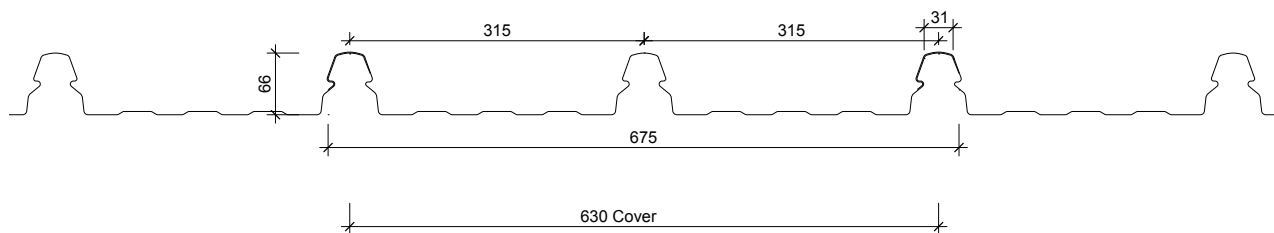


DIMONDEK® 630 PROFILE PERFORMANCE



| | |
|------------------|-------------------|
| Cover (mm) | 630 |
| Sheet width (mm) | 675 |
| Minimum Pitch | 3° (approx. 1:20) |

All dimensions given are nominal

Sheet Tolerances

Sheet width: ±5mm

Sheet length: +10mm, -0mm.

| Material Options | Steel | |
|--|--------------------|------|
| | Thickness (BMT) mm | 0.48 |
| Nominal weight/lineal metre (kg/m) | 3.85 | 4.22 |
| Drape curved roof - min. radius (m)* | 250 | 250 |
| Purlin spacings for drape curved roof (m)(1) | 2400 | 3300 |
| Machine crimp curved - roof min. radius (mm) | n/a | n/a |
| Unsupported overhang (2)(mm) | 150 | 250 |

*To achieve a high level of appearance on the completed roof, it is important that the purlin layout alignment is laid within the tolerances as stated in Section 2.4.2.3.1.

(1) Recommended maximum purlin spacing 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: Mobile machine based in Hamilton, and can be moved to site when required.

Sheet lengths: Dimondek® 630 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.
- Possibility of manufacturing sheets on site, sheets length up to 100m long are possible, when rolled on site.

Call 0800 DIMOND to discuss.

DIMONDEK® 630 LIMIT STATE LOAD / SPAN CAPACITY CHART

(span in mm, distributed ultimate loads in kPa)

Serviceability Category

| | | Unrestricted-Access Roof | | | | Restricted-Access Roof | | | Non-Access Roof or Wall |
|----------------------|-----------------------|--------------------------|------|------|------|------------------------|------|------|-------------------------|
| G550 Steel 0.48mm | End Span | | | 1400 | 1600 | 1800 | 2000 | 2200 | 2400 |
| | Internal Span | | | 2100 | 2400 | 2700 | 3000 | 3300 | 3600 |
| | Ultimate ⁵ | | | 2.6 | 2.3 | 2.0 | 1.8 | 1.7 | 1.4 |
| G550 Steel 0.55mm | End Span | 1500 | 1700 | 2000 | 2200 | 2400 | 2600 | 2800 | See Note 4 |
| | Internal Span | 2300 | 2600 | 3000 | 3300 | 3600 | 3900 | 4200 | |
| | Ultimate ⁵ | 2.6 | 2.3 | 1.9 | 1.8 | 1.6 | 1.4 | 1.2 | |

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 clip fastening every rib at every purlin.
- Loads given are limited to a maximum of 2.6 kPa. If design requirements exceed this limit, contact Dimond for specific advice.
- Spans beyond 3.6m are not recommended.
- For the purposes of serviceability design, the serviceability limit, limited by permanent rib deformation, occurs essentially at the same load as ultimate failure which is the point of disengagement of the roof with the clip.
- End span capacities given in this table are based on the end span being $\frac{2}{3}$ 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 fastener withdrawal resulting in sheet detachment due to wind up-lift (outward) loads.
- System Design**
The span capacity of Dimondek 630 is determined from the Dimondek 630 Limit State Load/Span Capacity Chart using the section of the chart appropriate to the grade and type of material, and to the category of serviceability selected from the three categories below. It is recommended that to obtain a dependable design strength capacity for the ultimate limit state, a reduction factor of $\phi = 0.8$ is applied.
The capacities given do not apply for cyclonic 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. |
- 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

Dimondek® 630 is clip-fastened to either timber or steel purlins. The use of the appropriate type and length of fastener for clip fixing will ensure failure by fastener pull out will not occur under loads within the scope of the Limit State Load / Span Capacity Chart.

| Purlin Type | Clip Fastener |
|-------------|-------------------------------|
| Timber | Roofzip M6 x 50 HG-Z4 |
| Steel | 12g x 30mm hex head tek screw |

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

The Dimondek® 630 perimeter clip must always be used over the first rib and clip on the first laid sheet.

For screw size range refer Section 2.2.3.1.

The Limit State Load / Span Capacity Chart is based on every rib being clip fastened to every purlin or girt.

Design Example

Restricted access roof, 0.55mm G550 steel Dimondek® 630 has a maximum end span of 2800mm and a maximum internal span of 4200mm. The following distributed load capacities apply.

| | |
|---------------|---------|
| End Span | 2800mm |
| Internal Span | 4200mm |
| Ultimate | 1.2 kPa |