Bradford™

Product Technical Statement

Bradford Ashgrid Spacer

Refer to product table below for applicable product codes covered by this document Issue **B**

Product Type & Application

Bradford Ashgrid is an insulation spacer for purlin roofs. It elevates the roof cladding to allow roof insulation to maintain its position and nominal thickness to deliver its full declared R-value. Ashgrid is supplied with screws pre-loaded in the brackets. It is available in cyclonic or non-cyclonic versions.

Compliance with the NCC

Testing and analysis has been undertaken to determine the capacity of the Ashgrid spacer. It is the project Structural Engineer's responsibility to determine the suitability of Ashgrid for a specific roof system.

For use in Australia, when correctly specified and installed in accordance with the requirements and limitations of CSR documentation, this product complies with the NCC as follows-

NCC 2022

- **Cyclonic Areas** – Ashgrid Cyclonic with 4 brackets complies with NCC 2022 Volume 1 Specification 4 and NCC 2022 Volume 2 H1D7(2)(ii). The product meets the requirements of the NCC through low-high-low pressure sequence testing.
- **Steel Structures** – Complies with NCC 2022 Volume 1 B1D4(c)(ii) and NCC 2022 Volume 2 H1D6(3)(c); the capacity of the bar and fasteners have been calculated in accordance with AS/NZS 4600.
- **Thermal Construction** – Allows insulation to maintain its thickness as required by NCC 2022 Volume 1 J4D3(3)(a) and ABCB Housing Provisions Standard 2022 13.2.2(c)(a).

NCC 2019

- **Cyclonic Areas** – Ashgrid Cyclonic with 4 brackets complies with NCC 2019 Volume 1 Amend. 1 Specification B1.2 and NCC 2019 Volume 2 Amend. 1 3.5.1.0(a)(ii). The product meets the requirements of the NCC through low-high-low pressure sequence testing.
- **Steel Structures** – Complies with NCC 2019 Volume 1 Amend. 1 B1.4(c)(ii) and NCC 2019 Volume 2 Amend. 1 3.4.2.0(c); the capacity of the bar and fasteners have been calculated in accordance with AS/NZS 4600.
- **Thermal Construction** – Allows insulation to maintain its thickness as required by NCC 2019 Volume 1 Amend. 1 J1.2(c)(i) and NCC 2019 Volume 2 Amend. 1 3.12.1.1(c)(i).

Evidence of Suitability

- NA50613018 Cardno Ashgrid Engineering Report.

Conditions of Storage & Maintenance

- Store in the original packaging in a cool, dry area. Ensure packages are adequately labelled, protected from physical damage, and sealed when not in use.

Limitations of Use

- **IMPORTANT:** Do Not Modify This Product: Compliance with the evidence of suitability data referenced in this document is only achieved by the product or configuration listed in this PTS. Cutting bar lengths is permitted in accordance with the installation guide.
- **Purlin design is to be undertaken by the project's Structural Engineer.** Axial force is assumed to be transmitted through the purlins, which should be designed by the project structural engineer. No testing has been undertaken to determine the effect on lateral and/or torsional restraint to purlins, and/or purlin rollover.
- Maximum allowed roof pitch is 10°.
- Ensure purlin bearing area is no smaller than the Ashgrid bracket, and screws will engage with a non-radiused area. Refer to the bracket dimensions below.
- Purlin and roof sheet capacities have not been assessed.
- The mass added by the Ashgrid product should be accounted for in structural load calculations by the project Structural Engineer. Refer to the table of masses below.
- The product has not been designed for seismic actions.
- This product is not suitable for use with curved profile cladding made from light weight BMT and/or soft materials which may experience compression and/or permanent deformation as a result of over-tightened fasteners.
- To avoid damage to the roof cladding the application of dynamic/static loads (either during or after construction) to the roof should be evenly distributed due to the narrower contact area of the Ashgrid bar.
- The ridge tie detail applies to gable roofs with equal spans to prevent rolling of the Ashgrid spacer over increasing depth and roof slope. The project Structural Engineer shall develop site specific details for gable roofs with unequal spans or monoslope roofs.
- Not suitable for use under tiled roofs.
- Not suitable for use on walls.
- This product is not designed to withstand prolonged exposure to the elements and must be installed dry and remain dry once the roof is completed.
- The product is not intended for use in a harsh environment without prior written approval from CSR Bradford, including, but not limited to livestock buildings, indoor aquatic centres and fertiliser storage facilities, or as outlined in the published literature issued by CSR Bradford.

Refer also to the notes with the Load Table below.

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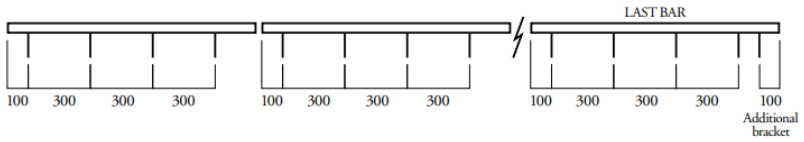
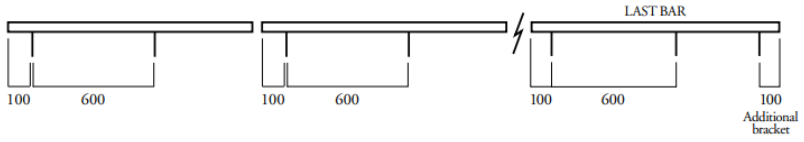
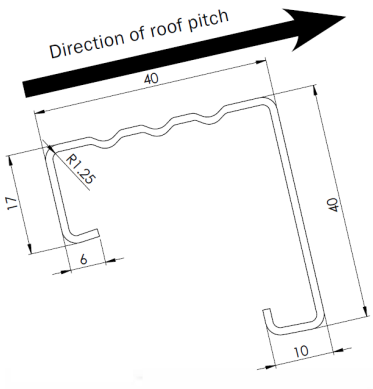
Specific Design or Installation Instructions

- Isolate power before installation.
- Ensure safety mesh and insulation is in place before installation commences.
- **WARNING:** This product contains steel which conducts electricity. To avoid electrocution, care should be taken to ensure that this product or conductive fasteners used to secure this product, do not come into contact or close proximity with electrical wiring during installation or use.
- **Purlin design is to be undertaken by the project's Structural Engineer.** No testing has been undertaken to determine the effect on lateral and/or torsional restraint to purlins, and/or purlin rollover.
- Suitable for steel structures up to a pitch of 10° when correctly specified. Load tables for timber purlin applications are available upon review of project specifics.
- An Ashgrid bracket must always be placed within 100mm of the end of the bar. This will require an additional bracket on the last bar in the row.

	Ashgrid bracket centre spacing	Bracket Configuration (Note: A bracket must always be placed within 100mm of each end of the total Ashgrid section)	Brackets per 1200mm length
Cyclonic	300mm		4
Non Cyclonic	600mm		2

- Cyclonic products with 4 brackets per 1200mm length must be used for cyclonic applications. Refer to the Product Codes table below.
- Cyclonic products require the addition of a 50 x 1mm galvanised mild steel securing strap over the ridge line during installation for all roof pitches. Refer to the Ashgrid installation guide for more details.
- Non-Cyclonic products require the addition of a 50 x 1mm galvanised mild steel securing strap over the ridge line during installation on roofs with pitches between 5°-10°. Refer to the Ashgrid installation guide for more details.
- Ashgrid can only be used on roofs pitching in a single plane, unless assessed and approved by the project Structural Engineer.
- The long leg of the Ashgrid bar must be installed facing upslope/facing the roof ridge.



Long face of Ashgrid bar must always face up toward the roof apex or ridge

- Cladding fixing should be completed according to the manufacturer's instructions.
- Suitable for interior applications where the product is protected from water during and after installation.
- Cut edges should be protected by a galvanising treatment to prevent corrosion.
- **Important Aesthetic Consideration:** To avoid damage to the roof cladding the application of dynamic/static loads (either during or after construction) to the roof should be evenly distributed due to the narrower contact area of the Ashgrid bar.

For general installation guidance refer to the product installation guide at Bradfordinsulation.com.au

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Applicable Product Codes

SPACER HEIGHT (mm)	FOR USE WITH BLANKET THICKNESS (mm)	NUMBER OF BRACKETS	BARS PER PACK	METERS OF BAR PER PACK [m]	BAR AND BRACKET MASS [kg/lm]	PRODUCT CODE
NON-CYCLONIC						
60	80	2 per 1200mm bar	12	14.4	1.21	124865
80	100, 100(HP), 110	2 per 1200mm bar	12	14.4	1.22	124864
110	130	2 per 1200mm bar	12	14.4	1.26	124863
120	140, 145	2 per 1200mm bar	12	14.4	1.27	124862
150	175	2 per 1200mm bar	12	14.4	1.34	130329
CYCLONIC						
60	80	4 per 1200mm bar	12	14.4	1.40	124869
80	100, 100(HP), 110	4 per 1200mm bar	12	14.4	1.41	124868
110	130	4 per 1200mm bar	12	14.4	1.44	124867
120	140, 145	4 per 1200mm bar	12	14.4	1.46	124866
150	175	4 per 1200mm bar	12	14.4	1.47	130330

Additional Product Data

Load Table – Cyclonic & Non-Cyclonic

Consultation with Bradford's Specification Managers is highly recommended for each project when selecting this product.

The table must be read in conjunction with the notes below.

SPACING BETWEEN PURLIN CENTRES [m]	DIRECTION OF LOADING	ASHGRID BRACKET CENTRES ALONG BAR [m]			
		NON-CYCLONIC		CYCLONIC	
		0.3	0.6	0.3	0.6
		LOADING [kPa]			
0.6	Download	49.38	12.35	49.38	12.35
	Uplift	16.21	8.10	9.83	5.87
0.9	Download	32.92	8.23	32.92	8.23
	Uplift	10.80	5.40	7.82	3.91
1.2	Download	24.69	6.17	24.69	6.17
	Uplift	8.10	4.05	5.87	2.93
1.5	Download	19.75	4.94	19.75	4.94
	Uplift	6.48	3.24	4.69	2.35

Notes:

1. All loadings shown are ultimate strength limit and state design wind capacity.
2. Corresponding serviceability wind loads will produce a deflection of less than span/200.
3. The capacity of the AG40 bar has been calculated in accordance with AS/NZS 4600:2005.
4. All screws to AS 3566.1:2002.
5. The tables are valid to a roof pitch of 10° from horizontal.
6. For non-cyclonic conditions the minimum purlin BMT is 1.2mm.
7. For cyclonic conditions the minimum purlin BMT is 1.5mm.
8. Calculations are based on the use of #12 gauge fixing screws, for metal framing only.
9. Minimum end and edge distances are 10D and 5D respectively (where D is shank diameter of screws) according to Table 4.8 in AS 1720.1:2010.
10. For timber purlin applications minimum embedment depth is 53.4mm with minimum Type 17 screw length of 55mm. The timber is taken as F5 Australian Seasoned Pine in accordance with AS 1720.1:2010.
11. Load tables for timber purlin applications are available upon review of project specifics.

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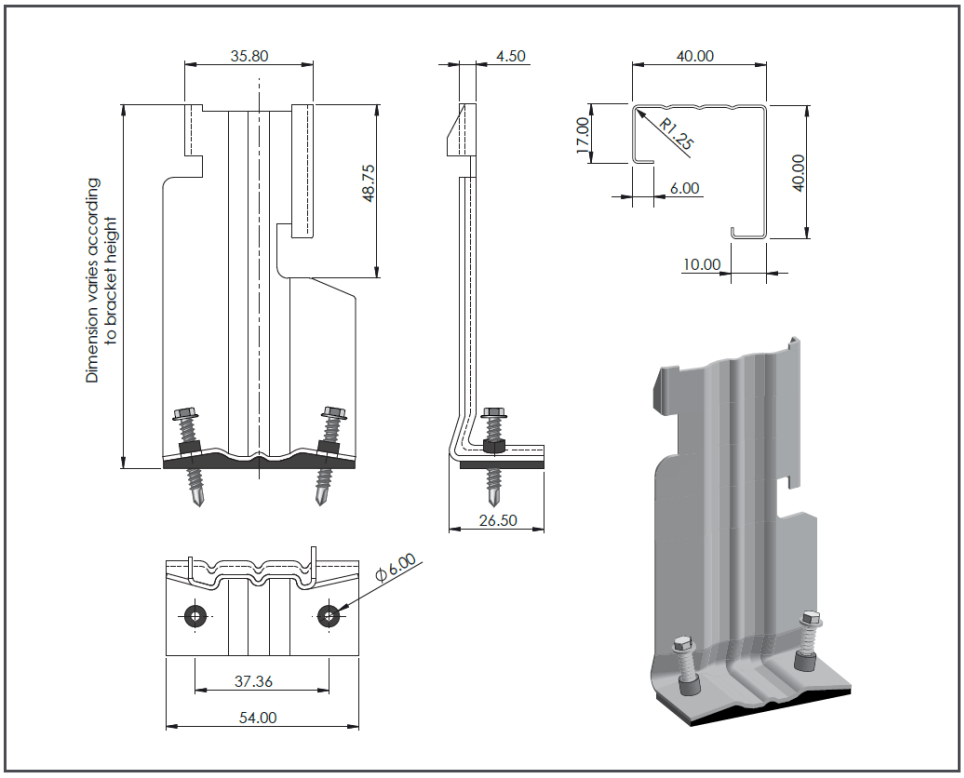
Bar and Bracket Assembled Mass – Cyclonic & Non-Cyclonic

	BAR AND BRACKET ASSEMBLY HEIGHT				
	60mm	80mm	110mm	120mm	150mm
Non-Cyclonic (2 Bracket)	1.21 kg/lm	1.22 kg/lm	1.26 kg/lm	1.27 kg/lm	1.34 kg/lm
Cyclonic (4 Bracket)	1.40 kg/lm	1.41 kg/lm	1.44 kg/lm	1.46 kg/lm	1.47 kg/lm

Ashgrid Bracket Detail



Materials

AG40 Bar Material	1.25mm BMT Galvanised Steel (S390GD and Z275NA-C)	EN 10147 Coil Minimum Yield Strength 390MPa Minimum Tensile Strength 460MPa
AG40 Bracket Material	1.6mm BMT Galvanised Steel (FEPO2G and Z275, BS EN 10142) 3mm EPDM pad under bracket foot.	