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Our Ref: 2869/K.Z

14 December 2016

Xiamen New Way Energy Technology Co. Ltd.
Room 402, 21 Wanghai Road, Software Park 2
Siming District, Xiamen 361008
China

PV Array Frame Engineering Certification

Installation of New Way Energy Roof Tilt Mount Solar System

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian Building Regulations, have carried out a structural design check of New Way Energy Roof Tilt Mount Solar System installation within Australia. The design check has been based on the information and the schematic drawings of the system components provided by Xiamen New Way Energy Tech Co. Ltd.

We find the Installation of New Way Energy Roof Tilt Mount Solar System for Australian use to be structurally sufficient based on the following conditions:

- Wind loads to AS/NZ1170.2:2011 Admt 3:2013
- Wind region A, B, C, D
- Wind terrain category 2 & 3
- Wind average recurrence interval of 500 years
- Maximum building height 20m
- Maximum PV panel dimensions to be 2000mm x 1000mm
- Maximum weight of the PV panel and array frame to be 15 kg/m²
- Rails to be ATL-TYN-28, ATL-TYN-53 and CG-010
- The roof interface to be New Way Energy tilt leg ATL-TYN-56
- Each PV panel to be installed using 2 rails minimum in all circumstances
- Installation of PV array to be done in accordance with the PV installation manual
- The certification **excludes** assessment of roof structure and PV panels

Refer to attached summary table for interface spacing

NOTES:

- **The recommended spacing nominated in this certification is based on the capacity of the array frame, not the roof structure and PV panel. It is the responsibility of the installer to adopt the most critical spacing.**
- **If any of the above conditions cannot be met, the structural engineer must be notified immediately.**



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Construction is to be carried out strictly in accordance with the manufacturers instructions.
This work was designed in accordance with the provisions of Australian Building Regulations
and in accordance with sound, widely accepted engineering principles.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd

A handwritten signature in blue ink, appearing to read 'Martin Gamble'.

Martin Gamble
Managing Director
MAICD

A handwritten signature in blue ink, appearing to read 'Mudi Ariyaratna'.

Mudi Ariyaratna
B.Eng(Civil)(Hons)Monash, M.Eng&Mgt, MIEAust,
CPEng, NPER, RBP EC-39699, RPEQ- 15899

Structural Design Documentation

**Adjustable Tilt Leg PV Racking System
Interface Spacing Table
According to AS/NZS 1170.2-2011 Amdt 3-2013
with ATL-TYN-28 Rails
within Australia
Terrain Category 2 & 3**

For: Xiamen New Way Energy
Technology Co. Ltd.



Job Number: 2869
Date: 14 December 2016

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ISO 9001:2008 Registered Firm
Certificate No: AU1222

Job No: 2869

Client: Xiamen New Way Energy Technology Co. Ltd.

Project: Adjustable Tilt Leg Interface Spacing Table

Address: within Australia

Australian and New Zealand Standards

AS/NZS 1170. 2011 – Structural Design Actions

Part 0 – General Principles

Part 1 – Permanent imposed and other actions

Part 2 – Wind Actions

AS/NZS 1252 – High Strength Structural Bolting

AS 4055 – Wind Loads for Housing

AS/NZS 1664 – Aluminium Structures

AS 4100 – Steel Structures

AS/NZS 4600 – Cold-Formed Steel Structures

Wind Terrain Category:

WTC 2 & 3

Designed: K.Z

Date: Dec-16

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-28
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 820 | 1256 | 1710 | 2058 | 675 | 1029 | 1395 | 1946 | 610 | 929 | 1258 | 1892 | 576 | 876 | 1185 | 1831 |
| B | 504 | 765 | 1033 | 1590 | 415 | 629 | 848 | 1299 | 376 | 569 | 766 | 1171 | 355 | 537 | 723 | 1103 |
| C | 323 | 511 | 657 | 1049 | 267 | 422 | 541 | 861 | 242 | 382 | 490 | 778 | 228 | 345 | 462 | 702 |
| D | 199 | 314 | 402 | 638 | 165 | 259 | 332 | 525 | 149 | 235 | 301 | 475 | 141 | 212 | 284 | 429 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 448 | 679 | 916 | 1405 | 369 | 559 | 752 | 1150 | 334 | 506 | 680 | 1037 | 316 | 477 | 642 | 978 |
| B | 277 | 418 | 561 | 853 | 229 | 345 | 462 | 702 | 207 | 312 | 419 | 634 | 196 | 295 | 395 | 599 |
| C | 178 | 281 | 360 | 570 | 147 | 232 | 297 | 469 | 134 | 210 | 269 | 425 | 126 | 190 | 254 | 384 |
| D | 110 | 173 | 222 | 350 | 91 | 143 | 183 | 289 | 83 | 130 | 166 | 261 | 78 | 117 | 157 | 236 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 365 | 552 | 743 | 1135 | 301 | 455 | 611 | 931 | 273 | 412 | 553 | 841 | 258 | 389 | 522 | 793 |
| B | 226 | 341 | 457 | 693 | 187 | 281 | 377 | 571 | 169 | 255 | 341 | 516 | 160 | 241 | 322 | 487 |
| C | 146 | 229 | 293 | 464 | 120 | 189 | 242 | 382 | 109 | 172 | 220 | 346 | 103 | 155 | 207 | 313 |
| D | 90 | 142 | 181 | 285 | 74 | 117 | 150 | 236 | 68 | 106 | 136 | 213 | 64 | 96 | 128 | 193 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-28
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 286 | 431 | 579 | 881 | 236 | 356 | 477 | 725 | 214 | 322 | 432 | 655 | 202 | 304 | 408 | 618 |
| B | 177 | 267 | 357 | 541 | 146 | 220 | 295 | 446 | 133 | 200 | 267 | 403 | 125 | 189 | 252 | 381 |
| C | 114 | 180 | 230 | 363 | 94 | 149 | 190 | 299 | 86 | 135 | 172 | 271 | 81 | 122 | 163 | 245 |
| D | 71 | 111 | 142 | 223 | 58 | 92 | 117 | 185 | 53 | 83 | 106 | 167 | 50 | 75 | 101 | 151 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 349 | 528 | 710 | 1083 | 288 | 435 | 584 | 889 | 261 | 394 | 528 | 803 | 246 | 372 | 499 | 757 |
| B | 216 | 326 | 437 | 662 | 178 | 269 | 360 | 545 | 162 | 244 | 326 | 493 | 153 | 230 | 308 | 466 |
| C | 139 | 219 | 280 | 443 | 115 | 181 | 232 | 366 | 104 | 164 | 210 | 331 | 99 | 148 | 198 | 299 |
| D | 86 | 135 | 173 | 273 | 71 | 112 | 143 | 225 | 65 | 102 | 130 | 204 | 61 | 92 | 122 | 184 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 579 | 881 | 1192 | 1843 | 477 | 725 | 978 | 1503 | 432 | 655 | 883 | 1354 | 408 | 618 | 832 | 1275 |
| B | 357 | 541 | 727 | 1111 | 295 | 446 | 598 | 911 | 267 | 403 | 541 | 823 | 252 | 381 | 511 | 776 |
| C | 230 | 363 | 465 | 738 | 190 | 299 | 384 | 608 | 172 | 271 | 347 | 550 | 163 | 245 | 328 | 496 |
| D | 142 | 223 | 286 | 452 | 117 | 185 | 236 | 373 | 106 | 167 | 214 | 337 | 101 | 151 | 202 | 305 |

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-28
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1529 | 1928 | 2178 | 994 | 1529 | 1928 | 2178 | 859 | 1317 | 1794 | 2086 | 767 | 1172 | 1594 | 2019 |
| B | 608 | 926 | 1254 | 1941 | 608 | 926 | 1254 | 1941 | 527 | 801 | 1082 | 1668 | 471 | 715 | 965 | 1482 |
| C | 390 | 618 | 796 | 1274 | 390 | 618 | 796 | 1274 | 338 | 535 | 688 | 1099 | 303 | 457 | 615 | 937 |
| D | 240 | 379 | 486 | 772 | 240 | 379 | 486 | 772 | 208 | 329 | 421 | 668 | 187 | 281 | 377 | 571 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1713 | 541 | 822 | 1111 | 1713 | 469 | 711 | 959 | 1473 | 419 | 635 | 856 | 1311 |
| B | 334 | 504 | 678 | 1035 | 334 | 504 | 678 | 1035 | 289 | 437 | 587 | 894 | 259 | 391 | 525 | 798 |
| C | 215 | 339 | 434 | 689 | 215 | 339 | 434 | 689 | 186 | 294 | 376 | 596 | 167 | 252 | 337 | 510 |
| D | 133 | 209 | 267 | 422 | 133 | 209 | 267 | 422 | 115 | 181 | 232 | 366 | 103 | 155 | 208 | 313 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 440 | 667 | 900 | 1380 | 440 | 667 | 900 | 1380 | 382 | 578 | 778 | 1190 | 342 | 517 | 695 | 1060 |
| B | 272 | 411 | 552 | 839 | 272 | 411 | 552 | 839 | 236 | 356 | 478 | 726 | 212 | 319 | 428 | 648 |
| C | 175 | 276 | 354 | 560 | 175 | 276 | 354 | 560 | 152 | 240 | 307 | 485 | 136 | 205 | 275 | 415 |
| D | 108 | 170 | 218 | 344 | 108 | 170 | 218 | 344 | 94 | 148 | 189 | 298 | 84 | 127 | 169 | 255 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-28
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 344 | 521 | 700 | 1069 | 344 | 521 | 700 | 1069 | 299 | 451 | 606 | 923 | 267 | 404 | 542 | 824 |
| B | 213 | 321 | 431 | 653 | 213 | 321 | 431 | 653 | 185 | 279 | 374 | 566 | 166 | 250 | 334 | 506 |
| C | 137 | 216 | 277 | 437 | 137 | 216 | 277 | 437 | 119 | 188 | 240 | 379 | 107 | 161 | 215 | 325 |
| D | 85 | 134 | 171 | 269 | 85 | 134 | 171 | 269 | 74 | 116 | 148 | 234 | 66 | 99 | 133 | 200 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1316 | 541 | 822 | 1111 | 1316 | 469 | 711 | 959 | 1135 | 419 | 635 | 856 | 1012 |
| B | 334 | 504 | 678 | 801 | 334 | 504 | 678 | 801 | 289 | 437 | 587 | 693 | 259 | 391 | 525 | 619 |
| C | 215 | 339 | 434 | 535 | 215 | 339 | 434 | 535 | 186 | 294 | 376 | 464 | 167 | 252 | 337 | 397 |
| D | 133 | 209 | 267 | 328 | 133 | 209 | 267 | 328 | 115 | 181 | 232 | 285 | 103 | 155 | 208 | 244 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1529 | 1928 | 1967 | 994 | 1529 | 1928 | 1967 | 859 | 1317 | 1794 | 1889 | 767 | 1172 | 1594 | 1717 |
| B | 608 | 926 | 1254 | 1350 | 608 | 926 | 1254 | 1350 | 527 | 801 | 1082 | 1164 | 471 | 715 | 965 | 1037 |
| C | 390 | 618 | 796 | 894 | 390 | 618 | 796 | 894 | 338 | 535 | 688 | 773 | 303 | 457 | 615 | 660 |
| D | 240 | 379 | 486 | 545 | 240 | 379 | 486 | 545 | 208 | 329 | 421 | 473 | 187 | 281 | 377 | 404 |

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2 - 2011 Amdt 3 - 2013

| Components | Part Number | Description |
|-----------------------|-------------|--|
| Standard Rail | ATL-TYN-28 | Antai Rail II |
| Light Rail | ATL-TYN-53 | Antai Rail III |
| Light Rail 2 | CG-010 | Antai CG-010 Light Rail |
| Inter Clamp | ATL-FWNY-09 | Internal fixing between rail and Solar Panel |
| End Clamp | ALT-TYN-14 | End fixing between rail and Solar Panel |
| Adjustable Tilt Leg | ATL-TYN-57 | Adjustable back legs |
| Rail Splice | ATL-TYN-21 | Rail Connection |
| Tilt System Interface | ATL-TYN-56 | Tin Roof interface |

Note 2 Refer attached Gamcorp Roof Definition and Figure 5.3 of AS/NZS 1170.2:2011 for definition of roof zones

Note 3 Terrain Category 2 (TC2) refers to open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5 m to 5 m, with no more than two obstruction per obstructions per hectare.

Terrain Category 3 (TC3) refers to numerous closely spaced obstructions having heights generally from 3m to 10m. For example, suburban housing or light industrial estates. Refer clause 4.2.1 of AS/NZS 1170.2-2011 Amdt 3-2013 for definition of Terrain Category 3.

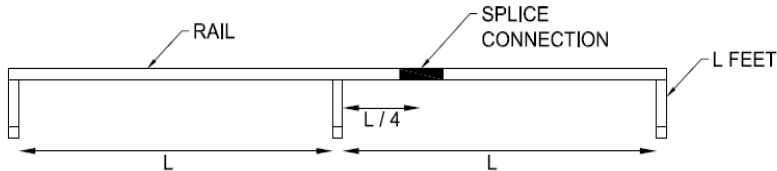
Note 4 All holes must be pre drilled, with minimum screw embedment of 35 mm into timber.

Note 5 Recommended Screws

| Metal Purlin/Batten | Fasteners to Use |
|--|-----------------------|
| BMT 1.2mm - 2.4mm | 14g-10 TPI Tek screws |
| Timber Rafter & Purlin/Batt | Fasteners to Use |
| Softwood and Hardwood (35mm embedment depth or more) | 14g-10 TPI (T17s) |

Above spacing tables are applicable to minimum 1.5mm BMT steel purlin and JD4 seasoned timber.

Note 6 Splice connection must placed quarter length of the spacing of the L foot. No Splice connection should be placed at the centre of spacing or over the L foot.



Structural Design Documentation

**Adjustable Tilt Leg PV Racking System
Interface Spacing Table
According to AS/NZS 1170.2-2011 Amdt 3-2013
with ATL-TYN-53 Rails
within Australia
Terrain Category 2 & 3**

For: Xiamen New Way Energy
Technology Co. Ltd.



Job Number: 2869
Date: 14 December 2016

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Project: Adjustable Tilt Leg Interface Spacing Table

Address: within Australia

Australian and New Zealand Standards

AS/NZS 1170. 2011 – Structural Design Actions

Part 0 – General Principles

Part 1 – Permanent imposed and other actions

Part 2 – Wind Actions

AS/NZS 1252 – High Strength Structural Bolting

AS 4055 – Wind Loads for Housing

AS/NZS 1664 – Aluminium Structures

AS 4100 – Steel Structures

AS/NZS 4600 – Cold-Formed Steel Structures

Wind Terrain Category:

WTC 2 & 3

Designed: K.Z

Date: Dec-16

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-53
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 820 | 1256 | 1710 | 2016 | 675 | 1029 | 1395 | 1906 | 610 | 929 | 1258 | 1853 | 576 | 876 | 1185 | 1823 |
| B | 504 | 765 | 1033 | 1590 | 415 | 629 | 848 | 1299 | 376 | 569 | 766 | 1171 | 355 | 537 | 723 | 1103 |
| C | 323 | 511 | 657 | 1049 | 267 | 422 | 541 | 861 | 242 | 382 | 490 | 778 | 228 | 345 | 462 | 702 |
| D | 199 | 314 | 402 | 638 | 165 | 259 | 332 | 525 | 149 | 235 | 301 | 475 | 141 | 212 | 284 | 429 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 448 | 679 | 916 | 1405 | 369 | 559 | 752 | 1150 | 334 | 506 | 680 | 1037 | 316 | 477 | 642 | 978 |
| B | 277 | 418 | 561 | 853 | 229 | 345 | 462 | 702 | 207 | 312 | 419 | 634 | 196 | 295 | 395 | 599 |
| C | 178 | 281 | 360 | 570 | 147 | 232 | 297 | 469 | 134 | 210 | 269 | 425 | 126 | 190 | 254 | 384 |
| D | 110 | 173 | 222 | 350 | 91 | 143 | 183 | 289 | 83 | 130 | 166 | 261 | 78 | 117 | 157 | 236 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 365 | 552 | 743 | 1135 | 301 | 455 | 611 | 931 | 273 | 412 | 553 | 841 | 258 | 389 | 522 | 793 |
| B | 226 | 341 | 457 | 693 | 187 | 281 | 377 | 571 | 169 | 255 | 341 | 516 | 160 | 241 | 322 | 487 |
| C | 146 | 229 | 293 | 464 | 120 | 189 | 242 | 382 | 109 | 172 | 220 | 346 | 103 | 155 | 207 | 313 |
| D | 90 | 142 | 181 | 285 | 74 | 117 | 150 | 236 | 68 | 106 | 136 | 213 | 64 | 96 | 128 | 193 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-53
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 286 | 431 | 579 | 881 | 236 | 356 | 477 | 725 | 214 | 322 | 432 | 655 | 202 | 304 | 408 | 618 |
| B | 177 | 267 | 357 | 541 | 146 | 220 | 295 | 446 | 133 | 200 | 267 | 403 | 125 | 189 | 252 | 381 |
| C | 114 | 180 | 230 | 363 | 94 | 149 | 190 | 299 | 86 | 135 | 172 | 271 | 81 | 122 | 163 | 245 |
| D | 71 | 111 | 142 | 223 | 58 | 92 | 117 | 185 | 53 | 83 | 106 | 167 | 50 | 75 | 101 | 151 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 349 | 528 | 710 | 1083 | 288 | 435 | 584 | 889 | 261 | 394 | 528 | 803 | 246 | 372 | 499 | 757 |
| B | 216 | 326 | 437 | 662 | 178 | 269 | 360 | 545 | 162 | 244 | 326 | 493 | 153 | 230 | 308 | 466 |
| C | 139 | 219 | 280 | 443 | 115 | 181 | 232 | 366 | 104 | 164 | 210 | 331 | 99 | 148 | 198 | 299 |
| D | 86 | 135 | 173 | 273 | 71 | 112 | 143 | 225 | 65 | 102 | 130 | 204 | 61 | 92 | 122 | 184 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 579 | 881 | 1192 | 1826 | 477 | 725 | 978 | 1503 | 432 | 655 | 883 | 1354 | 408 | 618 | 832 | 1275 |
| B | 357 | 541 | 727 | 1111 | 295 | 446 | 598 | 911 | 267 | 403 | 541 | 823 | 252 | 381 | 511 | 776 |
| C | 230 | 363 | 465 | 738 | 190 | 299 | 384 | 608 | 172 | 271 | 347 | 550 | 163 | 245 | 328 | 496 |
| D | 142 | 223 | 286 | 452 | 117 | 185 | 236 | 373 | 106 | 167 | 214 | 337 | 101 | 151 | 202 | 305 |

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-53
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1529 | 1888 | 2133 | 994 | 1529 | 1888 | 2133 | 859 | 1317 | 1794 | 2043 | 767 | 1172 | 1594 | 1977 |
| B | 608 | 926 | 1254 | 1941 | 608 | 926 | 1254 | 1941 | 527 | 801 | 1082 | 1668 | 471 | 715 | 965 | 1482 |
| C | 390 | 618 | 796 | 1274 | 390 | 618 | 796 | 1274 | 338 | 535 | 688 | 1099 | 303 | 457 | 615 | 937 |
| D | 240 | 379 | 486 | 772 | 240 | 379 | 486 | 772 | 208 | 329 | 421 | 668 | 187 | 281 | 377 | 571 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1713 | 541 | 822 | 1111 | 1713 | 469 | 711 | 959 | 1473 | 419 | 635 | 856 | 1311 |
| B | 334 | 504 | 678 | 1035 | 334 | 504 | 678 | 1035 | 289 | 437 | 587 | 894 | 259 | 391 | 525 | 798 |
| C | 215 | 339 | 434 | 689 | 215 | 339 | 434 | 689 | 186 | 294 | 376 | 596 | 167 | 252 | 337 | 510 |
| D | 133 | 209 | 267 | 422 | 133 | 209 | 267 | 422 | 115 | 181 | 232 | 366 | 103 | 155 | 208 | 313 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 440 | 667 | 900 | 1380 | 440 | 667 | 900 | 1380 | 382 | 578 | 778 | 1190 | 342 | 517 | 695 | 1060 |
| B | 272 | 411 | 552 | 839 | 272 | 411 | 552 | 839 | 236 | 356 | 478 | 726 | 212 | 319 | 428 | 648 |
| C | 175 | 276 | 354 | 560 | 175 | 276 | 354 | 560 | 152 | 240 | 307 | 485 | 136 | 205 | 275 | 415 |
| D | 108 | 170 | 218 | 344 | 108 | 170 | 218 | 344 | 94 | 148 | 189 | 298 | 84 | 127 | 169 | 255 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail ATL-TYN-53
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 344 | 521 | 700 | 1069 | 344 | 521 | 700 | 1069 | 299 | 451 | 606 | 923 | 267 | 404 | 542 | 824 |
| B | 213 | 321 | 431 | 653 | 213 | 321 | 431 | 653 | 185 | 279 | 374 | 566 | 166 | 250 | 334 | 506 |
| C | 137 | 216 | 277 | 437 | 137 | 216 | 277 | 437 | 119 | 188 | 240 | 379 | 107 | 161 | 215 | 325 |
| D | 85 | 134 | 171 | 269 | 85 | 134 | 171 | 269 | 74 | 116 | 148 | 234 | 66 | 99 | 133 | 200 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1316 | 541 | 822 | 1111 | 1316 | 469 | 711 | 959 | 1135 | 419 | 635 | 856 | 1012 |
| B | 334 | 504 | 678 | 801 | 334 | 504 | 678 | 801 | 289 | 437 | 587 | 693 | 259 | 391 | 525 | 619 |
| C | 215 | 339 | 434 | 535 | 215 | 339 | 434 | 535 | 186 | 294 | 376 | 464 | 167 | 252 | 337 | 397 |
| D | 133 | 209 | 267 | 328 | 133 | 209 | 267 | 328 | 115 | 181 | 232 | 285 | 103 | 155 | 208 | 244 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1529 | 1888 | 1926 | 994 | 1529 | 1888 | 1926 | 859 | 1317 | 1794 | 1850 | 767 | 1172 | 1594 | 1717 |
| B | 608 | 926 | 1254 | 1350 | 608 | 926 | 1254 | 1350 | 527 | 801 | 1082 | 1164 | 471 | 715 | 965 | 1037 |
| C | 390 | 618 | 796 | 894 | 390 | 618 | 796 | 894 | 338 | 535 | 688 | 773 | 303 | 457 | 615 | 660 |
| D | 240 | 379 | 486 | 545 | 240 | 379 | 486 | 545 | 208 | 329 | 421 | 473 | 187 | 281 | 377 | 404 |

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2 - 2011 Amdt 3 - 2013

| Components | Part Number | Description |
|-----------------------|-------------|--|
| Standard Rail | ATL-TYN-28 | Antai Rail II |
| Light Rail | ATL-TYN-53 | Antai Rail III |
| Light Rail 2 | CG-010 | Antai CG-010 Light Rail |
| Inter Clamp | ATL-FWNY-09 | Internal fixing between rail and Solar Panel |
| End Clamp | ALT-TYN-14 | End fixing between rail and Solar Panel |
| Adjustable Tilt Leg | ATL-TYN-57 | Adjustable back legs |
| Rail Splice | ATL-TYN-21 | Rail Connection |
| Tilt System Interface | ATL-TYN-56 | Tin Roof interface |

Note 2 Refer attached Gamcorp Roof Definition and Figure 5.3 of AS/NZS 1170.2:2011 for definition of roof zones

Note 3 Terrain Category 2 (TC2) refers to open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5 m to 5 m, with no more than two obstruction per obstructions per hectare.

Terrain Category 3 (TC3) refers to numerous closely spaced obstructions having heights generally from 3m to 10m. For example, suburban housing or light industrial estates. Refer clause 4.2.1 of AS/NZS 1170.2-2011 Amdt 3-2013 for definition of Terrain Category 3.

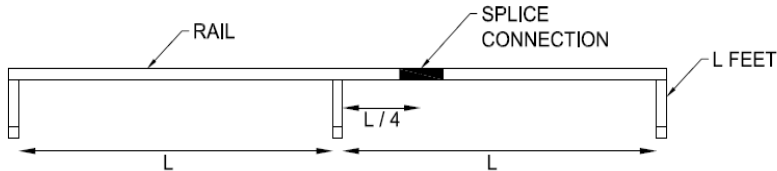
Note 4 All holes must be pre drilled, with minimum screw embedment of 35 mm into timber.

Note 5 Recommended Screws

| Metal Purlin/Batten | Fasteners to Use |
|--|------------------------|
| BMT 1.2mm - 2.4mm | 14g-10 TPI Teks screws |
| Timber Rafter & Purlin/Batt | Fasteners to Use |
| Softwood and Hardwood (35mm embedment depth or more) | 14g-10 TPI (T17s) |

Above spacing tables are applicable to minimum 1.5mm BMT steel purlin and JD4 seasoned timber.

Note 6 Splice connection must placed quarter length of the spacing of the L foot. No Splice connection should be placed at the centre of spacing or over the L foot.



Structural Design Documentation

**Adjustable Tilt Leg PV Racking System
Interface Spacing Table
According to AS/NZS 1170.2-2011 Amdt 3-2013
with CG-010 Rails
within Australia
Terrain Category 2 & 3**

For: Xiamen New Way Energy
Technology Co. Ltd.

Job Number: 2869
Date: 14 December 2016



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ISO 9001:2008 Registered Firm
Certificate No: AU1222

Job No: 2869

Client: Xiamen New Way Energy Technology Co. Ltd.

Project: Adjustable Tilt Leg Interface Spacing Table

Address: within Australia

Australian and New Zealand Standards

AS/NZS 1170. 2011 – Structural Design Actions

Part 0 – General Principles

Part 1 – Permanent imposed and other actions

Part 2 – Wind Actions

AS/NZS 1252 – High Strength Structural Bolting

AS 4055 – Wind Loads for Housing

AS/NZS 1664 – Aluminium Structures

AS 4100 – Steel Structures

AS/NZS 4600 – Cold-Formed Steel Structures

Wind Terrain Category:

WTC 2 & 3

Designed: K.Z

Date: Dec-16

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail CG-010
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 820 | 1256 | 1533 | 1725 | 675 | 1029 | 1395 | 1631 | 610 | 929 | 1258 | 1585 | 576 | 876 | 1185 | 1560 |
| B | 504 | 765 | 1033 | 1569 | 415 | 629 | 848 | 1299 | 376 | 569 | 766 | 1171 | 355 | 537 | 723 | 1103 |
| C | 323 | 511 | 657 | 1049 | 267 | 422 | 541 | 861 | 242 | 382 | 490 | 778 | 228 | 345 | 462 | 702 |
| D | 199 | 314 | 402 | 638 | 165 | 259 | 332 | 525 | 149 | 235 | 301 | 475 | 141 | 212 | 284 | 429 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 448 | 679 | 916 | 1405 | 369 | 559 | 752 | 1150 | 334 | 506 | 680 | 1037 | 316 | 477 | 642 | 978 |
| B | 277 | 418 | 561 | 853 | 229 | 345 | 462 | 702 | 207 | 312 | 419 | 634 | 196 | 295 | 395 | 599 |
| C | 178 | 281 | 360 | 570 | 147 | 232 | 297 | 469 | 134 | 210 | 269 | 425 | 126 | 190 | 254 | 384 |
| D | 110 | 173 | 222 | 350 | 91 | 143 | 183 | 289 | 83 | 130 | 166 | 261 | 78 | 117 | 157 | 236 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 365 | 552 | 743 | 1135 | 301 | 455 | 611 | 931 | 273 | 412 | 553 | 841 | 258 | 389 | 522 | 793 |
| B | 226 | 341 | 457 | 693 | 187 | 281 | 377 | 571 | 169 | 255 | 341 | 516 | 160 | 241 | 322 | 487 |
| C | 146 | 229 | 293 | 464 | 120 | 189 | 242 | 382 | 109 | 172 | 220 | 346 | 103 | 155 | 207 | 313 |
| D | 90 | 142 | 181 | 285 | 74 | 117 | 150 | 236 | 68 | 106 | 136 | 213 | 64 | 96 | 128 | 193 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail CG-010
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 2

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 286 | 431 | 579 | 881 | 236 | 356 | 477 | 725 | 214 | 322 | 432 | 655 | 202 | 304 | 408 | 618 |
| B | 177 | 267 | 357 | 541 | 146 | 220 | 295 | 446 | 133 | 200 | 267 | 403 | 125 | 189 | 252 | 381 |
| C | 114 | 180 | 230 | 363 | 94 | 149 | 190 | 299 | 86 | 135 | 172 | 271 | 81 | 122 | 163 | 245 |
| D | 71 | 111 | 142 | 223 | 58 | 92 | 117 | 185 | 53 | 83 | 106 | 167 | 50 | 75 | 101 | 151 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 349 | 528 | 710 | 1083 | 288 | 435 | 584 | 889 | 261 | 394 | 528 | 803 | 246 | 372 | 499 | 757 |
| B | 216 | 326 | 437 | 662 | 178 | 269 | 360 | 545 | 162 | 244 | 326 | 493 | 153 | 230 | 308 | 466 |
| C | 139 | 219 | 280 | 443 | 115 | 181 | 232 | 366 | 104 | 164 | 210 | 331 | 99 | 148 | 198 | 299 |
| D | 86 | 135 | 173 | 273 | 71 | 112 | 143 | 225 | 65 | 102 | 130 | 204 | 61 | 92 | 122 | 184 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 579 | 881 | 1192 | 1563 | 477 | 725 | 978 | 1482 | 432 | 655 | 883 | 1354 | 408 | 618 | 832 | 1275 |
| B | 357 | 541 | 727 | 1111 | 295 | 446 | 598 | 911 | 267 | 403 | 541 | 823 | 252 | 381 | 511 | 776 |
| C | 230 | 363 | 465 | 738 | 190 | 299 | 384 | 608 | 172 | 271 | 347 | 550 | 163 | 245 | 328 | 496 |
| D | 142 | 223 | 286 | 452 | 117 | 185 | 236 | 373 | 106 | 167 | 214 | 337 | 101 | 151 | 202 | 305 |

Client: **Xiamen New Way Energy Technology Co. Ltd.**
 Project: **Adjustable Tilt Leg Interface Spacing Table**
 Address: **within Australia**
 Designed: **K.Z**

Job: **2869**
 Date: **Dec-16**

Checked: **M.A**

Adjustable Tilt Leg Interface Spacing Table

Type of Rail CG-010
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $10^\circ < \Phi \leq 15^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1489 | 1615 | 1825 | 994 | 1489 | 1615 | 1825 | 859 | 1317 | 1552 | 1748 | 767 | 1172 | 1505 | 1691 |
| B | 608 | 926 | 1254 | 1728 | 608 | 926 | 1254 | 1728 | 527 | 801 | 1082 | 1606 | 471 | 715 | 965 | 1482 |
| C | 390 | 618 | 796 | 1274 | 390 | 618 | 796 | 1274 | 338 | 535 | 688 | 1099 | 303 | 457 | 615 | 937 |
| D | 240 | 379 | 486 | 772 | 240 | 379 | 486 | 772 | 208 | 329 | 421 | 668 | 187 | 281 | 377 | 571 |

Tilt Angle from Horizontal $15^\circ < \Phi < 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1533 | 541 | 822 | 1111 | 1533 | 469 | 711 | 959 | 1473 | 419 | 635 | 856 | 1311 |
| B | 334 | 504 | 678 | 1035 | 334 | 504 | 678 | 1035 | 289 | 437 | 587 | 894 | 259 | 391 | 525 | 798 |
| C | 215 | 339 | 434 | 689 | 215 | 339 | 434 | 689 | 186 | 294 | 376 | 596 | 167 | 252 | 337 | 510 |
| D | 133 | 209 | 267 | 422 | 133 | 209 | 267 | 422 | 115 | 181 | 232 | 366 | 103 | 155 | 208 | 313 |

Tilt Angle from Horizontal $\Phi = 30^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 440 | 667 | 900 | 1380 | 440 | 667 | 900 | 1380 | 382 | 578 | 778 | 1190 | 342 | 517 | 695 | 1060 |
| B | 272 | 411 | 552 | 839 | 272 | 411 | 552 | 839 | 236 | 356 | 478 | 726 | 212 | 319 | 428 | 648 |
| C | 175 | 276 | 354 | 560 | 175 | 276 | 354 | 560 | 152 | 240 | 307 | 485 | 136 | 205 | 275 | 415 |
| D | 108 | 170 | 218 | 344 | 108 | 170 | 218 | 344 | 94 | 148 | 189 | 298 | 84 | 127 | 169 | 255 |

Adjustable Tilt Leg Interface Spacing Table

Type of Rail CG-010
 Type of Interface ATL-TYN-56
 Solar Panel Dimension 2m x 1m
Terrain category 3

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $\leq 10^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 344 | 521 | 700 | 1069 | 344 | 521 | 700 | 1069 | 299 | 451 | 606 | 923 | 267 | 404 | 542 | 824 |
| B | 213 | 321 | 431 | 653 | 213 | 321 | 431 | 653 | 185 | 279 | 374 | 566 | 166 | 250 | 334 | 506 |
| C | 137 | 216 | 277 | 437 | 137 | 216 | 277 | 437 | 119 | 188 | 240 | 379 | 107 | 161 | 215 | 325 |
| D | 85 | 134 | 171 | 269 | 85 | 134 | 171 | 269 | 74 | 116 | 148 | 234 | 66 | 99 | 133 | 200 |

Tilt Angle from Horizontal $20^\circ < \Phi \leq 45^\circ$
 Roof Angle - $11^\circ - 20^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 541 | 822 | 1111 | 1316 | 541 | 822 | 1111 | 1316 | 469 | 711 | 959 | 1135 | 419 | 635 | 856 | 1012 |
| B | 334 | 504 | 678 | 801 | 334 | 504 | 678 | 801 | 289 | 437 | 587 | 693 | 259 | 391 | 525 | 619 |
| C | 215 | 339 | 434 | 535 | 215 | 339 | 434 | 535 | 186 | 294 | 376 | 464 | 167 | 252 | 337 | 397 |
| D | 133 | 209 | 267 | 328 | 133 | 209 | 267 | 328 | 115 | 181 | 232 | 285 | 103 | 155 | 208 | 244 |

Tilt Angle from Horizontal $30^\circ < \Phi \leq 45^\circ$
 Roof Angle - $21^\circ - 30^\circ$

| Wind Region | Building Height - H (m) | | | | | | | | | | | | | | | |
|-------------|-------------------------|------|--------------|----------|--------|------|--------------|----------|---------|------|--------------|----------|---------|------|--------------|----------|
| | H≤5 | | | | 5<H≤10 | | | | 10<H≤15 | | | | 15<H≤20 | | | |
| | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal | Corner | Edge | Intermediate | Internal |
| A | 994 | 1489 | 1615 | 1648 | 994 | 1489 | 1615 | 1648 | 859 | 1317 | 1552 | 1583 | 767 | 1172 | 1505 | 1534 |
| B | 608 | 926 | 1254 | 1350 | 608 | 926 | 1254 | 1350 | 527 | 801 | 1082 | 1164 | 471 | 715 | 965 | 1037 |
| C | 390 | 618 | 796 | 894 | 390 | 618 | 796 | 894 | 338 | 535 | 688 | 773 | 303 | 457 | 615 | 660 |
| D | 240 | 379 | 486 | 545 | 240 | 379 | 486 | 545 | 208 | 329 | 421 | 473 | 187 | 281 | 377 | 404 |

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2 - 2011 Amdt 3 - 2013

| Components | Part Number | Description |
|-----------------------|-------------|--|
| Standard Rail | ATL-TYN-28 | Antai Rail II |
| Light Rail | ATL-TYN-53 | Antai Rail III |
| Light Rail 2 | CG-010 | Antai CG-010 Light Rail |
| Inter Clamp | ATL-FWNY-09 | Internal fixing between rail and Solar Panel |
| End Clamp | ALT-TYN-14 | End fixing between rail and Solar Panel |
| Adjustable Tilt Leg | ATL-TYN-57 | Adjustable back legs |
| Rail Splice | ATL-TYN-21 | Rail Connection |
| Tilt System Interface | ATL-TYN-56 | Tin Roof interface |

Note 2 Refer attached Gamcorp Roof Definition and Figure 5.3 of AS/NZS 1170.2:2011 for definition of roof zones

Note 3 Terrain Category 2 (TC2) refers to open terrain, including grassland, with well-scattered obstructions having heights generally from 1.5 m to 5 m, with no more than two obstruction per obstructions per hectare.

Terrain Category 3 (TC3) refers to numerous closely spaced obstructions having heights generally from 3m to 10m. For example, suburban housing or light industrial estates. Refer clause 4.2.1 of AS/NZS 1170.2-2011 Amdt 3-2013 for definition of Terrain Category 3.

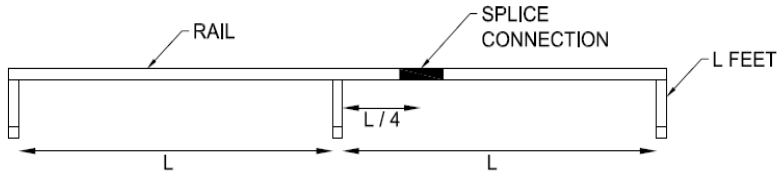
Note 4 All holes must be pre drilled, with minimum screw embedment of 35 mm into timber.

Note 5 Recommended Screws

| Metal Purlin/Batten | Fasteners to Use |
|--|-----------------------|
| BMT 1.2mm - 2.4mm | 14g-10 TPI Tek screws |
| Timber Rafter & Purlin/Batt | Fasteners to Use |
| Softwood and Hardwood (35mm embedment depth or more) | 14g-10 TPI (T17s) |

Above spacing tables are applicable to minimum 1.5mm BMT steel purlin and JD4 seasoned timber.

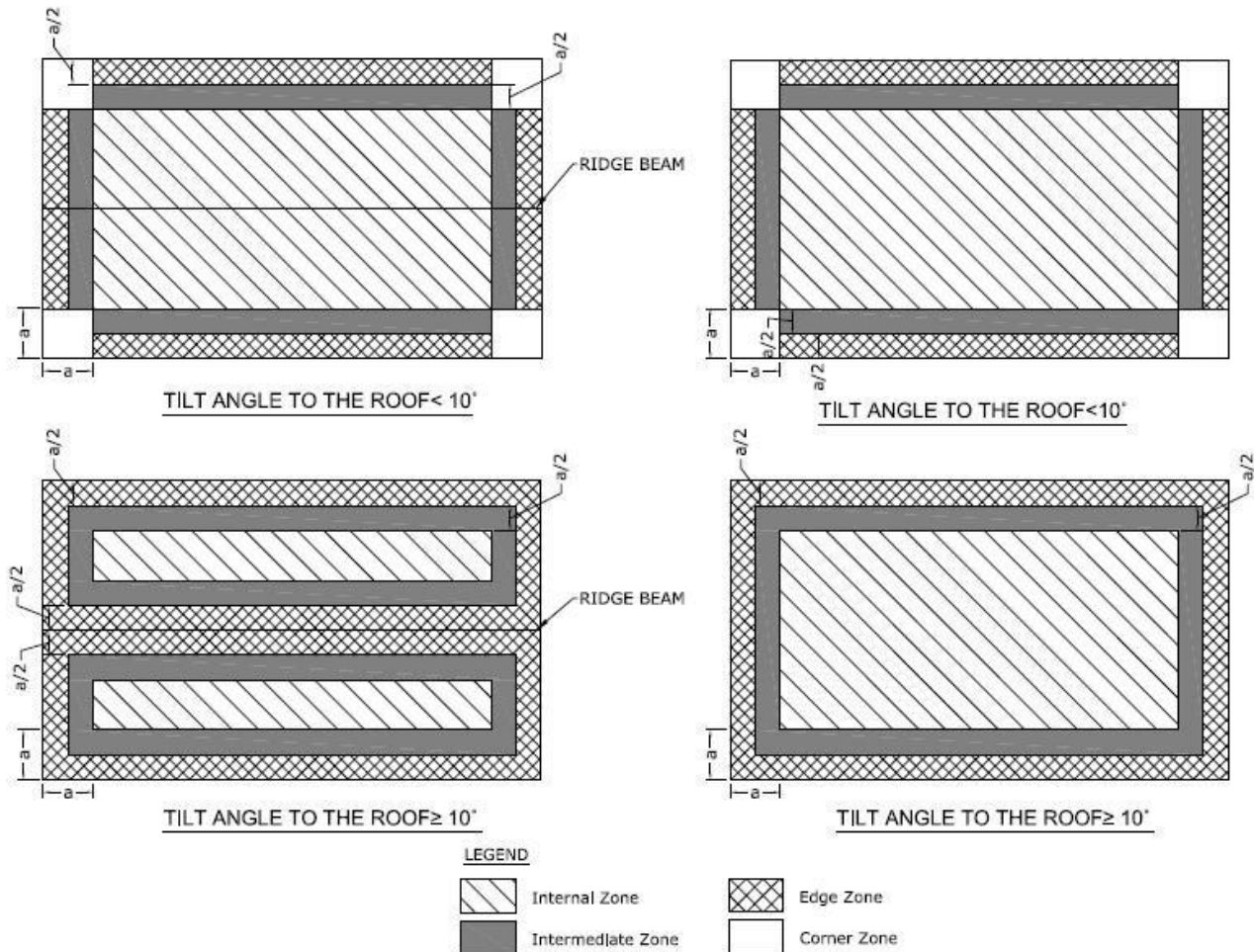
Note 6 Splice connection must placed quarter length of the spacing of the L foot. No Splice connection should be placed at the centre of spacing or over the L foot.



For tilt array systems

Condition:

- a. For pitched roofs where roof angle is between 1° and 45° .



In the front figure h = height, b = width and d = length of the building.

Step 1: Determine building height, width and length.

Step 2: Multiply the width of the building by 0.2

Step 3: Multiply the length of the building by 0.2

Step 4: Determine **lowest** value between: (height of the building) **and** $0.2 \times$ length of the building **and** $0.2 \times$ width of the building

Step 5: The lowest value in step 4, equates to **a**.

