

# CYCLONIC STEEL ROOF BATTEN (REGION C)

## Product Description

0.75mm BMT ASI397/G550 AZI50

## Design Criteria

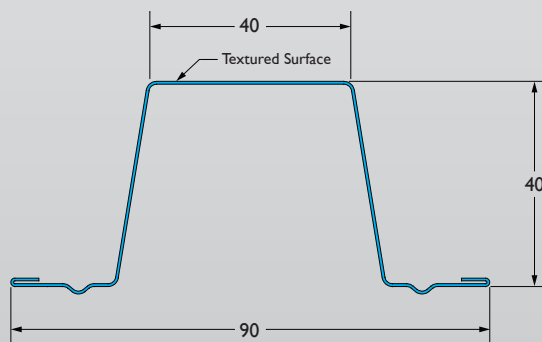
The following criteria were used in development of the tables:

- Region C with a design return period of 500 years
- $V_R = F_c 66m/s$  (strength limit state), with  $F_c = 1.05$
- $M_s/M_t/M_d = 1.0$
- Local pressure factors:
  - General areas,  $K_I = 1.0$
  - Roof edges,  $K_I = 2.0$

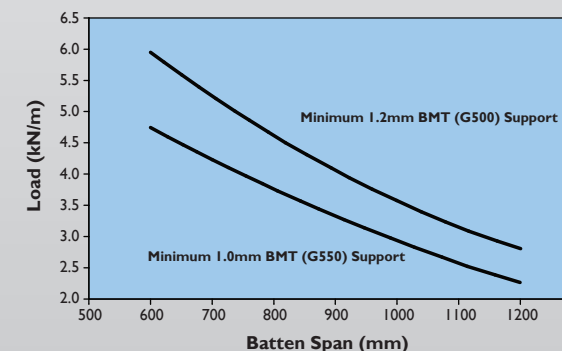
| Height (m) | Terrain/height Multiplier ( $M_z, cat$ ) |      |      |      |
|------------|--|------|------|------|
|            | 1.0                                      | 2.0  | 2.5  | 3.0  |
| 5.0        | 1.05                                     | 0.91 | 0.87 | 0.83 |

Note: 5.0m is based on average roof height.

Pressure Coefficients:  
Internal  $C_{p,i} = +0.7$   
External  $C_{p,e} = -0.9$   
 $K_c = 0.9$



## Cyclonic Batten Performance



## Limitations

- Design loads and spacing are based on roof battens being continuous over minimum two spans. Cyclonic Roof Batten detail sheet is based on use with Stratco CGI and Superdek crest fixed profiles.
- Similar crest fixed roof cladding profiles may be used on Stratco Cyclonic Batten, provided these profiles and their fixing screws have demonstrated performance to Low-High-Low cyclic testing requirements when fixed to 0.75mm BMT G550 steel supports.
- Roof batten spacing may be limited by the maximum allowable roof sheeting spans. Refer to the relevant roof cladding sheet for spans and appropriate fixing requirements.
- Batten spacing has been determined for domestic application, for alternative applications (or conditions outside of the design criteria or limitations below), utilise the Design Loads table to calculate relevant batten spacing.
- House limitations:
  - Maximum Batten Spacing table based on the following limitations:
    - average roof height shall not exceed 5m with maximum 8.5m to the highest roof point.
    - maximum width shall not exceed 16m (excluding eaves) and length shall not exceed five times the width.
    - maximum roof pitch shall not exceed 35 degrees.
- For roof slopes  $<10^\circ$ , a local pressure factor of 3.0 applies within 1200mm of eaves corners. Utilise the Design Loads table to determine if batten spacing needs to reduce in these areas.

## Notes:

- Testing in accordance with the Building Code of Australia (BCA) - Low-High-Low Pressure Testing.
- Design Criteria determined in accordance with AS/NZS1170.2 2011 & AS4055 2012.
- Cyclonic Batten Testing, Report No. 146, 11/2011

## Fastener Details

| Material | Support        | Fastener  |
|----------|----------------|---|
| Steel    | Min 1.0mm BMT  | 14-10 x 25mm hex head self drilling screws                            |
| Timber   | Hardwood (F11) | Minimum 12 gauge timber fix screws embedded at least 35mm into timber |
|          | Softwood (F5)  | Minimum 12 gauge timber fix screws embedded at least 35mm into timber |

Note: Roof Battens are secured with two screws per rafter or truss.

## Maximum Batten Spacing into 1.0mm Support (mm)

| Terrain Category | $P_z$ (kPa) | General Areas             |      |      | Roof Edges*               |      |      |     |
|------------------|-------------|---------------------------|------|------|---------------------------|------|------|-----|
|                  |             | Rafter/Truss Spacing (mm) |      |      | Rafter/Truss Spacing (mm) |      |      |     |
|                  |             | 600                       | 900  | 1200 | 600                       | 900  | 1200 |     |
| 1.0              | 4.57        | 1300                      | 720  | 490  | 7.15                      | 660  | 460  | 310 |
| 2.0              | 3.44        | 1380                      | 960  | 650  | 5.37                      | 880  | 610  | 420 |
| 2.5              | 3.14        | 1490                      | 1040 | 710  | 4.91                      | 950  | 670  | 450 |
| 3.0              | 2.86        | 1650                      | 1160 | 790  | 4.47                      | 1060 | 740  | 500 |

\* Spacing is appropriate for areas within 1200mm of roof edge.

## Design Loads

| Span                           | 600  | 700  | 800  | 900  | 1000 | 1100 | 1200 |
|--------------------------------|------|------|------|------|------|------|------|
| Load, 1.0mm BMT Support (kN/m) | 4.74 | 4.23 | 3.76 | 3.33 | 2.93 | 2.58 | 2.26 |
| Load, 1.2mm BMT Support (kN/m) | 5.95 | 5.25 | 4.62 | 4.06 | 3.57 | 3.15 | 2.81 |

## Maximum Batten Spacing into 1.2mm Support (mm)

| Terrain Category | $P_z$ (kPa) | General Areas             |      |      | Roof Edges*               |      |      |     |
|------------------|-------------|---------------------------|------|------|---------------------------|------|------|-----|
|                  |             | Rafter/Truss Spacing (mm) |      |      | Rafter/Truss Spacing (mm) |      |      |     |
|                  |             | 600                       | 900  | 1200 | 600                       | 900  | 1200 |     |
| 1.0              | 4.57        | 1300                      | 880  | 610  | 7.15                      | 830  | 560  | 390 |
| 2.0              | 3.44        | 1730                      | 1180 | 810  | 5.37                      | 1100 | 750  | 520 |
| 2.5              | 3.14        | 1870                      | 1270 | 880  | 4.91                      | 1190 | 810  | 560 |
| 3.0              | 2.86        | 2080                      | 1410 | 980  | 4.47                      | 1330 | 900  | 620 |

\* Spacing is appropriate for areas within 1200mm of roof edge.

# CYCLONIC STEEL ROOF BATTEN (REGION D)

## Product Description

0.75mm BMT AS1397/G550 AZ150

## Design Criteria

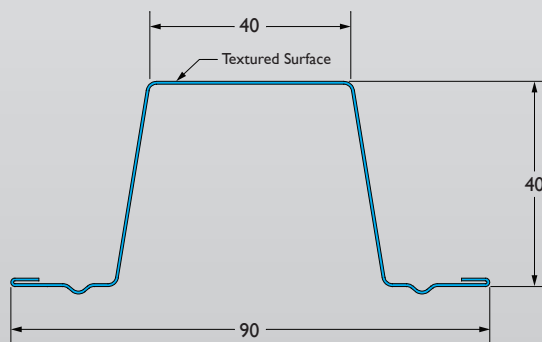
The following criteria were used in development of the tables:

- Region C with a design return period of 500 years
- $V_R = F_D 80\text{m/s}$  (strength limit state), with  $F_D = 1.10$
- $M_s/M_t/M_d = 1.0$
- Local pressure factors:
  - General areas,  $K_1 = 1.0$
  - Roof edges,  $K_1 = 2.0$

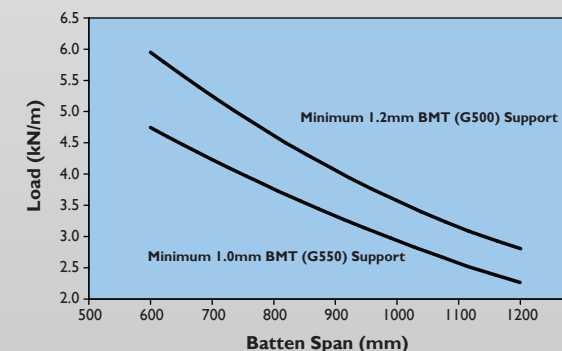
| Height (m) | Terrain/height Multiplier ( $M_z, \text{cat}$ ) |      |      |      |
|------------|---|------|------|------|
|            | 1.0   | 2.0  | 2.5  | 3.0  |
| 5.0        | 1.05  | 0.91 | 0.87 | 0.83 |

Note: 5.0m is based on average roof height.

Pressure Coefficients:  
Internal  $C_{p,i} = +0.7$   
External  $C_{p,e} = -0.9$   
 $K_c = 0.9$



## Cyclonic Batten Performance



## Limitations

- Design loads and spacing are based on roof battens being continuous over minimum two spans. Cyclonic Roof Batten detail sheet is based on use with Stratco CGI and Superdek crest fixed profiles.
- Similar crest fixed roof cladding profiles may be used on Stratco Cyclonic Batten, provided these profiles and their fixing screws have demonstrated performance to Low-High-Low cyclic testing requirements when fixed to 0.75mm BMT G550 steel supports.
- Roof batten spacing may be limited by the maximum allowable roof sheeting spans. Refer to the relevant roof cladding sheet for spans and appropriate fixing requirements.
- Batten spacing has been determined for domestic application, for alternative applications (or conditions outside of the design criteria or limitations below), utilise the Design Loads table to calculate relevant batten spacing.
- House limitations:
  - Maximum Batten Spacing table based on the following limitations:
    - average roof height shall not exceed 5m with maximum 8.5m to the highest roof point.
    - maximum width shall not exceed 16m (excluding eaves) and length shall not exceed five times the width.
    - maximum roof pitch shall not exceed 35 degrees.
- For roof slopes  $<10^\circ$ , a local pressure factor of 3.0 applies within 1200mm of eaves corners. Utilise the Design Loads table to determine if batten spacing needs to reduce in these areas.

## Notes:

- Testing in accordance with the Building Code of Australia (BCA) - Low-High-Low Pressure Testing.
- Design Criteria determined in accordance with AS/NZS1170.2 2011 & AS4055 2012.
- Cyclonic Batten Testing, Report No. 146, 11/2011

## Fastener Details

|        |                |   |
|--------|----------------|---|
| Steel  | Min 1.0mm BMT  | 14-10 x 25mm hex head self drilling screws                            |
| Timber | Hardwood (F11) | Minimum 12 gauge timber fix screws embedded at least 35mm into timber |
|        | Softwood (F5)  | Minimum 12 gauge timber fix screws embedded at least 35mm into timber |

Note: Roof Battens are secured with two screws per rafter or truss.

## Maximum Batten Spacing into 1.0mm Support (mm)

| Terrain Category | $P_z$ (kPa) | General Areas             |     |      | Roof Edges*               |     |      |     |
|------------------|-------------|---------------------------|-----|------|---------------------------|-----|------|-----|
|                  |             | Rafter/Truss Spacing (mm) |     |      | Rafter/Truss Spacing (mm) |     |      |     |
|                  |             | 600                       | 900 | 1200 | 600                       | 900 | 1200 |     |
| 1.0              | 7.38        | 640                       | 450 | 300  | 11.53                     | 410 | 280  | 190 |
| 2.0              | 5.54        | 850                       | 600 | 400  | 8.66                      | 540 | 380  | 260 |
| 2.5              | 5.06        | 920                       | 640 | 440  | 7.91                      | 590 | 410  | 280 |
| 3.0              | 4.61        | 1020                      | 720 | 490  | 7.20                      | 650 | 460  | 310 |

\* Spacing is appropriate for areas within 1200mm of roof edge.

## Design Loads

| Span                           | 600  | 700  | 800  | 900  | 1000 | 1100 | 1200 |
|--------------------------------|------|------|------|------|------|------|------|
| Load, 1.0mm BMT Support (kN/m) | 4.74 | 4.23 | 3.76 | 3.33 | 2.93 | 2.58 | 2.26 |
| Load, 1.2mm BMT Support (kN/m) | 5.95 | 5.25 | 4.62 | 4.06 | 3.57 | 3.15 | 2.81 |

## Maximum Batten Spacing into 1.2mm Support (mm)

| Terrain Category | $P_z$ (kPa) | General Areas             |     |      | Roof Edges*               |     |      |     |
|------------------|-------------|---------------------------|-----|------|---------------------------|-----|------|-----|
|                  |             | Rafter/Truss Spacing (mm) |     |      | Rafter/Truss Spacing (mm) |     |      |     |
|                  |             | 600                       | 900 | 1200 | 600                       | 900 | 1200 |     |
| 1.0              | 7.38        | 800                       | 550 | 380  | 11.53                     | 510 | 350  | 240 |
| 2.0              | 5.54        | 1070                      | 730 | 500  | 8.66                      | 680 | 460  | 320 |
| 2.5              | 5.06        | 1170                      | 800 | 550  | 7.91                      | 750 | 510  | 350 |
| 3.0              | 4.61        | 1290                      | 880 | 600  | 7.20                      | 820 | 560  | 380 |

\* Spacing is appropriate for areas within 1200mm of roof edge.