.metalcraftgroup.co.nz

FIXING GUIDELINES

ESPAN® CLIPS

Espan® clips are manufactured out of zincalume® and fixed directly onto the purlins at recommended spans depending on thickness and wind loadings. The purlins must be parallel with the espan ribs.

When using Espan® 340 or Espan® 470 in Aluminium espan clips need to be powder coated as a precautionary measure. Clips are available to order from Metalcraft.



FASTENERS

Fasteners need to be sourced from Metalcraft Roofing as the selection of the appropriate fastener is essential to the performance of the roof. The durability of the fastener should be, as a minimum requirement, equal to that of the roofing or cladding.

The installer should not deviate from the recommended fasteners without prior consent from Metalcraft Roofing as other fasteners might compromise the product performance and warranty.

The fastener length is dependent on the installation details and will increase if installation is required through a cavity batten into the supporting structure behind.

FASTENER REQUIREMENTS

For timber use 10 - 12G x 45mm wafer head square drive. Increase length of screw to accommodate a 20mm drained or vented batten: 10 - 12G x 65mm wafer head square drive.

Fasteners to be ordered from Metalcraft Roofing.

FIXING INTO TIMBER

The Installer must allow a minimum of 35mm penetration into the purlins when selecting the correct fixing lengths. When cavity battens are used the length needs to increase to ensure the minimum embedment of 30mm is maintained. Cavity battens are not Structural and are insufficient to support the fixings.

FIXING INTO CONCRETE

Fixing metal cladding directly into concrete is not permitted due to corrosion and compatibility issues. The installation of structural timber battens with a minimum depth of 50mm is required. These timber battens are engineered and fixed into the concrete by others.

FIXING INTO STEEL

Length of fasteners into steel should allow for 5 - 6mm beyond the drill point with a minimum of 3 threads beyond the drill point.

Please note that steel structure when used in insulated buildings will require a thermal break and the use of EPS thermal break strips is not recommended as they are likely to crush when fixing Espan® clips and increase the occurrence of oil canning and or roof noise.

Espan® requires a flat substrate - refer to installation pre-check section in this booklet for more information.

Loadspan and fixing tables are available to download www.metalcraftgroup.co.nz

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For more information on Metalcraft Roofing visit: www.metalcraftroofing.co.nz

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United Industries visit: www.unitedindustries.co.nz.



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