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Our Ref: 7653-Flush/AA
27 November 2019

Xiamen Mibet New Energy Co. LTD
No.69 Xintian Road,
Jimei District, Xiamen City,
Fujian Province,
China

PV Array Frame Engineering Certification

RE: Installation of Mibet Roof Mount Solar System on Tin / Tile Roof with MA Pro Rails

Gamcorp (Melbourne) Pty Ltd, being Structural Engineers within the meaning of Australian Building Regulations, have carried out a structural design check of MA Pro Rail Roof Mount Solar System installation on tin and tile roof within Australia. The design check is based on the information and test reports provided by Xiamen Mibet New Energy Co. LTD.

This certificate is **only valid** for the MA Pro Rail Mount Solar System itself. The roof structure or the building structure and PV panels shall be assessed separately and accordingly.

This certificate is **only valid** when fixing into minimum 1.9BMT steel or minimum JD4 seasoned timber. If the fixing condition is different from those conditions, interface spacing shall be reviewed and validated.

This certificate is **only valid** when the roof zone definition falls into D6 of AS1170.2-2011(R2016).

This certificate is **only valid** as a whole. Any information extracted from this certificate is not valid if standing alone.

We find the Installation of MA Pro Rail Roof Mount Solar System on tin and tile roof for Australian use to be structurally sufficient based on the following conditions:

- Wind loads to AS/NZ1170.2:2011(R2016) Wind actions
- Wind region **A, B, C, D**
- Wind terrain category **2 & 3**
- Wind average recurrence interval of **200 years**
- Maximum building height **20m**
- The maximum assessed PV panel dimensions are **1670mm x 1000mm, 1970mm x 1000mm & 2100mm x 1050mm**
- Weight of the PV panel and array frame to be 15 kg/m²
- Rails to be **MA Pro Rails**
- Material to be **AL6005-T5 UNO**
- Material of Tile bracket to be **SUS304**
- The spacings are determined based on fixings into minimum JD4 seasoned timber and 1.9mm thick steel purlins
- Each PV panel to be installed using **2 rails** minimum in all circumstances

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- No PV panel to be installed within 2xs from edges and ridge. "s" is the maximum gap between the underside of the panel and the roof surface when installed on the roof ($50\text{mm} \leq s \leq 300\text{mm}$)
- Installation of PV panels to be done in accordance with the PV panels installation manual
- The certification **excludes** assessment of roof structure and PV panels

Refer to attached summary table for interface spacing (Unit: mm)

NOTES:

- **The recommended spacing nominated in this certification is based on the capacity of the array frame and the fixing of array frames to the roof, not the roof structure and PV panels. 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.**
- **Standard Tile Interface is considered reaching its serviceability limit when 3° rotation of the middle plate is observed.**
- **The spacing shown in the interface tables shall be adjusted based on the assessment and requirement of the roof structures**

Construction is to be carried out strictly in accordance with the manufacturers instructions. This work was designed by **Ali Askari** in accordance with the provisions of Australian Building Regulations and in accordance with sound, widely accepted engineering principles. This certificate is only valid till 27/11/2021. Gamcorp should be contacted for future validation. Contact Gamcorp for customised system or if the site conditions are not covered by this assessment.

Yours faithfully,
Gamcorp (Melbourne) Pty Ltd



L. Van Spaandonk
Principal Engineer
FIEAust CPEng NER 5038980
NT Registration: 244137ES
QLD Registration: 18703
VIC Registration: EC 45972
TAS Registration: CC7366

Attachments:

- Summary table for interface spacing, Tin roof;
- Summary table for interface spacing, Tile roof.



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Relationships built on trust

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Consulting Structural & Civil Engineers
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Structural Design Documentation

Mibet Flush Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)

with MA Pro Rail – Tin Roof

within Australia

Terrain Category 2 & 3

For: XIAMEN MIBET NEW ENERGY CO., LTD.
No.69 Xintian Road, Jimei District
Xiamen City, Fujian Province
China

Job Number: 7653-Tin
Date: 26 November 2019



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ISO 9001:2008 Registered Firm
Certificate No: AU1222

Job No: 7653-Tin
Client: XIAMEN MIBET NEW ENERGY CO., LTD.
Project: Mibet Flush Array Frame System Spacing Table
with MA Pro Rail – Tin Roof
Address: within Australia

Australian Standards

AS/NZS 1170.0:2002 – Structural design actions, Part 0: General principles
AS/NZS 1170.1:2002 (R2016) – Structural design actions, Part 1: Permanent, imposed
and other actions
AS/NZS 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:1998 (R2016) – Steel Structures
AS/NZS 4600:2018 – Cold-formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: AA
Checked: HS

Date: Nov-19

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 1.67mx1m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1575	1700	1575	1700	1490	1610	1430	1540
B	1405	1630	1405	1630	1215	1495	1080	1330
C	545	670	545	670	470	575	420	515
D	350	430	350	430	--	370	--	330

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1575	1790	1575	1790	1490	1715	1430	1635
B	1405	1730	1405	1730	1215	1640	1080	1570
C	545	790	545	790	470	675	420	605
D	350	505	350	505	--	435	--	390

Relationships built on trust
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 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 1.67mx1m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1465	1580	1365	1470	1275	1415	1205	1385
B	1160	1425	950	1165	855	1050	805	985
C	450	550	370	450	335	405	315	385
D	--	355	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1465	1680	1365	1560	1275	1500	1205	1465
B	1160	1610	950	1375	855	1235	805	1165
C	450	645	370	530	335	480	315	450
D	--	415	--	340	--	310	--	--

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 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 1.97mx1m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1490	1610	1490	1610	1410	1525	1350	1455
B	1195	1470	1195	1470	1030	1265	915	1125
C	460	565	460	565	395	485	355	435
D	295	365	295	365	--	315	--	280

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1490	1715	1490	1715	1410	1620	1350	1550
B	1195	1640	1195	1640	1030	1500	915	1330
C	460	665	460	665	395	575	355	510
D	295	425	295	425	--	370	--	330

Relationships built on trust
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Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 1.97mx1m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1385	1495	1205	1390	1080	1335	1025	1260
B	980	1210	805	985	725	890	685	835
C	380	465	310	380	280	345	265	325
D	--	300	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1385	1590	1205	1475	1080	1420	1025	1390
B	980	1430	805	1165	725	1050	685	985
C	380	550	310	450	280	405	265	380
D	--	350	--	290	--	260	--	--

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1460	1575	1460	1575	1380	1490	1295	1425
B	1120	1380	1120	1380	965	1190	860	1055
C	430	530	430	530	375	455	330	405
D	280	340	280	340	--	295	--	265

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1460	1685	1460	1685	1380	1590	1295	1515
B	1120	1610	1120	1610	965	1405	860	1245
C	430	625	430	625	375	540	330	480
D	280	400	280	400	--	345	--	310

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tin Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: L Feet Set
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1355	1465	1130	1360	1015	1250	960	1185
B	920	1135	755	925	680	835	640	785
C	355	435	295	360	225	325	--	305
D	--	280	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1355	1555	1130	1445	1015	1390	960	1360
B	920	1340	755	1090	680	985	640	925
C	355	515	295	420	225	380	--	360
D	--	330	--	270	--	--	--	--

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tin**
 Date: **Nov-19**

Checked: **HS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part Number	Description
MA Pro Rail	MA Pro Rail	as per drawing provided by client
Inter Clamp Kit (MA Pro)	Inter Clamp Kit (MA Pro)	as per drawing provided by client
End Clamp Kit (MA Pro)	End Clamp Kit (MA Pro)	as per drawing provided by client
Standard Tile Interface	Standard Tile Interface	as per drawing provided by client
L Feet Set	L Feet Set	as per drawing provided by client

Note 2 Spacing calculated based on 1.9mm steel purlin or 35mm screw embedment length into timber (JD4 seasoned timber).

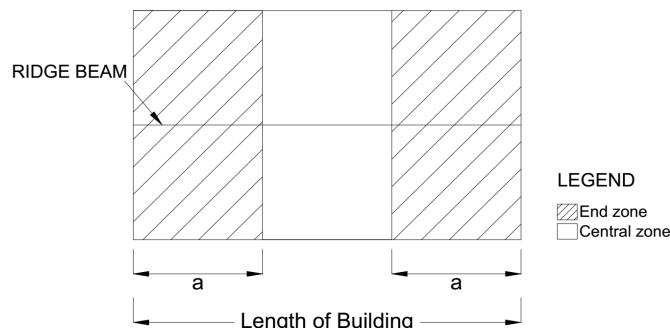
Note 3 Recommended screws

Metal Purlins/Battens	Fasteners to use
1.9 mm	M6-11 TPI RoofZips or 14g-10 TPI Teks screws
2.4 mm and Above	14g-10 TPI Teks screws
Timber Purlins/Battens	Fasteners to use
Softwood / Hardwood (35mm embedment and above)	14g-10 TPI T17 screws

Note 4 Maximum uplift wind pressure is limited to 5 kPa. "--" states more uplift pressure.

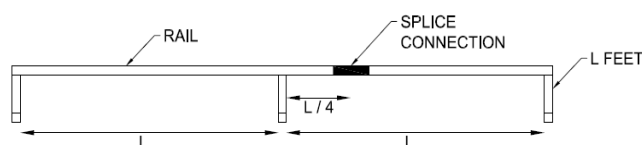
Note 5 Deflection is limited to Minimum of L/120 and 15mm

Note 6 Refer Figure D9 of AS/NZS 1170.2:2011 (R2016) for definition of (End/Central) roof zones.



Note 7 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 obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees and uncut grass.
 Terrain Category 3 (TC3) refers to terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing, light industrial estates or dense forests.

Note 8 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.



Structural Design Documentation

Mibet Flush Array Frame System Spacing Table

According to AS/NZS 1170.2-2011 (R2016)

with MA Pro Rail – Tile Roof

within Australia

Terrain Category 2 & 3

For: XIAMEN MIBET NEW ENERGY CO., LTD.
No.69 Xintian Road, Jimei District
Xiamen City, Fujian Province
China

Job Number: 7653-Tile
Date: 26 November 2019



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Certificate No: AU1222

Job No: 7653-Tile
Client: XIAMEN MIBET NEW ENERGY CO., LTD.
Project: Mibet Flush Array Frame System Spacing Table
with MA Pro Rail – Tile Roof
Address: within Australia

Australian Standards

AS/NZS 1170.0:2002 – Structural design actions, Part 0: General principles
AS/NZS 1170.1:2002 (R2016) – Structural design actions, Part 1: Permanent, imposed
and other actions
AS/NZS 1170.2:2011 (R2016) – Structural design actions, Part 2: Wind actions
AS/NZS 1664.1:1997 – Aluminium structures - Limit state design
AS 4100:1998 (R2016) – Steel Structures
AS/NZS 4600:2018 – Cold-formed Steel Structures

Wind Terrain Category: WTC 2 & 3

Designed: AA
Checked: HS

Date: Nov-19

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 1.67mx1m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1005	1270	1005	1270	855	1075	750	940
B	885	1115	885	1115	755	945	665	830
C	580	720	580	720	500	615	440	545
D	445	550	445	550	--	475	--	420

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	1005	1540	1005	1540	855	1295	750	1130
B	885	1345	885	1345	755	1135	665	995
C	580	865	580	865	500	735	440	645
D	445	655	445	655	--	560	--	495

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 1.67mx1m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	810	1015	655	815	585	725	550	680
B	715	895	580	720	520	645	490	610
C	475	585	385	475	345	430	325	405
D	--	450	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	810	1220	655	975	585	865	550	815
B	715	1075	580	865	520	770	490	725
C	475	695	385	565	345	505	325	475
D	--	535	--	435	--	390	--	--

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 1.97mx1m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	850	1075	850	1075	725	910	635	795
B	750	945	750	945	640	800	565	705
C	490	610	490	610	420	525	375	465
D	375	465	375	465	--	400	--	355

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	850	1305	850	1305	725	1100	635	955
B	750	1140	750	1140	640	965	565	840
C	490	730	490	730	420	625	375	550
D	375	555	375	555	--	475	--	420

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 1.97mx1m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	685	860	555	690	495	615	465	580
B	610	760	490	610	440	545	415	515
C	400	495	325	405	295	365	275	340
D	--	385	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	685	1035	555	825	495	735	465	690
B	610	910	490	730	440	650	415	615
C	400	590	325	480	295	430	275	405
D	--	455	--	370	--	330	--	--

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: **3**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	800	1010	800	1010	680	855	595	745
B	705	885	705	885	600	755	530	660
C	460	575	460	575	395	490	350	435
D	355	440	355	440	--	375	--	335

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	800	1225	800	1225	680	1030	595	895
B	705	1070	705	1070	600	905	530	790
C	460	685	460	685	395	585	350	515
D	355	520	355	520	--	445	--	395

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

Mibet Flush Array Frame System Spacing Table for Tile Roof (mm)

Type of Rail: MA Pro Rail
 Type of Interface: Standard Tile Interface
 Solar Panel Dimension: 2.1mx1.05m
 Terrain category: **2**

Roof Angle (Φ) – $\Phi < 5^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	645	805	520	645	465	575	435	540
B	570	715	460	575	415	515	390	485
C	375	465	305	380	225	340	--	320
D	--	360	--	--	--	--	--	--

Roof Angle (Φ) – $5^\circ \leq \Phi \leq 30^\circ$

Wind Region	Building Height – H (m)							
	H≤5		5<H≤10		10<H≤15		15<H≤20	
	End	Central	End	Central	End	Central	End	Central
A	645	970	520	775	465	690	435	645
B	570	855	460	685	415	610	390	575
C	375	555	305	450	225	405	--	380
D	--	425	--	345	--	310	--	--

Relationships built on trust
 Client: **XIAMEN MIBET NEW ENERGY CO., LTD.**
 Project: **Solar Array Interface Spacing Table**
 Address: **within Australia**
 Designed: **AA**

Job: **7653-Tile**
 Date: **Nov-19**

Checked: **HS**

General Notes

Note 1 Following components are satisfied to use according to AS/NZS 1170.2-2011(R2016)

Components	Part Number	Description
MA Pro Rail	MA Pro Rail	as per drawing provided by client
Inter Clamp Kit (MA Pro)	Inter Clamp Kit (MA Pro)	as per drawing provided by client
End Clamp Kit (MA Pro)	End Clamp Kit (MA Pro)	as per drawing provided by client
Standard Tile Interface	Standard Tile Interface	as per drawing provided by client
L Feet Set	L Feet Set	as per drawing provided by client

Note 2 Spacing calculated based on 1.9mm steel purlin or 35mm screw embedment length into timber (JD4 seasoned timber).

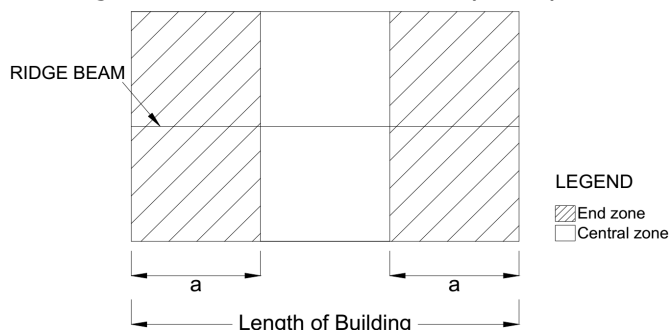
Note 3 Recommended screws

Metal Purlins/Battens	Fasteners to use
1.9 mm	M6-11 TPI RoofZips or 14g-10 TPI Teks screws
2.4 mm and Above	14g-10 TPI Teks screws
Timber Purlins/Battens	Fasteners to use
Softwood / Hardwood (35mm embedment and above)	14g-10 TPI T17 screws

Note 4 Maximum uplift wind pressure is limited to 5 kPa. "--" states more uplift pressure.

Note 5 Deflection is limited to Minimum of L/120 and 15mm

Note 6 Refer Figure D9 of AS/NZS 1170.2:2011 (R2016) for definition of (End/Central) roof zones.



Note 7 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 obstructions per hectare, e.g. farmland and cleared subdivisions with isolated trees and uncut grass.
 Terrain Category 3 (TC3) refers to terrain with numerous closely spaced obstructions having heights generally from 3 m to 10 m. The minimum density of obstructions shall be at least the equivalent of 10 house-size obstructions per hectare, e.g. suburban housing, light industrial estates or dense forests.

Note 8 The optimised location of rail splice connection is at quarter length of the spacing of the interface. No Splice connection should be placed at the centre of spacing or over the interface.

