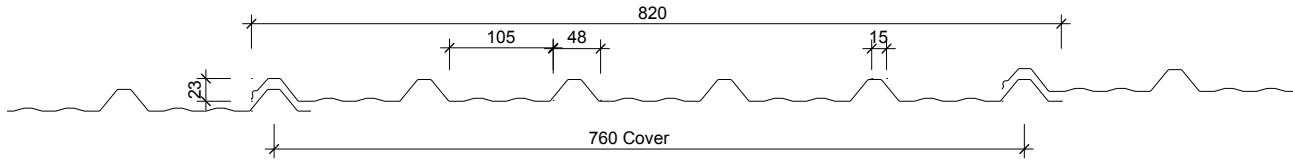


DIMOND SIX RIB PROFILE INFORMATION



Cover (mm)	760
Sheet width (mm)	820
Minimum Pitch	4° (approx. 1:20)

All dimensions given are nominal

Sheet Tolerances

Sheet width: ± 5 mm

Sheet width for aluminium +0, -15mm. If sheet cover widths are critical, advise Dimond Roofing at time of order.

Sheet length: +10, - 0mm. For horizontal wall cladding where notified at time of order of intended use, tighter tolerances can be achieved +3, -0.

Material Options	Steel	
Thickness (BMT) mm	0.40	0.55
Nominal weight/lineal metre (kg/m)	3.17	4.27
Drape curved roof - min. radius (m)	80	40
Purlin spacing's for drape curved roof (m)(1)	1.2	1.4
Machine curved - roof min. radius (mm)	n/a	n/a
Unsupported overhang (2)(mm)	250	250

(1) Recommended maximum purlin spacing's at minimum radius.

(2) Based on 1.1kN point load support, but not intended for roof access.

n/a not available

Roll-forming facilities at: Invercargill

Sheet lengths: Six Rib is custom run to order. Where long sheets are used, consideration must be given to:

- Special transportation licences for sheet lengths over 25m
- Site access for special lifting equipment
- Fixing techniques to accommodate thermal expansion

SIX-RIB LIMIT STATE LOAD/SPAN CAPACITY CHART

(span in mm, distributed serviceability and ultimate loads in kPa)

Serviceability Category

		Unrestricted-Access Roof	Restricted-Access Roof			Non-Access Roof or Wall
G550 Steel 0.40mm	End Span (mm)	600	700	800	1000	1200
	Internal Span (mm)	900	1000	1200	1500	1800
	Serviceability	4.5	3.9	3.1	2.3	2.0
G550 Steel 0.55mm	End Span (mm)	1000	1100	1250	1500	1600
	Internal Span (mm)	1500	1700	900	2200	2400
	Serviceability	3.0	2.5	2.0	1.5	1.3

Notes

- In any category, spans above the maximum shown should not be used. Category 1 and 2 maximum spans are based on static point load testing as a guide, and further limited by practical experience of roof performance under dynamic foot traffic loads. Category 3 maximum spans are limited as a guide to achieving satisfactory appearance for wall cladding.
- Loads given are based on 5 screw fasteners/sheet/purlin.
- Loads given are limited to a maximum of 4.5kPa. If design requirements exceed this limit, Contact Dimond Roofing for specific advice.
- End span capacities given in this table are based on the end span being 2/3 of the internal span.
- Design Criteria for Limit State Capacities**
 - Serviceability Limit State**
No Deflection or permanent distortion that would cause unacceptable appearance, side lap leakage or water ponding, due to foot traffic point loads, inward or outward wind loads or snow loads.
 - Ultimate Limit State**
No pull through of fixings or fasteners withdrawal resulting in sheet detachment due to wind up-lift (outward) loads.
- System Design**
The span capacity of Six Rib is determined from the Six Rib Limit State Load/Capacity Chart using the section of the chart appropriate to grade and type of material, and to the category of serviceability selected from the three categories below. Serviceability loads have been derived by test to the NZMRM testing procedures. To obtain an ultimate limit state load we recommend factoring the serviceability load up by 1.4 in-line with NZMRM guidelines. The capacities given do not apply for cyclone wind conditions.

Serviceability Requirements
While these categories are given for design guidance to meet the serviceability limit state criteria, foot traffic point load damage may still occur if there is careless placement of these point loads.

Service Category	Description
1. Unrestricted-access roof	Expected regular foot traffic to access the roof for maintenance work and able to walk anywhere on the roof. No congregation of foot traffic expected.
2. Restricted-access roof	Expect occasional foot traffic educated to walk only on the purlin lines, in the profile pan. Walkways installed where regular traffic is expected, and "Restricted Access" signs placed at access point.
3. Non-access roof or wall	Walls or roofs where no foot traffic access is possible or permitted. If necessary, "No Roof Access" signs used.
- Wind Pressure Guide**
As a guide for non-specific design the following S.L.S. design loads in accordance with the MRM Roofing Code of Practice can be used for buildings less than 10m high, otherwise AS/NZS 1170.2 should be used
Low wind zone = 0.68kPa, Medium wind zone = 0.93kPa, High wind zone = 1.32kPa, Very high wind zone = 1.72kPa and Extra high wind zone = 2.09kPa.

Six Rib Design

Fasteners that are used to secure Six Rib down as a roof cladding must penetrate into the purlin a minimum of 30mm for timber and 6mm for steel purlins. For wall cladding the fasteners must be long enough to pass through the substrate, cavity batten and into the solid framing by 30mm for timber and 6mm for steel.

Fixing Requirements		
Purlin or frame material	Roof	Wall (over vented cavity batten, 18 - 25mm thick) Pan fixed
Timber	12g x 65mm Type 17 Timbertite with neo	12g x 50mm Type 17 Timbertite complete with neo
Steel	12g x 35mm Steeltite	12g x 50mm Steeltite complete with neo

For screw size range and fastener/washer assembly refer to Section 2.2.3.1

The Limited State Load/Span Capacity Chart is on 5 screw fasteners/sheet/purlin without the use of load spreading.

Profiled metal washers are recommended for use;

- On end spans, or large internal spans where the Ultimate Limit State distributed load is limiting. Contact Dimond Roofing for specific advice in these design cases.
- When required to enable the fixing system to accommodate the thermal movement of long sheets – see Section 2.1.3.4 Thermal Movement

3. Whenever the designer wishes to ensure the risk of fastener over-tightening will not cause dishing of the crest of the profile rib.

Use in serviceability categories (1) or (2) can allow the reduction of fasteners to an average of 3 screw fasteners/sheet/purlin. If this is done, the distributed load capacities given in the chart should be reduced using a multiplying factor of 0.6.

Long spans may require specification and use of side lap stitching screws – Section 2.3.2 C Installation

Information: Layout and Fastenings.

Design Examples

Restricted access roof, 0.55mm G550 steel Six Rib has a maximum end span of 1500mm and a maximum internal span of 2200mm. The following distributed load capacities apply.

	5 fasteners/sheet	3 fasteners/sheet
End Span	1500mm	1500mm
Internal Span	2200mm	2200mm
Serviceability	1.5kPa	0.9kPa

Six Rib Fastener Layout Options

