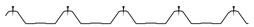
Wind & Concentrated Load Span Design Graph

Maxispan® G550 Steel .55 mm BMT

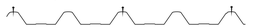
Roofing Application

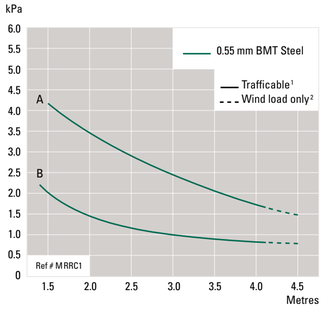
Primary Fixing Method:
(Also refer to further content on the rear page)

A Fixed every purlin on every rib with approved screws and neos, load spreading profiled metal washers and 36 mm EPDM washers.



B Fixed every purlin at the laps and to the centre rib with approved screws and neos, load spreading profiled metal washers and 36 mm EPDM washers. End purlins and periphery of roof to be fixed every rib.





- Intermediate span in metres.
- End spans to be a maximum of 2/3 of this span.

1 The solid line represents where walking is permitted within 300 mm of the purlin line or in the pan of the profile.

Therefore for a normal roof, and providing wind load requirements are met, purlin spans are limited to:

Maximum Spans	0.55 mm BMT
Intermediate	4.2 metres
End	2.8 metres
Type 2B *"Restricted Access"* Classification	

2 The broken line represents untrafficable roof areas and relates to wind loading only with Type 3 Classification.

In areas of heavy roof traffic, or where the roofing supports such items as air conditioning units, purlin spacing should be reduced accordingly.

For Type A "Unrestricted Access" Classification refer to Roofing Industries.

Other fixing patterns may be used, however these will alter the design load for wind only.

Refer to www.roof.co.nz for further details and other substrates. Tested in accordance with the NZMRM test procedure. Note: Wind & Concentrated Load Span Design Graph is based on information derived from extensive testing of Maxispan® on the MRM Test rig, utilising variations in fasteners, fixings and patterns covering both roofing and cladding applications. Classification Type is from the NZ Metal Roof and Wall Cladding Code of Practice.

MAXISPAN®

Roof Pitch

The minimum pitch for Maxispan® is 3° (approximately 1 in 20). For combined sheet runs in excess of 40 metres, contact Roofing Industries

Materials

- Zincalume® Steel: .40 mm BMT or .55 mm BMT, AZ150 (150gm/m²) G550 Mpa Yield Stress
- Galvanised Steel: .40 mm BMT or .55 mm BMT, Z450 (450gm/m²) G550 Mpa Yield Stress
- Prepainted COLORCOTE® or COLORSTEEL over Zincalume® .40 mm BMT or .55 mm BMT, AZ150 (150gm/m²), G550 Mpa Yield Stress
- Prepainted COLORCOTE® or COLORSTEEL over Galvanised Steel: .40 mm BMT or .55 mm BMT ZM275 (275gm/m²) G550 Mpa Yield Stress
- Prepainted COLORCOTE® over ZAM™ .40 mm BMT or .55 mm BMT, ZA275 (275gm/m2) G550 Mpa Yield Stress.

For information on Aluminium, Stainless Steel, ZAM™ and Copper Maxispan®, contact Roofing Industries Limited.

Durability

Selection of the correct grade of material and appropriate surface coating is imperative to ensure Maxispan® will perform satisfactorily in the environment it is to be installed, and meets the requirements of The NZ Building Code. Environmental Categories and Surface Coating literature is available from our website www.roof.co.nz.

Accessories

A full range of matching accessories is available, including Ridging, Flashings, Underlays, Insulation, Fasteners, Rotary Roof Ventilators and Rainwater Systems.

Underlay

Underlay as per the project specification is to be used.

Translucent roofing

Maxispan® is available as glass reinforced translucent roof and wall lighting products.

Fixings and Fasteners

All fixings and fasteners are to be of an approved type, compatible with all materials, the environment and meeting the requirements of the NZ Building Code. Installation is to be in accordance with the NZ Metal Roof and Wall Cladding Code of Practice or manufacturer's instructions.

Roof application

Using the appropriate fixing method from the Wind & Concentrated Load Span Design Graphs.

- From the ridge down for dark coloured roof sheets up to and including 15 metres, and for light coloured and Zincalume® roof sheets up to and including 18 metres, solid fix.
- For sheet lengths in excess of the above, oversize holes should be used for the remainder of the sheet. Refer to www.roof.co.nz for further information
- Fix every crest to: Ridge, Hip, Valley, Gutter and Periphery areas.

Standard Primary Fixings are:

For Timber Purlins use 14 x 100 Timbertite® Class 4 or 5 Screws with neos and with load spreading profile metal washers and 36 mm EPDM sealing washers.

For Steel Purlins use 14 x 90 Steeltite® Class 4 or 5 Screws with neos and with load spreading profile metal washers and 36 mm EPDM sealing washers.

Walling application

Fix in the pan adjacent to every rib using 12 gauge Class 4 or 5 Steeltites® (generally 12 x 20) or Timbertites® and neos as appropriate, ensuring that when the fastener is into timber it is of sufficient length to penetrate the framing by 30 mm.
The pan fixing at the lap is to be adjacent to the rib in both pans.

Note: These recommendations are suitable for steel based materials, for other materials refer to our website www.roof.co.nz.
Other fixing methods may be applicable in some circumstances.

Guide to minimum radius (m)			
	.55 mm BMT	0.90 mm	2400g/m² (1.5 mm)
Zincalume®	90		
Galvanised	90		
H36 5052 Aluminium		90	
Translucent GRP Natural Lighting			20
NOTE: .40 mm BMT Steel substrate and 0.70 mm Aluminium substrate are not recommended for drape curving.			

Curving

Minimum pitch of drape-curved roofing is primarily governed by the overall appearance of the sheeting after installation. A tight radius may lead to distortion, and Roofing Industries should be consulted for Purlin spacing and minimum radius during the design phase.

Ordering

Roofing Industries staff can provide technical assistance to ensure accurate ordering of roofing and accessories thereby avoiding costly errors. Maxispan® is delivered cut to length subject to transport restrictions.

Handling and storage

- On delivery, visually inspect sheets for damage.
- Store Maxispan® and accessories on evenly spaced and supportive dunnage, clear of the ground and under cover. If packs become wet and the product not used immediately, separate the sheets to allow air circulation and drying.
- Do not drag sheets across each other.
- Long lengths of roofing should be lifted onto the roof using an approved load spreading beam.
- If protected with strippable plastic film, keep under cover and remove as the product is being installed.

Installation

Prior to commencing the project, refer to Roofing Industries technical literature and website www.roof.co.nz. Failure to install Maxispan® and accessories to industry requirements will void any warranty.

Maintenance

Regular maintenance will extend the life of the roof and accessories. Industry maintenance guide(s) are available from Roofing Industries and should be consulted in order that warranty conditions are fulfilled.

Warranties

Warranties meet the statutory requirements of the NZ Building Code, are available on request and reflect our New Zealand owned and operated company, test facilities and local climatic conditions. Sample warranties are available at website www.roof.co.nz.

Auckland (Head Office) Roofing Industries Ltd. 5 John Glenn Avenue, North Harbour. PO Box 302-385 North Harbour 0751. **Ph: (09) 414 4585 Fax: (09) 414 4586 E: office@roof.co.nz**
Whangarei Roofing Industries (Northland) Ltd. 38 Winger Crescent, Kamo, Whangarei. PO Box 883 Whangarei 0112. **Ph: (09) 437 2040 Fax: (09) 437 5010 E: northland@roof.co.nz**
Pukekohe Franklin Metal Folding & Roofing Ltd. 212 Manukau Road, Pukekohe, South Auckland. **Ph: (09) 238 0050 Fax: (09) 238 6639 E: sales@franklinmetalfolding.co.nz**
Hamilton Roofing Industries (Waikato) Ltd. 78 Sunshine Avenue, Te Rapa, Hamilton. PO Box 20281 Te Rapa, Hamilton 3241. **Ph: (07) 849 5115 Fax: (07) 849 2115 E: waikato@roof.co.nz**
Taupo Roofing Industries (Taupo) Ltd. 1158 Rakaunui Road, Taupo. PO Box 408 Taupo 3351. **Ph: (07) 376 7971 Fax: (07) 376 7972 E: taupo@roof.co.nz**
Palmerston North Roofing Industries (Central) Ltd. 653 Tremaine Avenue, Palmerston North. PO Box 4584 Palmerston North 4410. **Ph: (06) 353 8480 Fax: (06) 353 8470 E: central@roof.co.nz**
Wellington Roofing Industries (Wellington) Ltd. 2 Cashew Street, Grenada North, Wellington 5028. **Ph: (04) 238 4390 Fax: (04) 238 4391 E: wgtn@roof.co.nz**
South Island Roofing Industries Ltd. 220a Annex Road, Middleton, PO Box 6248 Upper Riccarton, Christchurch 8442. **Ph: (03) 339 2324 Fax: (03) 339 2325 E: south@roof.co.nz**

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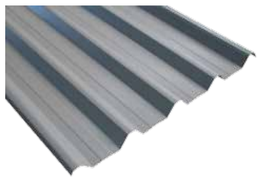
FEBRUARY 2014

MAXISPAN®



Description

Developed by some of New Zealand's most accomplished roofing professionals who have been actively involved in the roofing industry for over quarter of a century, Maxispan® is a strong and aesthetically pleasing high rib roofing and cladding profile. The profile incorporates a number of innovative practical design features and provides significant advantages to building designers.

Features

- Convex ribs provide strength and water run-off away from the fixings
- Twin capillary breaks on the lap
- Purpose designed leg provides support to the underlap
- Installers feet fit neatly in the pan avoiding damage to the ribs
- Can be "reverse run" and the swage removed for wall cladding application (.55 mm BMT recommended)
- Lap can be altered in the reverse run process to ensure improved aesthetics and water tightness
- High volume water carrying capacity
- Wide cover reduces installation time
- Superior spanning at low pitch
- Supported by Wind and Concentrated Load Span Design graphs derived from extensive industry test rig trials

Applications

- For industrial and commercial roofing and cladding projects where both high spanning and low pitch is required
- Drape curving
- Carports
- Rural and lifestyle roofing and cladding

Building Design / Performance Criteria / Product selection

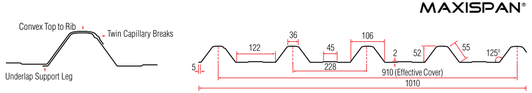
During the design of buildings, it is necessary for the designer to take into account a number of issues to ensure that the most appropriate roofing and cladding product is chosen.

Whilst aesthetics and product availability do play a part, the chosen profile must meet certain performance criteria. These are centered around the profile's ability to shed water from the roof and the ability of the product to span purlin and girt spacings and meet design criteria. The minimum pitch for this profile is outlined elsewhere within this literature.

In terms of purlin spans and girt spacing it is necessary to follow due process.

If a building is being designed in accordance with E2/AS1 and roofing and cladding products as covered by that document are chosen, then it is necessary for the design spans to comply with those of E2/AS1.

However where a building is outside of the scope of E2/AS1 and the building or parts thereof are of specific design then it is necessary for the roofing and cladding to be suitable for the design and vice versa.



Wind Load Span Design Graph

Loadings referred to in Roofing Industries graphs are the result of testing to a serviceability limit state which is more conservative than an ultimate limit state as quoted by some manufacturers.

Our Design Graphs are presented in a form to allow the designer to select suitable products and maximum purlin spacings.

It is first necessary for the designer to calculate the design wind load for the roofing and cladding in accordance with generally acceptable practice, by reference to AS/NZS 1170 and/or NZS 3604 as appropriate. For a fuller explanation of this refer to the NZ Metal Roof and Wall Cladding Code of Practice.

For most roof installations the purlin spacings will be limited by the trafficable limitations of the profile. However for roofs that are not able to be walked on and for wall cladding applications, these limitations may be exceeded providing the design wind loading criteria is met. However this should be done with caution as it may require considerable extra secondary fasteners within the laps.

The designer should always take into account in areas of heavy roof traffic, or where the roofing supports such items as air conditioning units, and in these instances purlin spacing should be reduced accordingly.

Reference should be made to the notes in the graphs.

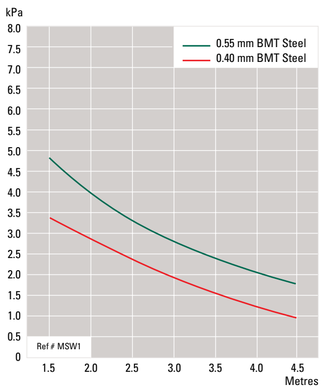
It is our recommendation that for commercial and industrial roofing applications .55 mm BMT material is used as it has more resilience to damage, particularly by other trades.

Maxispan® G550 Steel

Wall Cladding Application

Primary Fixing Method:
(Also refer to further content on the rear page)

Fixed every purlin, every pan with approved 12 gauge screws and neos.



- Intermediate span in metres.
- End spans to be a maximum of 2/3 of this span.
- Type 3 Classification.

Other fixing patterns may be used, however these will alter the design load.

Note: For wall cladding on industrial and commercial buildings it is often more appropriate to use a medium height profile such as Multirib™.

Refer to www.roof.co.nz for further details and other substrates. Tested in accordance with the NZMRM test procedure. Note: Wind Load Span Graph is based on information derived from extensive testing of Maxispan® on the MRM Test rig, utilising variations in fasteners, fixings and patterns covering both roofing and cladding applications. Classification Type is from the NZ Metal Roof and Wall Cladding Code of Practice.

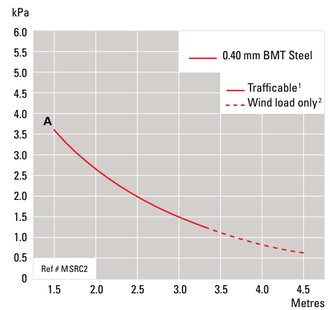
Wind & Concentrated Load Span Design Graph

Maxispan® G550 Steel .40 mm BMT

Roofing Application

Primary Fixing Method:
(Also refer to further content on the rear page)

Fixed every purlin on every rib with approved screws and neos, load spreading profiled metal washers and 36 mm EPDM washers.



- Intermediate span in metres.
- End spans to be a maximum of 2/3 of this span.

1 The solid line represents where walking is permitted within 300 mm of the purlin line or in the pan of the profile. Therefore for a normal roof, and providing wind load requirements are met, purlin spans are limited to:

Maximum Spans	0.40 mm BMT
Intermediate	3.3 metres
End	2.2 metres
Type 2B *"Restricted Access"* Classification	

2 The broken line represents untrafficable roof areas and relates to wind loading only with Type 3 Classification.

In areas of heavy roof traffic, or where the roofing supports such items as air conditioning units, purlin spacing should be reduced accordingly.

For Type A "Unrestricted Access" Classification, refer to Roofing Industries.

Other fixing patterns may be used, however these will alter the design load for wind only.

Refer to www.roof.co.nz for further details and other substrates. Tested in accordance with the NZMRM test procedure. Note: Wind & Concentrated Load Span Design Graph is based on information derived from extensive testing of Maxispan® on the MRM Test rig, utilising variations in fasteners, fixings and patterns covering both roofing and cladding applications. Classification Type is from the NZ Metal Roof and Wall Cladding Code of Practice.