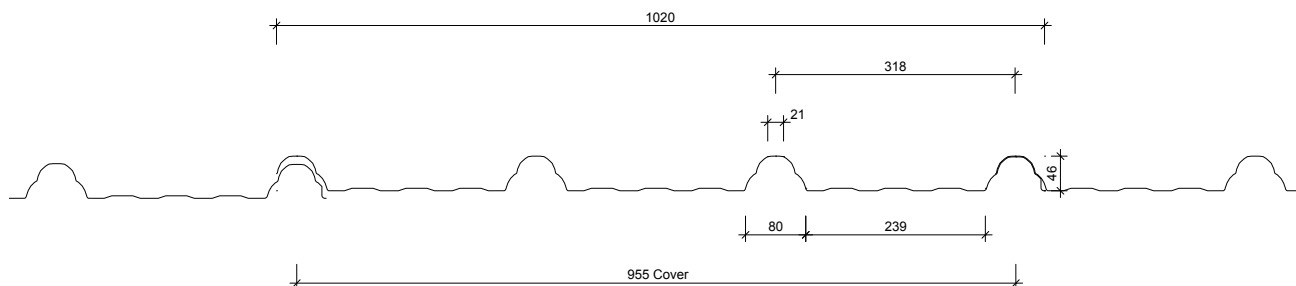


DIMOND DP955® PROFILE PERFORMANCE



Cover (mm)	955
Sheet width (mm)	1020
Minimum Pitch	3° (approx. 1:20)

All dimensions given are nominal

Sheet Tolerances

Sheet width: ±5mm

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

Material Options Profile	Steel	
Thickness (BMT) mm	0.4	0.55
Nominal weight/lineal metre (kg/m)	4.12	5.55
Drape curved roof - min. radius (m)	n/r	70
Purlin spacings for drape curved roof (m)(1)	n/r	2.7
Machine crimp curved - roof min. radius (mm)	n/a	n/a
Unsupported overhang (2)(mm)	250	350

(1) Recommended maximum purlin spacing at minimum radius

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

n/r – not recommended

n/a – not available

Notes:

- Where purlin spacings for roofing exceed 1.5m for 0.4mm or 2m for 0.55mm, the sidelap must be fastened in accordance with Section 2.3.2
- When notching flashings around the DP955® rib, use straight cuts rather than follow the curve rib shape

Roll-forming facility at: Auckland and Christchurch

Sheet lengths: DP955® 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.

Refer Section 2.1.3.4.

DP955® LIMIT STATE LOAD / SPAN CAPACITY CHART

(span in mm, distributed serviceability loads in kPa)

Serviceability Category

		Unrestricted-Access Roof			Restricted-Access Roof			Non-Access Roof or Wall	
G550 Steel 0.40mm	End Span			800	1100	1300	1600	1800	2000
	Internal Span			1400	1700	2000	2400	2700	3000
	Serviceability			2.3	1.9	1.6	1.3	1.1	1.0
G550 Steel 0.55mm	End Span	1600	1800	2000	2200	2400	2700	2900	
	Internal Span	2400	2700	3000	3300	3600	4000	4300	
	Serviceability	2.0	1.8	1.6	1.4	1.3	1.2	1.1	

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 3 screw fasteners/sheet/purlin with load spreading washers.
- Loads given are limited to a maximum of 4.5 kPa. If design requirements exceed this limit, contact Dimond for specific advice.
- End span capacities given in this table are based on the end span being $\frac{2}{3}$ of the internal span.

5. Design Criteria for Limit State Capacities

a) 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.

6. System Design

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	Expect 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 pans, or carefully across two profile ribs. Walkways installed where regular traffic is expected, and "Restricted Access" signs placed at access points.
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.

7. 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.

Fastener Design

DP955® should be screw fixed to either timber or steel purlins. The use of the appropriate length of 12g or 14g screw will ensure failure by screw pull out will not occur under loads within the scope of the Limit State Load / Span Capacity Chart.

Purlin Type	Screw Fastener			
	Roofing Rib		Wall Cladding Pan	
	Screw Length* (mm)	Designation	Screw Length* (mm)	Designation
Timber	100	T17 - 14 - 10 x 100	50	Roofzip M6 x 50 HG-Z4
Steel	75	Tek - 14 - 14 x 75	20	Tek - 12 - 14 x 20

*If sarking or insulation is used over the purlins or for wall cladding fixed onto a cavity batten, into the stud, the screw length will need to be increased.

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

The Limit State Load / Span Capacity Chart is based on 3 screw fasteners/sheet/purlin with the use of load spreading washers and 36mm dia EPDM seals.

Profiled metal washers are recommended for use:

1. On end spans, or large internal spans where the Ultimate Limit State distributed load is limiting. Contact Dimond for specific advice in these design cases.
2. When required to enable the fixing system to accommodate the thermal movement of long sheets – see Section 2.1.3.4 Thermal Movement.
3. Wherever the designer wishes to ensure the risk of fastener over-tightening will not cause dishing of the crest of the profile rib.

Where screws are used without load spreading washers, the profile's load span ability is reduced by 60%.

Long spans above 1.5m for 0.4mm and 2.0m for 0.55mm require the specification and use of side lap stitching screws – see Section 2.3.2C Installation Information: Layout and Fastening.

Design Example

Restricted access roof, 0.55mm G550 steel DP955® has a maximum end span of 2700mm and a maximum internal span of 4000mm. The following distributed load capacities apply.

	3 fasteners/sheet
End Span	2700mm
Internal Span	4000mm
Serviceability	1.2 kPa

Continued on next page...

DIMOND DP955® FASTENER LAYOUT OPTIONS

