

PRODUCT NAME

Metalcraft Roofing - **Espan® 470**

PRODUCT LINE

N/A

PRODUCT DESCRIPTION AND ITS INTENDED USE

Metalcraft Roofing’s Espan® 470 profile is a tray roofing and vertical wall cladding profile manufactured using steel sourced from New Zealand Steel which is roll formed.

Espan® 470 is manufactured with swages as standard for roofing. For vertically laid wall cladding swages are optional. Espan® 470 can be formed from a variety of substrates to meet durability, formability, and aesthetic requirements.

Espan® 470 is installed with a concealed clip system. espan® clips are manufactured out of zinc/aluminium alloy and are fixed directly onto the purlins or through cavity battens into purlins at recommended spans depending on thickness and wind loadings.

When using Espan® in aluminium the Espan® clips need to be powder coated as a precautionary measure.

ESPAN® STANDARD CLIP
Suitable for all roofing applications. Suitable for wall applications that allow greater than 5% coreflute cushioning tape.

ESPAN® C3 CLIP
Suitable for wall applications that require less than 5% coreflute cushioning tape.

Indicative 3D renders



INTENDED USE

Metalcraft Roofing’s Espan® 470 profile can be used as a roofing or vertically laid cladding component for residential and commercial applications. Installation is suitable for timber and or steel structures.

Metalcraft Roofing’s Espan® 470 profile can be used with various Metalcraft COLORSTEEL® flashings, gutters and fascias. They are ordered typically along with the required fixings, underlay and sealants.

MATERIAL OPTIONS:

COLORSTEEL® ENDURA® (Also available with COLORSTEEL® ENDURA® DRIDEX®)
0.55mm BMT G300.
0.55mm BMT or 0.75mm BMT G300 for flashings.

COLORSTEEL® MAXX® (Also available with COLORSTEEL® ENDURA® DRIDEX®)
0.55mm BMT G300.
0.55mm BMT or 0.75mm BMT G300 for flashings.

COLORSTEEL® ALTIMATE®
0.90mm Aluminium 5052 H36 for roll-forming.
0.90mm Aluminium 5005 H34 for flashings.

For more information on COLORSTEEL® refer www.colorsteel.co.nz

Above thicknesses are the nominal base metal thickness rather than the total coated thickness.

BPIS INCLUSION / EXCLUSION

This BPIS includes Metalcraft Roofing’s Espan® 470 profile concealed clips and associated flashings and other items manufactured by Metalcraft Roofing. Metalcraft Roofing do supply fasteners, underlay and other products as part of the roofing supply, however demonstration of compliance of these items are not the responsibility of Metalcraft Roofing. Please refer to: Other products supplied by Metalcraft Roofing for a list of those items and links to manufacturers.

PRODUCT IDENTIFIER

ESPAN® 470

Minimum Pitch: 3 degrees after deflection
Applications: Commercial and residential.
Orientation: Roofs and vertical wall cladding.
Swage Requirements: Roofing: Espan® 470 is manufactured standard with 2 swages, in the pan. The swages are discreet and provide for extra rigidity and strength; this is important in reducing the prospect of wind driven roof noise. The swages also assist with making oil canning less evident.

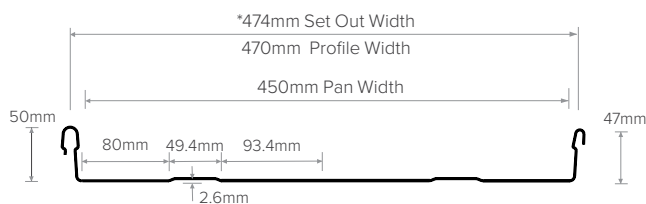
Espan® 470 wall cladding does not require swages.

Swage Removal: Metalcraft Roofing will consider removing swages on Espan® 470 roofing on a case by case basis but only in wind zones up to Medium.

ESPAN® 470 - FLAT



ESPAN® 470 - SWAGES



Profile dimensions are nominal and may vary depending on material. Profile dimensions are not set out dimensions.

RELEVANT BUILDING CODE CLAUSES:

B1 STRUCTURE

B1.3.3 (a, b, c, g, h,j)

B2 DURABILITY

B2.3.1 (b(i))

C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE

C3.4 (a), C3.7 (a)

E2 EXTERNAL MOISTURE

E2.3.1, E2.3.2

F2 HAZARDOUS BUILDING MATERIALS

F2.3.1

G12 WATER SUPPLIES

G12.3.1

STATEMENT ON HOW THE BUILDING PRODUCT IS EXPECTED TO CONTRIBUTE TO COMPLIANCE:

Metalcraft Roofing's Espan® 470 profile, concealed clips and associated flashings used in combination with clip fasteners and underlays accredited by NZMRM as complying to their products performance standards, will contribute to meeting the following performance requirements of the NZ Building Code.

B1.3.3 (a, b, c, g,h,j)

Metalcraft Roofing has conducted testing and analysis on the Espan® 470 profile, in accordance with procedures described in NZMRM -Metal Roofing and Wall Cladding Code of Practice.

Loadspan and fixing patterns are available for download from www.metalcraftgroup.co.nz

B2.3.1 (b)(i)

Metalcraft Espan® 470 profile and associated flashings are manufactured from steel from NZ Steel:

Espan® 470 Profile:

COLORSTEEL® ENDURA® (Also available with COLORSTEEL® ENDURA® DRIDEX®)

Steel substrate may be either G300 or G550 consistent with AS 1397. Metallic coating is AZ 150 consistent with AS 1397:2021. COLORSTEEL® ENDURA® is Product Type 4 consistent with AS/NZS 2728:2013 and therefore is consistent with the NZ Building Code for use in environments as described in Acceptable Solution E2/AS1 Table 20. Tolerances are consistent with the requirements of AS/NZS 1365:1996.

COLORSTEEL® ENDURA DRIDEX® is a Type 4 product in accordance with AS/NZS 2728:2013 and therefore is consistent with the NZ Building Code for use in environments as described in Acceptable Solution E2/AS1 Table 20.

COLORSTEEL® MAXX® (Also available with COLORSTEEL® MAXX® DRIDEX®)

Steel substrate may be either G300 or G550 consistent with AS 1397. Metallic coating is AZ 200 consistent with AS 1397.

MAXX® is Product Type 6 consistent with AS/NZS 2728:2013 and therefore is consistent with the NZ Building Code for use in environments as described in Acceptable Solution E2/AS1 Table 20. Tolerances are consistent with the requirements of AS/NZS 1365:1996.

COLORSTEEL® MAXX DRIDEX® is a Type 6 product in accordance with AS/NZS 2728:2013 and therefore is consistent with the NZ Building Code for use in environments as described in Acceptable Solution E2/AS1 Table 20.

COLORSTEEL® ALTIMATE®

Aluminium substrate is in accordance with AS/NZS 1734:1997 covering chemical composition, mechanical properties, and allowable tolerances on dimensions. Altimate® is a Type 6 product in accordance with AS/NZS 2728:2013 and therefore is consistent with the NZ Building Code for use in environments as described in Acceptable Solution E2/AS1 Table 20.

Refer also to COLORSTEEL® Environmental Categories, Warranty & Product Maintenance recommendations.

Contact with corrosive and incompatible materials, prolonged exposure to damp or corrosive internal environments, or excessive periods of wet stacking must be avoided as per table 20 E2/AS1.

Above information as cited by COLORSTEEL® www.colorsteel.co.nz

Espan® clip:

ZINC/ ALUMINIUM ALLOY

Metallic coating is AZ 150 consistent with NZMRM Code of Practice.

Powder coating of clips required when using Espan® in aluminium.

Contact with corrosive and incompatible materials, prolonged exposure to damp or corrosive internal environments, or excessive periods of wet stacking must be avoided as per Table 20 of E2/AS1.

Fixings of Espan® Clips to be in accordance with NZMRM Code of Practice and be compatible with the base material of the Espan® clip:

C3.4 (a), C3.7 (a)

Metalcraft Roofing's Espan® 470 profile is manufactured from COLORSTEEL®

COLORSTEEL® is rated as a Group 1-S material and has an average specific extinction area of 38.2m²/kg, a peak heat release rate of 3.3 kW/m² and total heat released of 0.2 MJ/m² when tested in accordance with ISO 5660:2002 Part 1 and Part 2.

Above information as cited by COLORSTEEL® www.colorsteel.co.nz

Metalcraft Roofing's Espan® C3 CLIP is suitable for wall applications that require less than 5% coreflute cushioning tape.

Espan® Standard Clip suitable for all roofing applications and suitable for wall applications that allow greater than 5% coreflute cushioning tape.

E2.3.1, E2.3.2

Flashing details should be in accordance with Metalcraft Roofing's Espan® 470 installation details, NZMRM Code of Practice. Metalcraft Roofing's Espan® 470 profile can be laid on pitches equal to or greater than those cited in NZMRM Code of Practice.

Alternative details complying with the "4 D's" (Deflection, Draining, Drying and Durability) will also comply with the performance requirements of NZ Building Code may be used from E2/AS1.

Metalcraft Roofing's Espan® 470 profile laid to a minimum pitch of 3° as per NZMRM Code of Practice.

When used with an absorbent underlay complying with NZS 2295:2006, Metalcraft Roofing's Espan® 470 profile will contribute to compliance with the NZ Building Code.

F2.3.1

COLORSTEEL® ENDURA®, COLORSTEEL® MAXX®, ZINCALUME® and GALVSTEEL® and Espan clip- ZINC/ ALUMINIUM ALLOY, will meet the performance requirements of F2, 2.3.1.

G12.3.1

COLORSTEEL® and ZINCALUME® -Rainwater collected from roofs clad with products made from ZINCALUME® coated steel and COLORSTEEL® prepainted steel, will comply with the provisions of NZBC G12.3.1, provided the water is not contaminated from other sources.

Above information as cited by NZ Steel -Source:

<https://www.nzsteel.co.nz/products/zincalume/features/#:~:text=Rainwater%20collected%20from%20roofs%20clad,not%20contaminated%20from%20other%20sources.>

LIMITATIONS ON THE USE OF THE BUILDING PRODUCT:

- Metalcraft Roofing's Espan® 470 profile can be used on SED projects if within the scope of NZMRM Code of Practice for flashing cover dimensions and suitability of use and where the design loads are within the products performance. Refer to Metalcraft Roofing's Installation Details and loadspan and fixing tables for product limitations. Fixings of Espan® 470 into SED projects outside the scope of NZMRM Code of Practice will require sign off from a professional engineer.
- Non compressible thermal breaks required when steel framed structures are used on insulated and lined buildings.
- Direct fixing not permitted unless when the building is unlined.
- Demonstration of compliance of horizontal battens by batten manufacturer and outside scope of this BPIS.
- To be used in situations where there are no dissimilar metals or compatibility issues as per NZMRM Code of Practice and Table 20 E2/AS1.
- When installed as a roof cladding, laid to a minimum pitch of profile.
- Swages standard for roofing. Removing swages on Espan® 470 roofing on a case by case basis but only in wind zones up to Medium. Requires approval from Metalcraft Roofing.
- The use of DRIDEX® is permitted and compliance is as per Codemark Certificate, available to download on: www.colorsteel.co.nz

DESIGN REQUIREMENTS THAT WOULD SUPPORT THE APPROPRIATE USE OF THE BUILDING PRODUCT

- Design and installation is as per the relevant NZ Building Code Clauses, NZS 3604:2011, NZMRM Code of Practice and alternative details complying with the "4 D's" (Deflection, Draining, Drying and Durability) will also comply with the performance requirements of NZ Building Code. Espan® 470 profile dimensions are outside the scope of E2/AS1, however this document can still be referenced and used when evaluating compliance with NZ Building Code.
- Buildings that comply with NZS 3604:2011 and building height up to three storeys or 10 m.
- For SED building height may go above 10m, to max performance of the Espan® 470 profile and in design wind speeds as covered by NZMRM Code of Practice.
- Buildings designed in accordance with NSZ 1170:2:2002.
- Timber framed construction in accordance with NZS 3604:2011.
- Steel framed structures in accordance with NASH Standard Part 1:2016 Design Criteria - Alternative Solution and NASH Standard Part 2:2019 Light Steel Framed Buildings.
- Design and installation in accordance with Metalcraft Roofing's product information.
- 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. The architect, builder and homeowner needs to be aware 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. A degree of oil canning is unavoidable. Please refer to NZMRM Metal Roof and Wall Cladding Code Of Practice - Section 12.3 for more information. (www.metalroofing.org.nz). The end result of the profile is dependent upon the quality of the timber sub-structure that supports it so it is critical that the roof purlins be square and flush for optimum results. Refer Espan® installation guide. Refer to MBIE -Guide to tolerances, materials and workmanship in new residential construction 2015.
- 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 NZMRM 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 risk matrix in E2/AS1 only addresses direct fixed vertically laid cladding. E2/AS1 states a drained cavity assists drying by allowing water which occasionally penetrates the wall cladding system to drain to the exterior of the building, and any remaining moisture to dry by evaporation. Metalcraft Roofing recommends all its cladding profiles are installed over a drained and vented cavity as it further assists in creating better air circulation than that achieved by direct fixed alone and also provides an additional layer of defence. Compliance of the cavity battens are by others. If treated timber battens are used then Metalcraft require a DPC separation layer.

CLASS 1

VERSION 1.0 ISSUE DATE: DECEMBER 2023

INSTALLATION REQUIREMENTS

Installation should be carried out by a suitably qualified practitioner. Installation of Espan® 470 should be in accordance with NZMRM Code of Practice. www.metalroofing.org.nz

MAINTENANCE REQUIREMENTS

Maintenance must be carried out in accordance with the COLORSTEEL® Environmental Categories, Warranty & Product Maintenance recommendations brochure. This can be downloaded from:

www.colorsteel.co.nz
www.metalcraftgroup.co.nz

IS THE BUILDING PRODUCT/BUILDING PRODUCT LINE SUBJECT TO A WARNING OR BAN UNDER SECTION 26 OF THE BUILDING ACT 2004:

NO

Metalcraft Roofing's Espan® 470 profile is not subject to a warning or ban under the Building Act 2004.

SUPPORTING INFORMATION

The following documents can support demonstration of compliance of Metalcraft Roofing's Espan® 470 profile with the NZ Building Code.

Building Act 2004
www.legislation.govt.nz

NZBC relevant clauses and acceptable solutions
NZS 3604:2011
www.building.govt.nz

Cited standards
www.standards.govt.nz

NZMRM Code of Practice
www.metalroofing.org.nz

Metalcraft Roofing's Espan® 470 Information Brochure
Metalcraft Roofing's Espan® 470 Installation Details
COLORSTEEL® Environmental Categories, Warranty & Product Maintenance recommendations brochure
Metalcraft Roofing's Installation Guide
Metalcraft Roofing's Espan® 470 Loadspan and Fixing Tables
Metalcraft Eco Choice Certification

Download from:
www.metalcraftgroup.co.nz

COLORSTEEL® Product and Technical Information.
www.colorsteel.co.nz

New Zealand Steel's Quality management system conforming to ISO 9001:2015 and assessed by Telarc.

New Zealand's Steel's Environmental Management system conforming to ISO 14001:2015
www.nzsteel.co.nz

PLACE OF METALCRAFT ESPAN® 470
MANUFACTURE

NEW ZEALAND

Metalcraft Espan® 470 is manufactured from the following Metalcraft Roofing branches and available nationwide from all Metalcraft Roofing branches.

METALCRAFT ROOFING -AUCKLAND EAST TAMAKI
24-26 Trugood Drive East Tamaki, Auckland
09 273 2820
orders.akl@metalcraftroofing.co.nz

METALCRAFT ROOFING -PALMERSTON NORTH
76 Malden Street, Palmerston North
06 358 9149
sales.palmerston@metalcraftroofing.co.nz

METALCRAFT ROOFING -CHRISTCHURCH
85 Columbia Ave, Hornby, Christchurch
03 349 7350
sales.christchurch@metalcraftroofing.co.nz

METALCRAFT ROOFING -CROMWELL
20 McNulty Road, Cromwell
03 445 4180
sales.cromwell@metalcraftroofing.co.nz

OTHER METALCRAFT BRANCHES THAT CAN
SUPPLY ESPAN® 470

METALCRAFT ROOFING -WHANGAREI
42-44 Rewa Rewa Road, Whangarei
09 470 0870
sales.whangarei@metalcraftroofing.co.nz

METALCRAFT ROOFING - AUCKLAND HOBSONVILLE
25 -27 Westpoint Drive, Hobsonville, Auckland
09 444 1813
orders.ns@metalcraftroofing.co.nz

METALCRAFT ROOFING -HAMILTON
9 Earthmover Cres, Burbush, Hamilton
07 849 3807
sales.hamilton@metalcraftroofing.co.nz

METALCRAFT ROOFING -TAURANGA
42 Poturi St, Tauriko, Tauranga
07 575 7032
sales.tauranga@metalcraftroofing.co.nz

METALCRAFT ROOFING -NEW PLYMOUTH
218 De Havilland Drive, Bell Block, New Plymouth
06 755 2113
sales.newplymouth@metalcraftroofing.co.nz

METALCRAFT ROOFING -HASTINGS
1454A Omaha Road, Hastings
06 873 9020
sales.hastings@metalcraftroofing.co.nz

METALCRAFT ROOFING -ROTORUA
15 Monokia Street, Rotorua
07 350 1138
sales.rotorua@metalcraftroofing.co.nz

METALCRAFT ROOFING -WELLINGTON
201 Gracefield Rd, Seaview, Lower Hutt
04 566 2253
orders.wgtn@metalcraftroofing.co.nz

LEGAL ENTITIES:

STEEL BUILDING PRODUCTS CENTRAL LIMITED

NZBN: 9429032296389
Level 1, 30 Highbrook Drive, East Tamaki Auckland

TRADING NAME / ADDRESS FOR SERVICE:
Metalcraft Roofing - Hamilton
Metalcraft Roofing - New Plymouth

STEEL BUILDING PRODUCTS NORTHERN LIMITED

NZBN: 9429032461398
Level 1, 30 Highbrook Drive, East Tamaki Auckland

TRADING NAME / ADDRESS FOR SERVICE:
Metalcraft Roofing - East Tamaki

STEEL BUILDING PRODUCTS SOUTHERN LIMITED

NZBN: 9429036306183
Level 1, 30 Highbrook Drive, East Tamaki Auckland

TRADING NAME / ADDRESS FOR SERVICE:
Metalcraft Roofing - Hastings
Metalcraft Roofing - Palmerston North
Metalcraft Roofing - Wellington

STEEL BUILDING PRODUCTS SOUTH ISLAND LIMITED

NZBN: 9429032296303
Level 1, 30 Highbrook Drive, East Tamaki Auckland

TRADING NAME / ADDRESS FOR SERVICE:
Metalcraft Roofing - Hastings
Metalcraft Roofing - Palmerston North
Metalcraft Roofing - Wellington

METAL LINE ROOFING LIMITED

NZBN: 9429031709583
Level 1, 30 Highbrook Drive, East Tamaki Auckland

TRADING NAME / ADDRESS FOR SERVICE:
Metalcraft Roofing - Hobsonville
Metalcraft Roofing - Rotorua
Metalcraft Roofing - Tauranga

DISCLAIMER

This Building Product Information Sheet must be read in conjunction with all cited documents.

Metalcraft Roofing states that the product will, if installed in accordance with the technical data, specifications, and advice prescribed by Metalcraft Roofing comply with the relevant provisions of the building code and satisfy our obligation to meet S14G of the Building Act 2004.

It remains the responsibility of all other professional parties to ensure they satisfy their own obligation of the Building Act 2004.

As part of Metalcraft Roofing's policy of continued improvement, final specifications may vary from those contained in this publication. The company reserves the right at any time and without notice to change the design, materials or features and withdraw products from the market without incurring any liability whatsoever.



ESPAN® 470 STEEL SOURCED FROM

COLORSTEEL® GALVSTEEL® ZINCALUME®

Metalcraft Roofing's Espan® 470 manufactured from steel from New Zealand Steel:

New Zealand Steel Ltd, 131 Mission Bush Road Glenbrook 2681, Auckland New Zealand
www.nzsteel.co.nz

OTHER PRODUCTS SUPPLIED BY
METALCRAFT ROOFING

Metalcraft Roofing also sell other products to complement the installation of Espan® 470.

Please note the correct selection of these products for the project application is the responsibility of the architect/designer.

All products where demonstration of performance is required to satisfy the NZ Building Code is the responsibility of the product manufacturer or importer of the following items: Metalcraft take on no responsibility whatsoever

Please liaise with the following companies for information:

SEALANTS, WASHERS, AQUASEALS, AQUADAPT, RIVETS, FASTENERS, TOUCH UP PAINTS, LITTLE GRIPPERS.

Key Supplier:
Konnect Fastening Systems®
<https://www.konnectfasteningsystems.co.nz/>

UNDERLAY

Metalcraft Roofing can supply various underlays, please note Key Suppliers include:
Thermakraft - www.thermakraft.co.nz
DriSpace - <https://www.driskpace.co.nz/>
ProClima - www.proclima.co.nz

MILL FINISH ALUMINIUM

Wakefield Metals - <https://www.wakefieldmetals.co.nz/>

Metalcraft Roofing are members of the Roofing Association, New Zealand and the New Zealand Metal Roofing Manufacturers Incorporated.