

Six Rib

A modern profile fashioned for maximum strength. Six Rib is suitable for a variety of residential and commercial roofing and wall cladding use.

AUTHORISED SUPPLIER



COLORSTEEL



New Zealand
Steel

 **FREEMAN**
ROOFING

freemanroofing.co.nz





FREEMAN ROOFING SIX RIB

Freeman Roofing Six Rib is a distinguished metal trapezoidal roof and wall cladding profile offering 735mm of coverage available in both 0.40mm and 0.55mm thicknesses, complemented by a 29mm rib height and suitable for a minimum roof pitch of three degrees.

This design enables extended spans and superior water carrying capacity establishing it as the cladding of choice for numerous medium-sized commercial projects. Freeman Roofing Six Rib presents a suitable option for fencing applications, where its bold rib shape enhances aesthetic appeal. Owing to its pierce fixed installation and lightweight, yet rigid design, the Six Rib permits wide spacing of purlins, translating to economic and efficient usage while facilitating ease of handling and installation.

When specifying Freeman Roofing Six Rib into design plans, always cite this product as:
Freeman Roofing Six Rib. This will ensure that the product used on the project is compliant and accurately manufactured using genuine NZ Made Colorsteel®

SUMMARY OF DESIGN CONSIDERATIONS

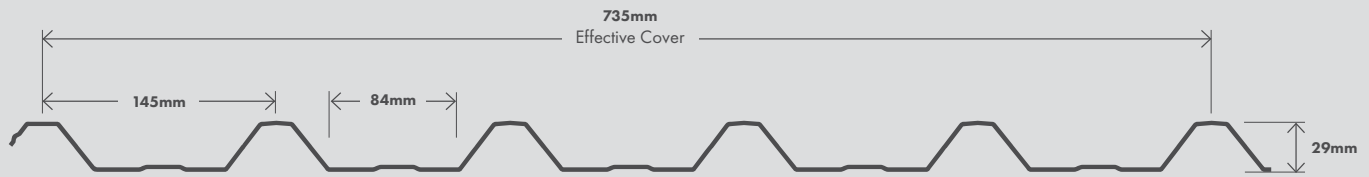
- Ensure a minimum roof pitch of 3°.
- Select appropriate material coating based on building location/environment.
- Choose from Colorsteel® standard colour ranges, including Matte and Altimate® (availability and minimum quantities may apply).
- Use unpainted metallic-coated steel.
- Follow Freeman Roofing guidelines to meet the NZ Building Code, E2/AS1, and NZ Metal Roofing Manufacturers Code of Practice.
- Account for thermal expansion, especially in darker shades. Consider expansion joints at maximum lengths of 24 metres (lighter colours) and 16 metres (darker colours).
- Adhere to Freeman Roofing Six Rib span tables for purlin spacing to avoid exceeding maximum spans.
- For wall cladding, direct fixing is vertical, use drainage cavity batten for horizontal fixing.
- Exercise caution for compatibility when combining Freeman Roofing Six Rib with other metals like copper to prevent rapid corrosion.
- Choose an adequate cover based on the thickness (BMT) of the sheets.

PROFILE TECHNICAL SUMMARY

SIX RIB

All profile dimensions are nominal and in mm

Dimensioned Drawing of Six Rib



COMPOSITION OF MATERIALS AND FINISHES



Strength

The rib height and rib spacing makes it a very strong roofing profile, suitable for low pitch roofing.



Long Run

Modern roll forming technology allows Six Rib roofing and cladding to be manufactured in continuous lengths.



Colour Choice

A wide range of standard colours is available with additional colours and coatings available on request.



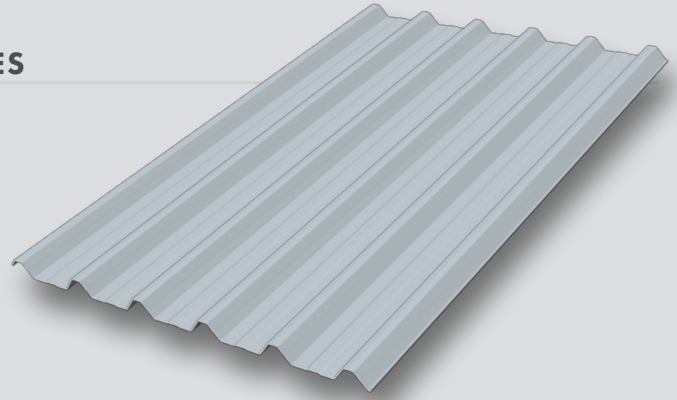
Crimp-curving

Six Rib can be crimp-curved.



Pan Swage

The pan swage enhances appearance.



Defining the boundaries of distinct corrosion zones proves challenging due to the numerous factors influencing the corrosiveness of specific sites. Selecting suitable materials for each location is crucial, ensuring they align with the NZ Building Code's durability standards and fulfil customer anticipations.

Zinc/aluminium-coated steel adheres to AS 1397:2011 standards.

Available pre-painted metals offer diverse environmental solutions encompassing multiple metals, metallic coatings, paint systems, and varying paint thicknesses. These paint coatings are manufactured in line with AS/NZS 2728:2013 regulations.

For project-specific environmental zone product selection, please contact Freeman Roofing for further details.

MATERIALS AND DURABILITY

Six Rib is available in:

	Thickness (BMT)	
	.40mm	.55mm
Colorsteel®	G550	G550
Zincalume®	.40mm G550	.55mm G550

Also available in other non-ferrous metals.

Various types of coatings are available to suit all environments including industrial and coastal conditions.

For optimum performance, the severity of the environment in which the cladding will be installed should determine both the metal and type of coating to be used.

DESIGN REQUIREMENTS

The minimum pitch for Six Rib is 3°.

Six Rib will spring curve to a minimum radius of 20m for .40mm BMT G550.

Specifications and product performance statements for specific projects are available upon request prior to project commencement.

ROOFING ACCESSORIES

A full range of accessories including rainwater goods, flashing, underlays, fasteners and matching translucent sheeting are available.

For additional information please refer to:

- New Zealand Steel Installers Guide
- New Zealand Steel Specifiers & Builders Guide
- New Zealand Steel Metal Roof and Wall Cladding Code of Practice

PROFILE TECHNICAL SUMMARY CONT.

MAXIMUM SPAN

For 1.1 kN Concentrated Load for G550 Steel

Location of span	Thickness (BMT)	
	.40mm	.55mm
Roof End Span	1000	1100
Roof Intermediate Span	1500	1800
Wall End Span	1400	1900
Wall Intermediate Span	2000	2700

Single spans should be limited to 80% of the above end spans.

Purlin spacing should be reduced in high traffic areas or areas supporting items such as air conditioning units or walkways that are provided for maintenance.

FASTENINGS

Recommended roof fasteners:

Nails	75mm
Timbertites	12g x 65mm
Steeltites	12g x 55mm

Wall fastenings also available. The fastener and its coatings must be compatible and suitable for environment and roofing product.

SHEET COVER

1 x Sheet	800mm
2 x Sheet	1530mm
3 x Sheet	2270mm
4 x Sheet	3000mm
5 x Sheet	3740mm
6 x Sheet	4470mm
7 x Sheet	5210mm
8 x Sheet	5940mm
9 x Sheet	6680mm
10 x Sheet	7410mm

WARRANTY

Six Rib is covered by warranty for:

- Coating performance
- Corrosion resistance
- Substrate integrity

Warranty is subject to the use of the appropriate product for the environment.

A written warranty is available on request.

MANUFACTURING BRANCHES

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Wānaka

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Queenstown

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Manufactured custom cut to length subject to transport and site limitations.



Sheet lengths in excess of 28 metres require specialised transportation.



As sheet lengths increase higher transportation costs may be applicable.



Maximum recommended sheet lengths for aluminium are 10-12 metres for dark coloured and 12-15 metres for plain and light coloured. Refer to Roof Expansions Provisions of this summary.

ADHERENCE TO BUILDING CODE STANDARDS

When employed in alignment with Freeman Roofing’s installation and maintenance advice, Freeman Roofing Six Rib will aid in fulfilling the subsequent stipulations of the New Zealand building code.

B1 STRUCTURE:

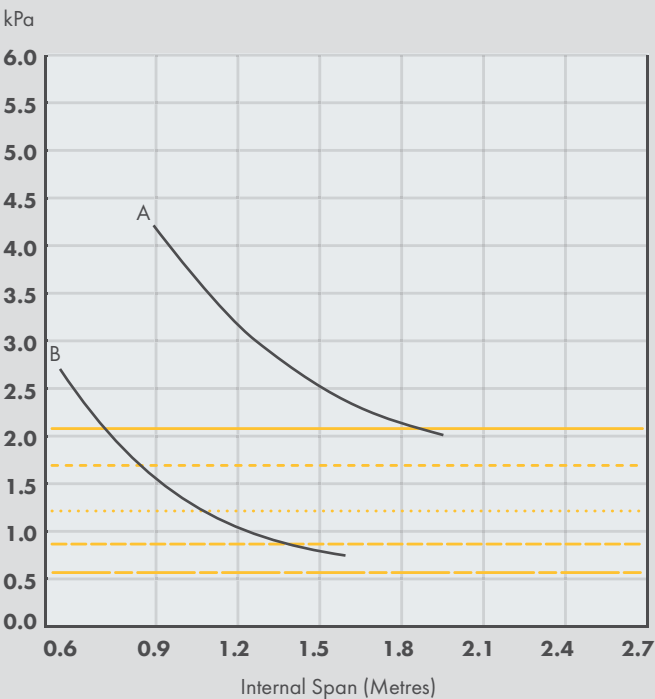
B1.3.1, B1.3.2, B1.3.3 (b, c, f, g, h, j), B1.3.4

The span tables align with AS/NZS 1170.2:2002 standards. They are established using a maximum building height of ten metres and a 500-year design return period for wind load assessment under the strength limit state.

WIND & CONCENTRATED (SLS) LOAD SPAN DESIGN GRAPH (APPLICABLE TO ROOF AND WALL CLADDING)

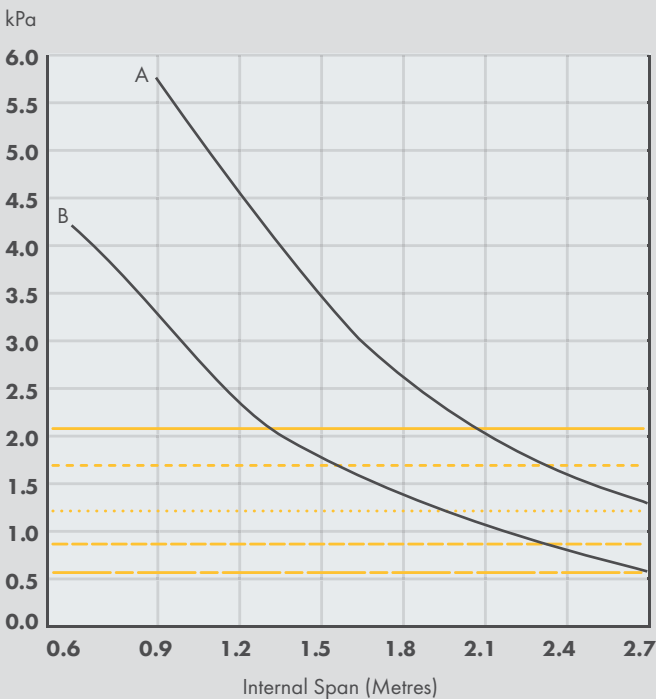
Roofing - Steel Based Material

0.40 Colorsteel



Key		Wind Zone	Load
		Extra High	2.09kPa
		Very High	1.72kPa
		High	1.32kPa
		Medium	0.93kPa
		Low	0.6kPa

0.55 Colorsteel



Key		Wind Zone	Load
		Extra High	2.09kPa
		Very High	1.72kPa
		High	1.32kPa
		Medium	0.93kPa
		Low	0.6kPa

- Intermediate span in metres.
- A represents the 6T5 fixing method
- B represents the 6T3 fixing method

All the tests from which these graphs have been derived used the 2:3 ratio of end to intermediate span and the graphs shown are for intermediate spans only. End spans must be reduced by two-thirds for these values to be assumed.

ADHERENCE TO BUILDING CODE STANDARDS CONT.

SIX RIB FIXING PATTERNS

0.40 Colorsteel

6T5 - Hit all



6T3 - Hit 2, Miss 2, Hit 1



Wind zone as per NZS 3604

Access	Span (m)	L	M	H	VH	EH
Unrestricted	0.6	6T3	6T3	6T3	6T3	6T3
Unrestricted	0.9	6T3	6T3	6T3	6T5	6T5
Unrestricted	1.2	6T3	6T3	6T5	6T5	6T5

0.55 Colorsteel

6T5 - Hit all



6T3 - Hit 2, Miss 2, Hit 1



Wind zone as per NZS 3604

Access	Span (m)	L	M	H	VH	EH
Unrestricted	0.6	6T3	6T3	6T3	6T3	6T3
Unrestricted	0.9	6T3	6T3	6T3	6T5	6T5
Unrestricted	1.2	6T3	6T3	6T5	6T5	6T5
Unrestricted	1.5	6T3	6T3	6T3	6T5	6T5

B2 DURABILITY:

B2.3.1 (b)

Durability in accordance with Table 20 E2/AS1

Product	Rain Washed Roofs	Walls and Unwashed Areas
Colorsteel Endura / Colorcote Zinacore	B, C, D	B, C
Colorsteel Maxx / Colorcote Magnaflow	B, C, D, E	B, C, D
Colorsteel Altimate / Colorcote Alumiguard	B, C, D, E	B, C, D, E

Key

E2/AS1 references atmospheric zones B, C, D, E. Determined, by wind-driven sea-spray.
B: Low / C: Medium / D: High / E: Severe marine, such as breaking surf beaches.

C FIRE:

C3.5, C3.6, C3.7

Freeman Roofing products made from Colorsteel® are rated as group 1-S materials when tested in accordance with ISO 5660:2002 part 2. For more information, please refer to: Colorsteel product technical statements v2022.1 <https://www.colorsteel.co.nz/resources/downloads-and-brochures/>

E1 – SURFACE WATER:

E1.3.2

Freeman Roofing Six Rib carrying capacity.

Minimum Pitch 3°, rainfall intensity 150 mm/hr

Maximum Run	119.5m	
Catchment area of spreader	83 m²	20 m run, 2 holes in spreader
Catchment behind penetration	38 m²	20m run, discharging each side of penetration

E2 EXTERNAL MOISTURE:

E2.3.1, E2.3.2, E2.3.7

Freeman Roofing Six Rib will match a wide range of details for most applications. Standard design details for Freeman Roofing Six Rib can be found on our website. <https://www.freemanroofing.co.nz/roofing-styles/Six-Rib/>

Other options can conform to the trapezoidal roofing solutions outlined in E2/AS1.

E3 INTERNAL MOISTURE:

E3.3.1

When utilised alongside a porous and permeable underlay that meets the standards of NZS 2295:2006, the utilisation of Freeman Roofing Six Rib aids in satisfying the requirements of NZBC E3.3.1. Adequate ventilation provisions are necessary for ceiling spaces in sarked roofs, skillion roofs, barrel curved roofs, flat roofs, and roofs in moisture-prone environments.

F2 HAZARDOUS BUILDING MATERIALS:

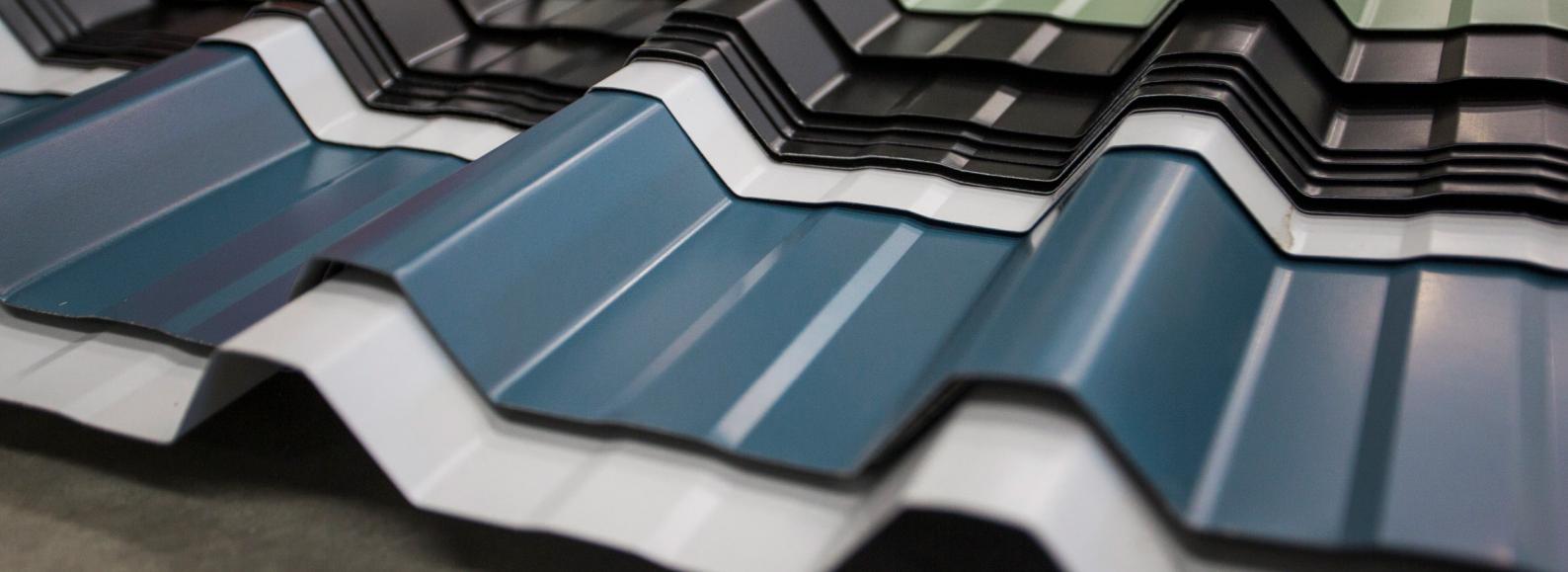
F2.3.1

Freeman Roofing Six Rib manufactured from Zinalume® Colorsteel® or pre-painted Aluminium such as Altimate® will meet the performance requirement of F 2.3.1.

G12 WATER SUPPLIES:

G12.3.2

Colorsteel tested in accordance with AS/NZS 4020:2005 will comply with the provisions of NZBC G 12.3.1. Source: <https://www.metalroofing.org.nz/cop/fitness-purpose/drinking-water>.



TESTING & SUPPORTIVE EVIDENCE

Supporting evidence provided where requested will apply to the product supplied for the specific project.

Technical documentation and testing evidence pertaining to Colorsteel® and Altimate® can be found here: <https://www.colorsteel.co.nz/resources/downloads-and-brochures/>

Freeman Roofing Six Rib wind capacity and span tables reflect testing undertaken by the New Zealand Metal Roofing Manufacturers Association. <https://www.metalroofing.org.nz/cop/structure/wind-loadspan-graphs-designs-asnzs1170>

INSTALLATION ADVICE

- Store Freeman Roofing Six Rib sheets above ground level in a dry place. If they get wet, separate, wipe, and let them dry.
- Avoid using black lead pencils on aluminium/zinc or steel; they cause corrosion. Use non-black pencils, marker pens, or crayons.
- Cut pre-painted steel with shears, not friction blades or high-speed saws, which can damage the coating and create heat and swarf.
- Clear debris daily, as it's easier to prevent swarf damage.
- Install sheets with lapping, not stretching, to prevent weather penetration.
- Crest fix roofing with specified fasteners through every rib. Use load-spreading washers when needed; pan fixing is for walls.
- For wide spans, use self-drilling stitching screws for a weatherproof seal.
- Turn up/down pans on roofing and ends on wall cladding. Use foam seals when necessary.
- Install eaves flashings for low pitch or narrow soffits and in high-wind zones.
- Walk on roofing over purlins, wear flat rubber-soled shoes, and use crawl boards for carports/verandahs.
- Use cavity battens under wall cladding, adjusting screw length as needed.
- Install flashings as specified for weather tightness.

MAINTENANCE

All roofing and cladding materials are affected by the combined influences of weather, dust, and various deposits. Therefore, the long-term performance and resilience of Freeman Roofing Six Rib roofing and wall cladding rely on proper upkeep. In the case of roofing, the natural action of rain will generally cleanse most gathered environmental particles from the upper surface.

On the other hand, wall cladding necessitates manual cleaning every 3 to 12 months (depending on the local surroundings and paint system) to prevent the accumulation of dirt, debris, or other substances that rain alone can't remove. Regions that lack sufficient rain cleaning (unwashed areas) demand more thorough manual cleaning. These areas encompass soffits, wall cladding beneath eaves, undersides of gutters, fascias, protected sections of garage doors, unwashed

roof segments, and other zones at greater risk, such as around flues, beneath television aerials and solar panels, or in locales prone to mould, lichen, bird droppings, or debris.

Maintenance of roofing and cladding materials should be cleaned manually using either water and a sponge or a gentle nylon-bristled brush. Water blasting can be employed, but the pressure must not exceed 20MPa. Avoid using harsh or solvent-based cleaners like turps, petrol, or kerosene.

Additional information pertaining to New Zealand Steel's maintenance advice for its products can be found here: https://www.colorsteel.co.nz/assets/Brochures/Maintenance_Recommendations_Brochure_v4.pdf.

STATEMENT IN REGARD TO SECTION 26 OF THE BUILDING ACT

Freeman Roofing Six Rib roofing and wall cladding products are not subject to any warnings or bans under Section 26 of the Building Act.



freemanroofing.co.nz

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