

METALCRAFT ESPAN® 470

PURPOSE

Metalcraft Roofing supplies the Metalcraft espan® 470 profile for use as a vertical wall and roof cladding.

EXPLANATION

Metalcraft espan® 470 (espan® 470) is a trough profiled sheet fabricated from steel manufactured by New Zealand Steel.

The sheets are offered as COLORSTEEL® Endura® and COLORSTEEL® Maxx® to withstand New Zealand's exposure zones and are available in the full range of COLORSTEEL® colours.

Clip-on solar panels and Metalcraft's Solaflex Laminates can be installed into the flat pan of espan® 470.

For roofing applications, espan® 470 is manufactured as standard with two swages in the pan. These provide extra rigidity, strength, and reduce wind-driven roof noise. The swages also assist with making oil canning less evident. espan® 470 roofing installed with Metalcraft Solaflex Laminates does not require swages.

The sheets are available in the following sizes:

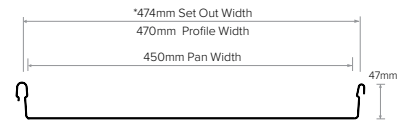
- Thickness (mm): 0.55
- Width (mm): Cover – 470, Sheet – 484

SCOPE AND LIMITATIONS OF USE



Figure 1: Profile Dimensions (nominal)

espan® 470 – Flat



espan® 470 – Swages



Scope	Limitations
Location As a roof cladding in all wind zones as defined in NZS 3604:2011 and in all calculated design loads.	<ul style="list-style-type: none"> ➤ For wind zones up to and including extra high the following profiles may be used: <ul style="list-style-type: none"> • espan® 470 - swages • espan® 470 - flat pan with Metalcraft's Solaflex Laminates in the pan. • espan® 470 - flat may be used in wind zones up to and including very high but only with prior approval from Metalcraft Roofing. ➤ Where the calculated design loads exceed 2.1 kPa the engineer must satisfy themselves that the product, pitch and fixings will meet the conditions and only espan® 470 - swages may be used without Solaflex laminates.
As a vertical wall cladding in all wind zones as defined in NZS 3604:2011 and in all calculated design loads.	<ul style="list-style-type: none"> ➤ For wind zones up to and including extra high espan® 470 - flat or espan® 470 - swages may be used. ➤ Where the calculated design loads exceed 2.1 kPa the engineer must satisfy themselves that the product, pitch and fixings will meet the conditions.
In all exposure zones as defined by NZS 3604:2011.	<ul style="list-style-type: none"> ➤ In exposure Zone D only COLORSTEEL® Endura® or COLORSTEEL® Maxx® may be used. For use in "Microclimatic considerations," (as defined in sec. 4.2.4) refer to Metalcraft Roofing.
On buildings located any proximity to a relevant boundary.	<ul style="list-style-type: none"> ➤ espan® 470 is non-combustible.
Building On timber or steel structural framing.	<ul style="list-style-type: none"> ➤ Where espan® 470 is used in an insulated building and in conjunction with steel framing, a thermal break is required.
In conjunction with a primary structure that complies with the NZ Building Code or where the designer has established that the existing structure is suitable for the intended building work.	<ul style="list-style-type: none"> ➤ Building height is limited by the espan® 470 design load span tables (refer to: www.metalcraftgroup.co.nz) or specific engineering, where applicable.
As a wall cladding.	<ul style="list-style-type: none"> ➤ espan® 470 must always be installed over a drained and ventilated cavity. ➤ Flashings, flexible and rigid building underlays and fixings must be in accordance with E2/AS1 and the current NZMRM Code of Practice. ➤ Contact with other materials must be in accordance with E2/AS1 and the current NZMRM Code of Practice.
As a roof cladding.	<ul style="list-style-type: none"> ➤ espan® 470 lengths ≤40 m must be installed on a roof with a minimum pitch of 3°. ➤ espan® 470 lengths >40 m and <60 m must be installed on a roof with a minimum pitch of 4°. ➤ A potable water collection system may be installed. ➤ Flashings, flexible and rigid building underlays and fixings must be in accordance with E2/AS1 and the current NZMRM Code of Practice. ➤ Contact with other materials must be in accordance with E2/AS1 and the NZMRM Code of Practice.

USEFUL INFORMATION

For information on the specification, installation and maintenance of Metalcraft espan® 470 and for our warranty, refer to www.metalcraftgroup.co.nz.

VERSION:

CONDITIONS OF USE

Selection of product must be in accordance with the espan® product selector guide.

PERFORMANCE CLAIMS

If designed, installed and maintained in accordance with all Metalcraft Roofing requirements, espan® 470 will comply with or contribute to compliance with the following performance claims:

NZ Building Code clauses	BASIS OF COMPLIANCE	
	Compliance statement ¹	Demonstrated by
B1 Structure B1.3.1, B1.3.2, B1.3.3 (a, b, c, d, g, i)	ALTERNATIVE SOLUTION	<ul style="list-style-type: none"> ➤ MRM Pre-Painted Coil Standard. ➤ MRM. [2017] Report no. 02/2017/MC.
	ACCEPTABLE SOLUTION B1/AS1	<ul style="list-style-type: none"> ➤ AS/NZS 1170:2002 (for span tables).
B2 Durability B2.3.1 (b), B2.3.2 (b)	VERIFICATION METHOD	<ul style="list-style-type: none"> ➤ MRM Pre-Painted Coil Standard (cited in E2/AS1).
C3 Fire Affecting Areas Beyond the Fire Source C3.4 (a), C3.7 (a)	ACCEPTABLE SOLUTION C/AS1	<ul style="list-style-type: none"> ➤ Steel is non-combustible. ➤ Non-combustible products achieve a material group number 1S.
	C/AS2 2019, amendment 5, November 2020	
E2 External Moisture E2.3.1, E2.3.2, E2.3.7 (a, b, c)	ACCEPTABLE SOLUTION E2/AS1	<ul style="list-style-type: none"> ➤ NZMRM Code of Practice.
F2 Hazardous Building Materials F2.3.1	ALTERNATIVE SOLUTION	<ul style="list-style-type: none"> ➤ Coating system is inert once dry. ➤ COLORSTEEL® safety data sheet.

1. The Compliance Statement is the pass holder's statement that they have met their obligations under s14G(2) of the Building Act 2004.

Other performance statement	BASIS OF STATEMENT	
	Performance statement	Demonstrated by
espan® 470 will not contaminate potable water.	AS/NZS 4020:2005	Claimed by manufacturer: New Zealand Steel. Refer to the BRANZ statement that metal roof is suitable: http://www.level.org.nz/water/water-supply/mains-or-rainwater/

NZ STEEL ASSURANCE

As the manufacturer of the steel, from which espan® 470 is fabricated, New Zealand Steel provides assurance that:

- the metallic coating is consistent with AS 1397-2001
- the Endura® and Maxx® coating meet the MRM Pre-Painted Coil Standard – performance requirements.

For more information on the specific exposure zones and environmental impacts of the product refer to www.colorsteel.co.nz.

SOURCES OF INFORMATION

- BRANZ. [05/2020] Retrieved from <http://www.level.org.nz/water/water-supply/mains-or-rainwater/harvesting-rainwater/>. [Accessed 04/02/2021].

- NZ Metal Roof Manufacturers Association (NZMRM). *Code of Practice v3.0*. Retrieved from <https://www.metalroofing.org.nz/cop>. [Accessed 04/02/2021].
- NZ Metal Roofing Manufacturers Association (NZMRM). [01/12/2020] *MRM Pre-Painted Coil Standard – Performance Requirements*. Retrieved from <https://www.metalroofing.org.nz/cop/testing-and-mrm-standards/mrm-pre-painted-coil-standard-performance-requirements>. [Accessed 15/02/2021].
- NZ Metal Roofing Manufacturing Inc (MRM). [2017] *Summary of previous testing of Espan 470*. Report No. 02/2017/MC.
- New Zealand Steel Fire Bulletin. [November 2016] Retrieved from https://assets.ctfassets.net/t9web88hzjrs/1qZQBrBpVG4QiMUgCwu680/dbc4b57a3bf422995596302144e9a6e7/NZS0005_302_Fire_Testing_-_of_coated_steel_products_2pp_copy.pdf. [Accessed 04/02/2021].

VERSION: **DATE:**

Note: Uncontrolled in printed format.

NAME: Frances Charles

POSITION: National Sales & Marketing Mgr

Signed on behalf of Metalcraft Roofing:

By signing this pass™ the signatory confirms that, in respect of the subject of this pass™, the company has met their s14G obligations under the Building Act 2004.

For more information visit www.metalcraftgroup.co.nz