Wind & Concentrated Load Span Design Graph

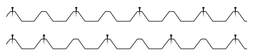
RT7® G550 Steel .55 mm BMT

Roofing Application

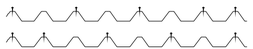
Primary Fixing Methods:

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

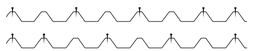
B Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, load spreading profiled metal washers and EPDM washers. End purlins to be fixed every rib.

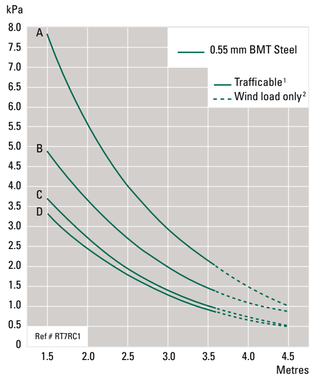


C Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, and alloy embossed washers. End purlins to be fixed every rib.



D Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, without washers. End purlins 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 spreading the live load over 2 ribs. Therefore for a normal roof, and providing wind load requirements are met, purlin spans are limited to:

Maximum Spans	0.55 mm BMT
Intermediate	3.6 metres
End	2.4 metres
Type 2B *"Restricted Access"* Classification	

2 The broken line represents untrafficable roof areas and is wind loading only and has a 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 RT7® 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.

RT7®

Roof Pitch

The minimum pitch for RT7® is 3° for combined lengths up to 40 mtrs. For runs in excess of this contact Roofing Industries. Design pitches may need to allow for deflection of the structure

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
- Pre-painted 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

For information on Aluminium, Stainless Steel and Copper RT7®, contact Roofing Industries.

Durability

Selection of the correct grade of material and appropriate surface coating is imperative to ensure RT7® 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

RT7® is available as glass reinforced translucent roof and wall lighting.

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 8 metres, and for light coloured and Zincalume® roof sheets up to and including 12 metres, solid fix.
- For sheet lengths in excess of the above, oversize holes should be used for the remainder of the sheet and approved load spreading profiled or alloy embossed washers used for the entire sheet.
- Fix every crest to: Ridge, Hip, Valley, Gutter and Periphery areas.

Standard Primary Fixings are:

For Timber Purlins use 14 x 75 Timbertite® Class 4 Screws with neos and with (or in some cases without) appropriate washers as above.

For Steel Purlins use 12 x 65 Steeltite® Class 4 Screws with neos and with (or in some cases without) appropriate washers as above.

Walling application

Using the appropriate fixing pattern from the Wind Load Span Design Graph, fix in the pan adjacent to the ribs using 12 gauge Class 4 Steeltites® 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.

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.

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.

Guide to minimum radius (m)			
Base Material	.55 mm BMT	0.90 mm	2400g/m² (1.5 mm)
Zincalume®	50		
Galvanised	50		
H36 5052 Aluminium		50	
Translucent GRP Natural Lighting			14
NOTE: .40 mm BMT Steel substrate and 0.70 mm Aluminium substrate are not recommended for drape curving.			

Ordering

Roofing Industries staff can provide technical assistance to ensure accurate ordering of roofing and accessories thereby avoiding costly errors. RT7® is delivered cut to length subject to transport restrictions.

Handling and storage

- On delivery, visually inspect sheets for damage.
- Store RT7® 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 RT7® and accessories to industry requirements will void any warranty.

Maintenance

Maintenance Guides are available 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. Available at www.roof.co.nz.

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RT7®

Description

RT7® is a visually appealing medium rib-height trapezoidal roofing profile, has an exceptional strength to weight ratio and demonstrates impressive spanning capability and water carrying capacity at a relatively low pitch.

Manufactured from high tensile material and supplied in a range of substrates and surface finishes, RT7® lends itself to a wide range of design options, including curving, and is equally practical when utilised as commercial, industrial or residential roofing and cladding.

Features

- A purpose designed stiffened under-lapping support leg offers:
  - Extra support for the over-lapping edge
  - Prevents separation of the lapping edge
  - Prevents water ingress at the laps
  - Prevents deformation when screwing off the roof
  - Roofing installer friendly and saves on installation costs
- As the laps remain closed RT7® provides uniform lines
- Can be drape curved
- Capillary groove to lapping edge
- Available reverse-run
- Bold and visually appealing

Applications

- Commercial and industrial roofing
- Residential roofing
- Cladding in standard or reverse run profile
- Drape curving
- Fencing
- Garage door cladding

Building Design / Performance Criteria / Product selection

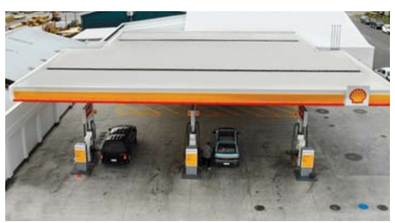
During the design of buildings, it is necessary for the designer to take into account a number of factors to ensure that the most appropriate roofing and cladding product is chosen.

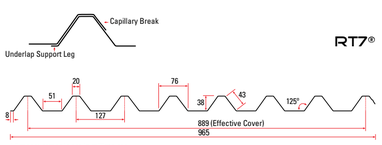
Whilst aesthetics and product availability do play a part, the chosen profile must meet certain performance criteria. These are centered around the profile's ability to shed water from the roof and the ability of the product to span purlin and girt spacings and meet design criteria. The minimum pitch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





All measurements are in millimetres

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: 2002, and/or NZS 3604: 1999 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.

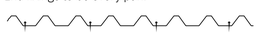
Reference should be made to the notes in the graphs.

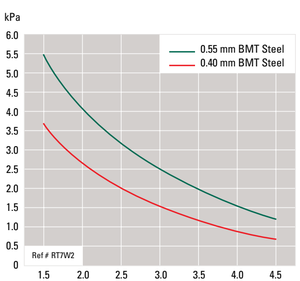
It is our recommendation that for commercial and industrial roofing applications that .55 mm BMT is used as it has more resilience to damage, particularly by other trades.

RT7® G550 Steel

Wall Cladding Application

Primary Fixing Method:
Fixed in the pan with approved 12 gauge screws and neos. Pattern, (hit-miss-hit-miss-hit-miss-hit). End fixings to be every pan.





- 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 but these will alter the design load.

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 RT7® 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

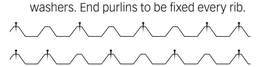
RT7® G550 Steel .40 mm BMT

Roofing Application

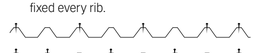
Primary Fixing Methods:

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

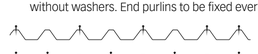
B Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, load spreading profiled metal washers and EPDM washers. End purlins to be fixed every rib.

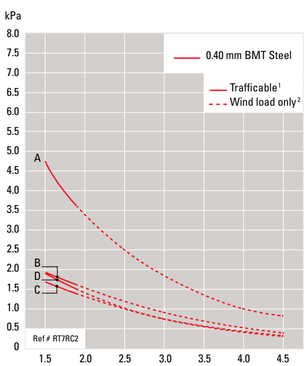


C Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, and alloy embossed washers. End purlins to be fixed every rib.



D Fixed every purlin with a staggered pattern, (hit-miss-hit-miss-hit-miss-hit-hit) and alternate pattern, (hit-hit-miss-hit-miss-hit-miss-hit) to alternate purlins with approved screws and neos, without washers. End purlins 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 spreading the live load over 2 ribs. Therefore for a normal roof, and providing wind load requirements are met, purlin spans are limited to:

Maximum Spans	0.40 mm BMT
Intermediate	1.9 metres
End	1.3 metres
Type 2B *"Restricted Access"* Classification	

2 The broken line represents untrafficable roof areas and is wind loading only and has a 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 RT7® 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.