

IN ACCORDANCE WITH NCC VOLUME 2 (SECTION P3.10.1), THIS PRODUCT SATISFIES PERFORMANCE REQUIREMENT P2.1.1 FOR CONSTRUCTION IN A HIGH WIND AREA.

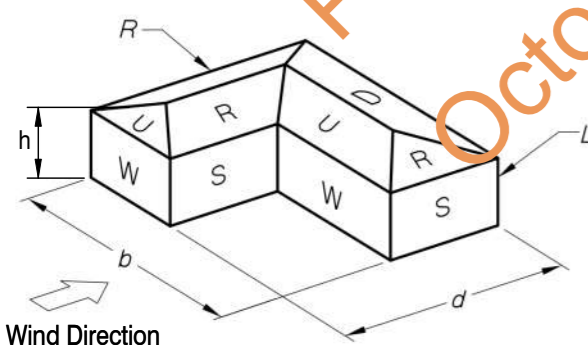
**MATERIAL SPECIFICATION**  
 0.75mm BMT G550 High Tensile Steel to AS1397.  
 DC190 ZAM or AZ150 anti corrosion finish.

**SUBSTRATE**  
 Hardwood timber joint grade J2 or better.  
 94x34mm minimum rafter / truss size.  
 Timber to be sound without splitting during installation.

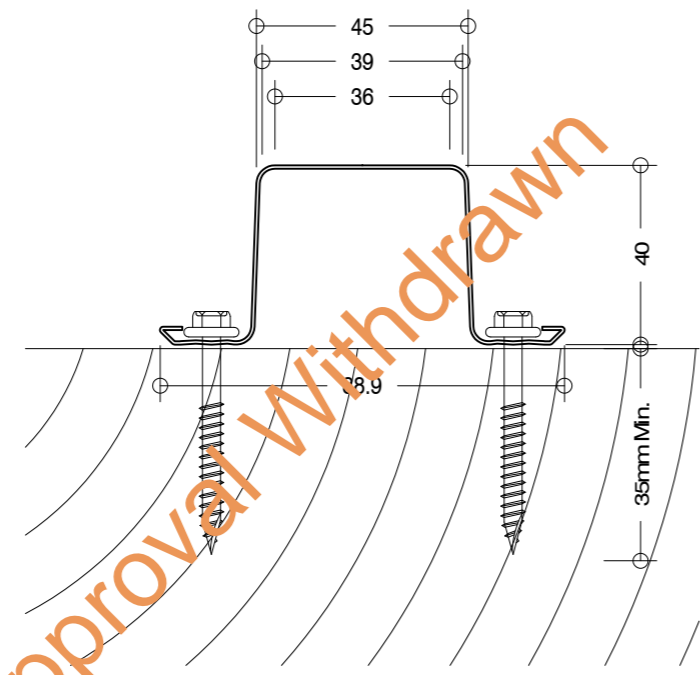
**FASTENERS**  
 2 off No.12-11 type 17 class 4 finish self drilling screws.  
 Minimum thread embedment 35mm.

| Ultimate Design Load Capacities |                             |
|---------------------------------|-----------------------------|
| SPAN                            | DESIGN LOAD kN/m (Ultimate) |
| 600                             | 5.274                       |
| 700                             | 5.130                       |
| 800                             | 4.986                       |
| 900                             | 4.842                       |
| 1000                            | 4.431                       |
| 1100                            | 4.020                       |
| 1200                            | 3.609                       |

Tables based on triple span configuration.  
 For double span configuration reduce tabulated spacings to 85% of tabulated values.



| h/d Limits for Cp,e Magnitude ≤ -0.9 |           |
|--------------------------------------|-----------|
| Roof Slope                           | h/d limit |
| ≤ 10°                                | ≤ 0.5     |
| 12°                                  | ≤ 0.6     |
| 14°                                  | ≤ 0.75    |
| 15°                                  | ≤ 0.833   |
| 16°                                  | ≤ 0.883   |
| > 18°                                | no limit  |



**NOTE: - MAXIMUM SPAN LIMITATIONS**  
 Maximum end spans for 0.42bmt Corrugated Sheeting not to exceed 900mm and 1200mm for internal spans.  
 Maximum end spans for 0.42bmt Trapezoidal Sheeting not to exceed 1300mm and 1600mm for internal spans.

**REGION C  
 MAXIMUM ALLOWABLE BATTEN SPACINGS**

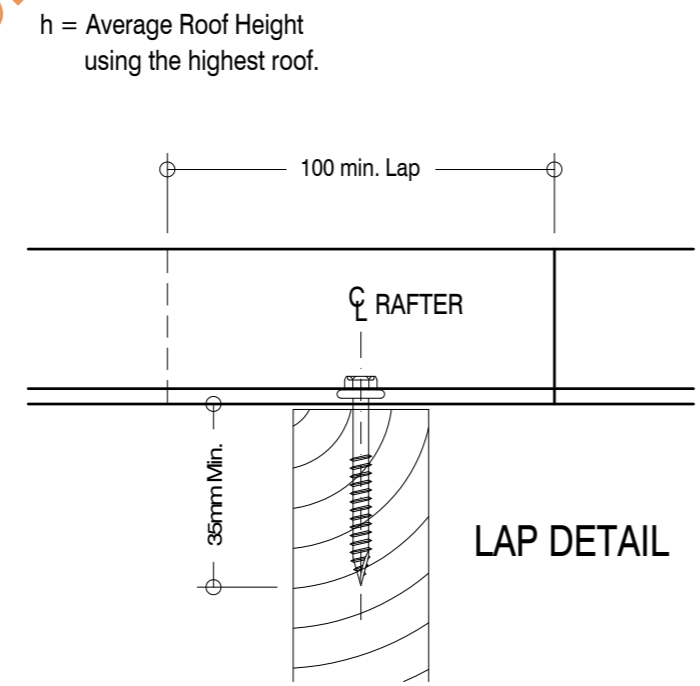
| Average Roof Height (m) | KI  | TRUSS / RAFTER SPACING |       |       |       |       |       |        |       |       |
|-------------------------|-----|------------------------|-------|-------|-------|-------|-------|--------|-------|-------|
|                         |     | 600mm                  |       |       | 900mm |       |       | 1200mm |       |       |
|                         |     | TC2.0                  | TC2.5 | TC3.0 | TC2.0 | TC2.5 | TC3.0 | TC2.0  | TC2.5 | TC3.0 |
| ≤ 3m                    | 1.0 | 1412                   | 1583  | 1600  | 1297  | 1454  | 1600  | 966    | 1083  | 1223  |
|                         | 1.5 | 1102                   | 1236  | 1395  | 1012  | 1135  | 1281  | 754    | 846   | 955   |
|                         | 2.0 | 904                    | 1013  | 1144  | 830   | 930   | 1050  | 619    | 693   | 783   |
| 4m                      | 1.0 | 1337                   | 1538  | 1600  | 1227  | 1412  | 1600  | 915    | 1052  | 1223  |
|                         | 1.5 | 1043                   | 1200  | 1395  | 958   | 1102  | 1281  | 714    | 821   | 955   |
|                         | 2.0 | 856                    | 984   | 1144  | 786   | 904   | 1050  | 586    | 673   | 783   |
| 5m                      | 1.0 | 1268                   | 1494  | 1600  | 1164  | 1372  | 1600  | 867    | 1022  | 1223  |
|                         | 1.5 | 989                    | 1166  | 1395  | 908   | 1071  | 1281  | 677    | 798   | 955   |
|                         | 2.0 | 811                    | 956   | 1144  | 745   | 878   | 1050  | 555    | 654   | 783   |
| 6m                      | 1.0 | 1241                   | 1447  | 1600  | 1140  | 1329  | 1570  | 849    | 990   | 1170  |
|                         | 1.5 | 969                    | 1130  | 1334  | 889   | 1037  | 1225  | 663    | 773   | 913   |
|                         | 2.0 | 794                    | 926   | 1094  | 729   | 850   | 1005  | 544    | 634   | 749   |
| 7m                      | 1.0 | 1216                   | 1403  | 1600  | 1116  | 1288  | 1503  | 832    | 960   | 1120  |
|                         | 1.5 | 949                    | 1095  | 1277  | 871   | 1005  | 1173  | 649    | 749   | 874   |
|                         | 2.0 | 778                    | 898   | 1048  | 714   | 824   | 962   | 532    | 614   | 717   |
| 8m                      | 1.0 | 1191                   | 1360  | 1569  | 1094  | 1249  | 1440  | 815    | 931   | 1073  |
|                         | 1.5 | 930                    | 1062  | 1224  | 853   | 975   | 1124  | 636    | 727   | 838   |
|                         | 2.0 | 762                    | 871   | 1004  | 700   | 799   | 922   | 522    | 596   | 687   |
| 9m                      | 1.0 | 1167                   | 1320  | 1504  | 1072  | 1212  | 1381  | 799    | 903   | 1029  |
|                         | 1.5 | 911                    | 1030  | 1174  | 836   | 946   | 1078  | 623    | 705   | 803   |
|                         | 2.0 | 747                    | 845   | 963   | 686   | 775   | 884   | 511    | 578   | 659   |
| 10m                     | 1.0 | 1144                   | 1281  | 1444  | 1050  | 1176  | 1326  | 783    | 877   | 988   |
|                         | 1.5 | 893                    | 1000  | 1127  | 820   | 918   | 1035  | 611    | 684   | 771   |
|                         | 2.0 | 732                    | 820   | 924   | 672   | 753   | 849   | 501    | 561   | 632   |

For figures in "italics" refer to limitations note 2 and also adjacent 'Span Limitations Note'  
 Tables based on triple span configuration. Refer adjacent 'Note' for limitations on end/internal spans.  
 For double span configuration reduce tabulated spacings to 85% of tabulated values.  
 KI = 2.0 (from edge to 0.5a) } Where a is the minimum of 0.2 x building width or  
 KI = 1.5 (from edge to 1.0a) } 0.2 x building length or average building height.

**REGION D  
 MAXIMUM ALLOWABLE BATTEN SPACINGS**

| Average Roof Height (m) | KI  | TRUSS / RAFTER SPACING |       |       |       |       |       |        |       |       |
|-------------------------|-----|------------------------|-------|-------|-------|-------|-------|--------|-------|-------|
|                         |     | 600mm                  |       |       | 900mm |       |       | 1200mm |       |       |
|                         |     | TC2.0                  | TC2.5 | TC3.0 | TC2.0 | TC2.5 | TC3.0 | TC2.0  | TC2.5 | TC3.0 |
| ≤ 3m                    | 1.0 | 876                    | 982   | 1108  | 804   | 901   | 1018  | 599    | 672   | 759   |
|                         | 1.5 | 684                    | 766   | 865   | 628   | 704   | 794   | 468    | 524   | 592   |
|                         | 2.0 | 561                    | 628   | 709   | 515   | 577   | 651   | 384    | 430   | 485   |
| 4m                      | 1.0 | 829                    | 954   | 1108  | 761   | 876   | 1018  | 567    | 653   | 759   |
|                         | 1.5 | 647                    | 744   | 865   | 594   | 683   | 794   | 443    | 509   | 592   |
|                         | 2.0 | 531                    | 610   | 709   | 487   | 560   | 651   | 363    | 418   | 485   |
| 5m                      | 1.0 | 786                    | 927   | 1108  | 722   | 851   | 1018  | 538    | 634   | 759   |
|                         | 1.5 | 614                    | 723   | 865   | 563   | 664   | 794   | 420    | 495   | 592   |
|                         | 2.0 | 503                    | 593   | 709   | 462   | 544   | 651   | 344    | 406   | 485   |
| 6m                      | 1.0 | 770                    | 898   | 1060  | 707   | 824   | 973   | 527    | 614   | 726   |
|                         | 1.5 | 601                    | 701   | 827   | 552   | 643   | 760   | 411    | 479   | 566   |
|                         | 2.0 | 493                    | 574   | 679   | 452   | 527   | 623   | 337    | 393   | 464   |
| 7m                      | 1.0 | 754                    | 870   | 1015  | 692   | 799   | 932   | 516    | 595   | 695   |
|                         | 1.5 | 588                    | 679   | 792   | 540   | 623   | 727   | 403    | 465   | 542   |
|                         | 2.0 | 483                    | 557   | 650   | 443   | 511   | 596   | 330    | 381   | 445   |
| 8m                      | 1.0 | 739                    | 844   | 973   | 678   | 775   | 893   | 505    | 577   | 666   |
|                         | 1.5 | 577                    | 658   | 759   | 529   | 605   | 697   | 395    | 451   | 520   |
|                         | 2.0 | 473                    | 540   | 623   | 434   | 496   | 572   | 324    | 369   | 426   |
| 9m                      | 1.0 | 724                    | 818   | 933   | 665   | 751   | 857   | 495    | 560   | 638   |
|                         | 1.5 | 565                    | 639   | 728   | 519   | 586   | 669   | 387    | 437   | 498   |
|                         | 2.0 | 463                    | 524   | 597   | 425   | 481   | 548   | 317    | 358   | 409   |
| 10m                     | 1.0 | 709                    | 794   | 896   | 651   | 729   | 822   | 485    | 544   | 613   |
|                         | 1.5 | 554                    | 620   | 699   | 508   | 569   | 642   | 379    | 424   | 478   |
|                         | 2.0 | 454                    | 508   | 573   | 417   | 467   | 526   | 311    | 348   | 392   |

Tables based on triple span configuration.  
 For double span configuration reduce tabulated spacings to 85% of tabulated values.  
 KI = 2.0 (from edge to 0.5a) } Where a is the minimum of 0.2 x building width or  
 KI = 1.5 (from edge to 1.0a) } 0.2 x building length or average building height.



Product Name  
**Millform Cyclonic Roof Batten**  
 (For Timber Roof Framing Only)

Product Description  
**40mm x 0.75mm BMT G550**  
**DC190 ZAM OR AZ150 FINISH**

Manufacturer's Name  
**Millform Products**

- Design Criteria
- Region = C & D
  - Return Period = 500 years
  - Terrain Category = 2.0, 2.5, 3.0
  - Regional Wind Speed Region C Vr = 69.3m/s  
Regional Wind Speed Region D Vr=88m/s
  - Md = Mt = Ms = 1.0
  - Kc = Ka = Kp = 1.0
  - Cpi = + 0.7, Cpe = -0.9 (refer lower left table)
  - Local Pressure Factors at Roof Edges: KI = 2.0 & 1.5

- Limitations
- Batten spacings may be limited by the maximum allowed roof sheeting spans specified in the roof sheeting DTC.
  - Testing was carried out using a crest fixed Trimdek equivalent roof cladding. Other similar crest fixed roofing profiles may be used provided that they have been tested to LHL requirements fixed to similar 0.75mm G550 roofing battens. *Batten spacings exceeding 1200mm are to be avoided and checked against sheeting DTC. Refer also "Maximum Span Limitations" note on drawing.*
  - Tables are valid up to 10m maximum Height.
  - Average roof height is taken at the midheight of the roof.
  - Cpi = +0.7 applies for buildings on ground.
  - For cases of elevated buildings allowing airflow beneath the building of more than one third of the height of the raised building, or for cases where the magnitude of Cp,e exceeds -0.9 then the pressure in the tables shall be increased in accordance with AS/NZS 1170.2:2011 and the corresponding reduced allowable spans shall be used.

**Accepted for Inclusion**

DTCM ref: **M/338/01**

Notes covering basis of DTC (Relevant test reports etc)

- Design Criteria in accordance with AS/NZS1170.2 2011 Amendment 5 and NCC - Low-High-Low Testing Requirements
- Test report TS637 commissioned at James Cook University - Cyclone Testing Station - 18 July 2006

**\*\*Checking Engineers Certification**  
 Name: Roetek Engineering Pty. Ltd.  
 Rego Number: 52700ES  
 Date: 07-19  
 Signature:

**\*\*Certifying Engineers Certification**  
 Name: Alberto Escobar  
 NT Rego Number: 262228ES  
 Date: 07/19  
 Signature:

Chairman's Signature:

Chairman's Name: **MR PAUL NOWLAND**

Date of Approval: **4/10/2019** Expiry Date: **4/10/2024**

\*\*registered as a structural engineer in Australia      \*\*registered as a structural engineer in Northern Territory