

# STRATCO OUTBACK VERANDAHS, PATIOS, CARPORTS & PERGOLAS

Independent Certification

Our Ref: 50099-3

9 September 2013

Stratco (Australia) Pty. Ltd.,  
P.O. Box 307,  
ENFIELD PLAZA S.A. 5084

**RE: STRATCO OUTBACK®**

We, FYFE PTY. LTD., practising structural engineers, confirm that we have checked the designs prepared by Stratco (Australia) Pty. Ltd., for the Outback® verandah, patio & carport systems, as detailed in the Stratco Outback® Span Table Book;

**STRATCO OUTBACK® VERANDAHS, PATIOS, CARPORTS & PERGOLAS SPAN TABLES (© 2013)**

We hereby certify that the calculations, materials, forms of construction and systems to which the designs relate will, if installed in accordance with the designs, conform to the structural requirements of the Building Code of Australia, and the following Australian Standards:-

- AS/NZS 1170.0:2002 - Structural Design Actions - Part 0: General Principles
- AS/NZS 1170.1:2002 - Structural Design Actions - Part 1: Permanent, imposed and other actions
- AS/NZS 1170.2:2011 - Structural Design Actions - Part 2: Wind actions
- AS/NZS 1170.3:2003 - Structural Design Actions - Part 3: Snow and Ice actions
  
- AS 4100:1998 - Steel structures
- AS/NZS 4600:2005 - Cold-formed steel structures
- AS 3600:2009 - Concrete structures
- AS 4055:2012 - Wind Loads for Housing
- AS 1562.1:1992 - *Design and Installation of sheet roof and wall cladding*

In the preparation of this certification, we have relied on the load test reports, product data sheets and specifications provided by Stratco (Australia) Pty. Ltd., and other relevant proprietary product specifications.



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50099-3 2013.05.09 CERTIFICATION - OUTBACK



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# STRATCO OUTBACK VERANDAHS, PATIOS, CARPORTS & PERGOLAS

## General Notes

1. These tables have been prepared for a range of attached and freestanding verandah, patio, pergola, sunroof and carport designs using structural sections and roof sheeting manufactured by the Stratco Group of Companies throughout Australia.
2. The structural components used comply with the following Australian Standards:
  - Beam and Column sections are cold-rolled from hi-tensile steel, conforming to AS1397.
  - Hot rolled plate conforms to AS/NZS1594 and AS/NZS3678.
  - Roof sheeting complies with AS1397 - Steel Sheet Strip.
  - Bolts comply with AS/NZS2451, AS1110.1 and AS1111.1.
  - Self drilling screws comply with AS3566.1.
  - All other proprietary products to be in accordance with the manufacturer's recommendations.
3. The testing and design of structural members comply with the following Australian standards:
  - Structural Design Actions, AS/NZS 1170.0:2002 - General Principles
  - Structural Design Actions, AS/NZS1170.1:2002 - Permanent, Imposed and Other Actions
  - Structural Design Actions, AS/NZS1170.2:2011 - Wind Actions
  - Wind Loads for Housing, AS4055 - 2006.
  - Cold Formed Steel Structures, AS/NZS4600 - 2005.
  - Steel Structures, AS4100 - 1998.
  - Concrete Structures, AS3600 - 2009.
  - Design and Installation of Sheet Roof and Wall Cladding, AS1562.1 - 1992.
4. All erection and connection details to be in accordance with the relevant standard Stratco connection details contained in these span tables.
5. Maximum height shall be 3.0 metres for Outback units with some units restricted in height for better performance. Refer to the relevant section for further details on allowable unit heights.
6. Recommended minimum roof pitch for "flat" verandahs shall be 1' (1 in 60) for deck spans up to 4000mm and 1.5' (1 in 40) for deck spans exceeding 4000mm. Maximum roof pitch for "flat" verandahs shall be 5' (1 in 12). Recommended minimum roof pitch for corrugated steel sheet shall be 5' (1 in 12). Minimum louvre pitch for Outback Sunroof units shall be 1' (1 in 60). Care must be taken to ensure the minimum roof pitch is maintained to avoid ponding of rainwater. Minimum fall of units towards downpipes is 1 in 200.
7. Unless indicated otherwise footing sizes nominated in the span tables have been determined assuming they are founded into a firm natural sandy clay. Concrete to have a minimum strength of 15MPa with a maximum 80mm slump.
8. Where the Verandah, Patio, Carport or Pergola columns are to be fixed to an existing ground slab the erector / owner is responsible for ensuring that the slab is capable of supporting the structure.
9. Verandahs, Patios and Carport Span Tables are generally not sufficient to provide for enclosures, except for screen enclosures that allow for air movement. A Verandah, Patio or Carport is defined as a structure that has two or more sides that are open and at least one third of its perimeter is open. For a side to be considered open, the roof cladding adjacent to that side must be at least 500mm from another building or allotment boundary.
10. The builder is to ensure that the structure to which the Verandah, Patio or Carport is to be attached is capable of withstanding the additional loads imposed by the Verandah, Patio or Carport or adequately reinforced. It is advisable to first check with a structural engineer or your local government authority to determine any specific requirements for attachment to existing buildings.
11. The roof cladding and supporting structural members are designed to withstand actions incidental to maintenance, roofs are not to be used for floor type activities.

# STRATCO OUTBACK VERANDAHS, PATIOS, CARPORTS & PERGOLAS

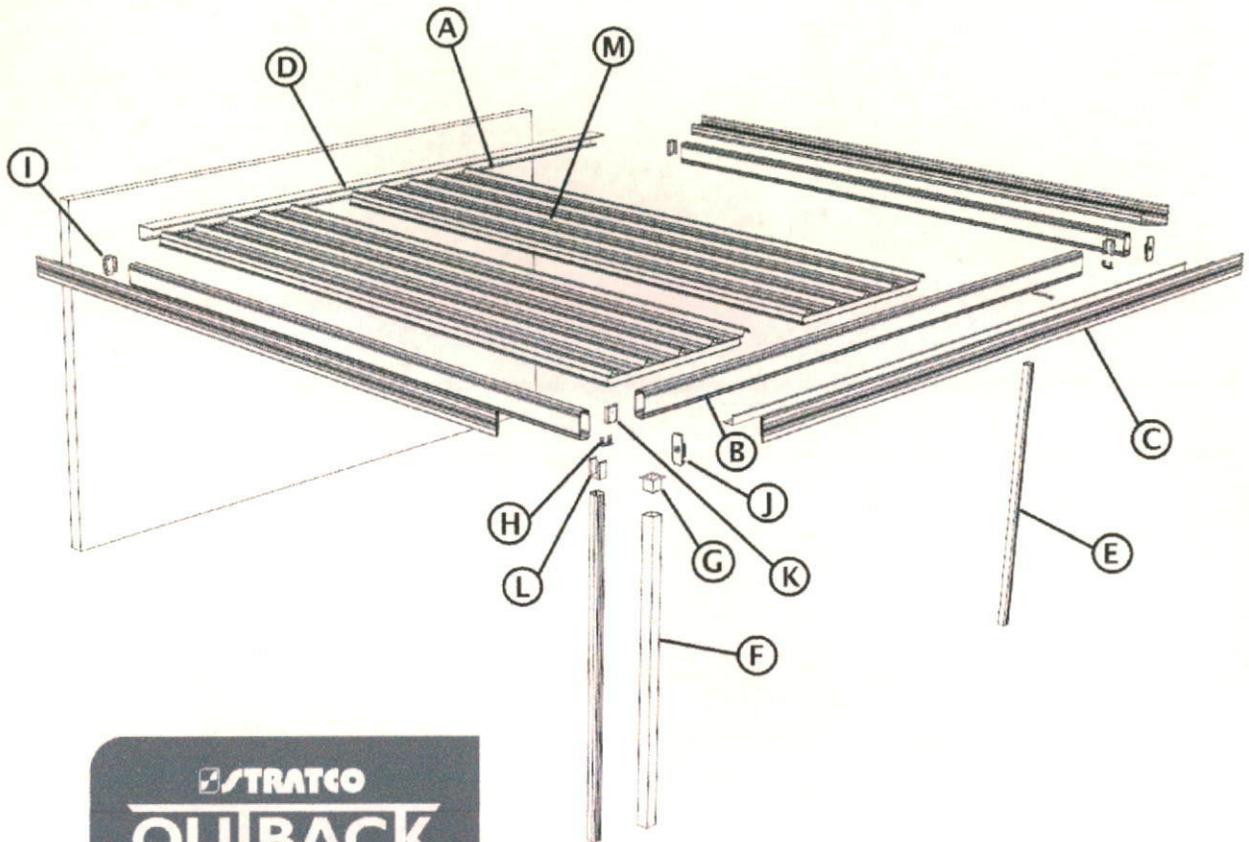
## General Notes

12. Stratco recommends that crawl boards be used across the roof sheeting during installation or maintenance to prevent damage to the roofing. Temporary support of beams at mid span is recommended during fixing of roof sheets.
13. Outback Sunroof units have been designed as non-trafficable and at no stage should be walked on.
14. Generally, structural members have an allowable dead load deflection of span/150, however this has been restricted to a maximum of 25mm for aesthetic and practical purposes.
15. A Flat Verandah, Patio, Carport or Pergola is deemed to be freestanding unless it is attached to an existing house for at least 75% of the length of its shortest side, and its longest side does not exceed twice the length of its shortest side. A Sunroof Verandah, Patio or Carport is deemed to be freestanding unless it is attached to an existing house for at least 75% of the rear attachment beam, unless indicated otherwise. Refer to the explanatory notes in the relevant section for better explanation and further attachment details.
16. The design contained within these span tables relate to wind classifications N1, N2, N3, N4, C1, C2 and C3 applicable to Regions A, B & C. In some cases tables are restricted to N1, N2 and N3. Stratco does not accept liability for any loss or damage suffered as a result of any errors in the interpretation or application of these span tables.
17. The Stratco Outback has been designed as a complete system. Only Stratco Outback components may be used. Any guarantee provided by Stratco will only apply if all components have been supplied by Stratco, and installed in accordance with Stratco details.
18. This booklet is produced in the interest of customer education and good consumer relations and should be read in conjunction with the Stratco Selection, Use and Maintenance brochure. Users should satisfy themselves that they are using the correct materials, approach and techniques. Correct maintenance is considered an essential part of maintaining structural integrity of Stratco Verandah, Patio & Carport products.
19. Stratco takes no responsibility for any misinterpretation of the detail provided or omissions. These tables are subject to change without notice. Users should satisfy themselves they are using the most up to date information available.

# STRATCO OUTBACK WITH COOLDEK VERANDAS, PATIOS & CARPORTS

Wind Classification; N1, N2, N3, N4 & N5

Regions: A & B



- |                     |                                       |
|---------------------|---------------------------------------|
| (A) B.I.P. Foam     | (H) Beam Filler                       |
| (B) Beam            | (I) Wall Bracket                      |
| (C) Gutter          | (J) Beam End Cap                      |
| (D) Back Channel    | (K) Beam Bracket                      |
| (E) Columns         | (L) Post Bracket                      |
| (F) Downpipe        | (M) Cooldek Roofing<br>Classic or CGI |
| (G) Downpipe Outlet |                                       |

# Cooldek Attached

Flat  
1A

# STRATCO OUTBACK WITH COOLDEK VERANDAHS, PATIOS & CARPORTS

Type 1A Attached One Side Only  
120 & 150 Beam  
Cooldek Classic or Cooldek CGI Roofing Panels

Maximum Allowable Span (mm)											
Beam size	Span S	N1 (W28)		N2 (W33)		N3 (W41)		N4 (W50)		N5 (W60)	
		Panel Thickness	Column Spacing C								
120 Beam	1500	50	5800	50	5800	50	5650	50	4100	100	2750
	2100	50	5450	50	5450	50	5450	50	3750	100	2500
	2700	50	5150	50	5150	50	5150	50	3500	100	2350
	3300	50	4950	50	4950	50	4750	50	3300	n/a	n/a
	3900	50	4800	50	4800	50	4500	75	3100	n/a	n/a
	4500	50	4650	50	4650	75	4400	100	2950	n/a	n/a
	5100	50	4500	50	4500	75	4200	n/a	n/a	n/a	n/a
	5700	75	4400	75	4400	75	4000	n/a	n/a	n/a	n/a
	6300	75	4300	75	4300	100	3900	n/a	n/a	n/a	n/a
	7000	100	4200	100	4200	n/a	n/a	n/a	n/a	n/a	n/a
Footings Size:		1		1		3		3		3	
Beam Overhang BO:		Maximum 900mm									
Maximum Allowable Span (mm)											
Beam size	Span S	N1 (W28)		N2 (W33)		N3 (W41)		N4 (W50)		N5 (W60)	
		Panel Thickness	Column Spacing C								
150 Beam	1500	50	6900	50	6900	50	6250	50	4100	100	2750
	2100	50	6500	50	6500	50	5800	50	3800	100	2500
	2700	50	6200	50	6200	50	5450	50	3550	100	2350
	3300	50	5950	50	5950	50	5100	50	3300	n/a	n/a
	3900	50	5700	50	5700	50	4850	75	3150	n/a	n/a
	4500	50	5550	50	5550	75	4700	100	2950	n/a	n/a
	5100	50	5400	50	5400	75	4500	n/a	n/a	n/a	n/a
	5700	75	5250	75	5250	75	4250	n/a	n/a	n/a	n/a
	6300	75	5150	75	5150	100	4100	n/a	n/a	n/a	n/a
	7000	100	5000	100	5000	n/a	n/a	n/a	n/a	n/a	n/a
Footings Size:		1		2		3		3		3	
Beam Overhang BO:		Maximum 1200mm									

## Notes & Requirements

- These tables must be read in conjunction with the General Notes and detail drawings on pages 6-12.
- Span S is the distance between the back face of the back channel and the outside face of the fascia beam. Column spacing C is the distance between column centres. Beam overhang BO is the distance between the column centre and the outside face of the side beam.
- The back span shall be a minimum 1.5 x BO for units with a beam overhang.
- This design may be rotated through 90° to run the roof sheeting parallel to the wall or eaves line provided that the length does not exceed twice the width of the structure.
- The side fascia beam is non structural and may be omitted.
- Columns are to be 68mm x 68mm x 0.6mm BMT profiled Outback columns.
- Columns on attached units may be fixed to existing concrete slab using the footing plate details shown on page 7.
- Larger panel thicknesses can be substituted for thinner panel sizes if required.
- Interpolation may be used for values required between those shown in the tables.

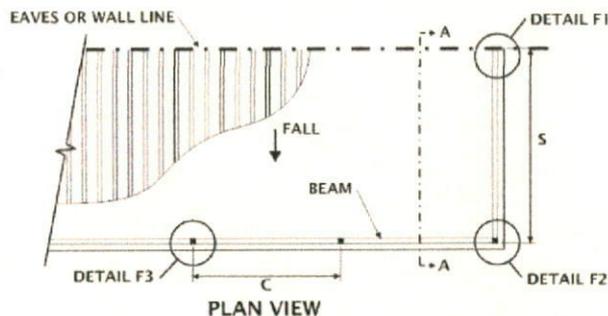
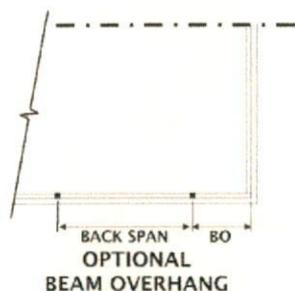
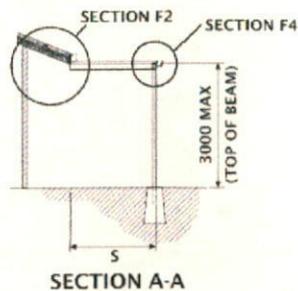
## Footings

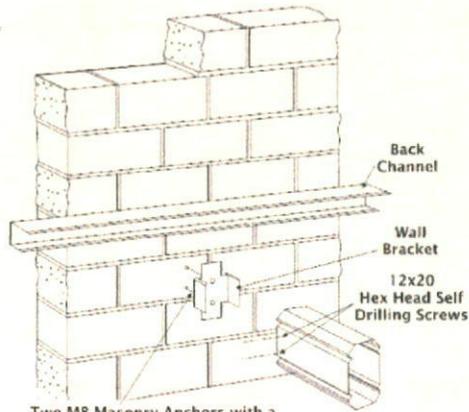
- 300 x 300 x 600mm deep with 60mm corbel.
- 350 x 350 x 650mm deep with 60mm corbel.
- 350 x 350 x 750mm deep with 75mm corbel.
- 450 x 450 x 750mm deep with 75mm corbel.

## Height Increase

Units to be located in areas of wind classification N1 (W28), N2 (W33) or N3 (W41), with columns embedded into concrete footings, will be suitable at heights over 3000mm up to a maximum 3600mm with the following requirements:

- All Outback columns shall be reinforced with 50x50x3.0mm SHS.
- Increase allocated footing type by 1.

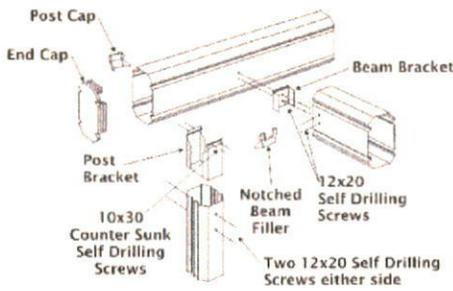




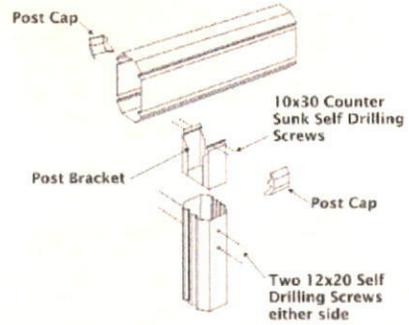
Two M8 Masonry Anchors with a minimum embedment of 65mm  
or  
Two 8mm diameter Screwbolts with a minimum embedment of 65mm  
Minimum edge distance of Bolts and Screws is (10 x dia)

Note: A sufficient height of brickwork is required above the attachment to provide adequate hold down.

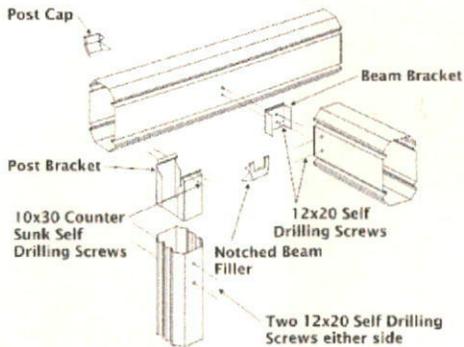
DETAIL F1



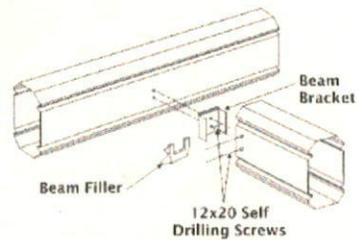
DETAIL F2



DETAIL F3



DETAIL F4

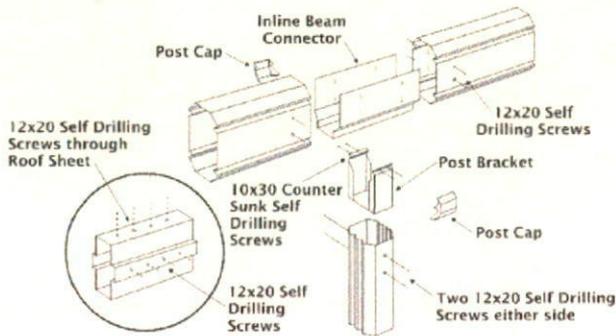


DETAIL F5

# STRATCO OUTBACK WITH COOLDEK VERANDAHS, PATIOS & CARPORTS

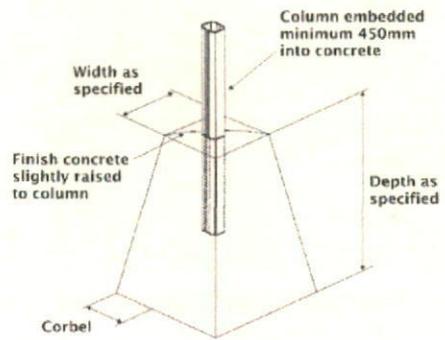
Sub Heading

Flat

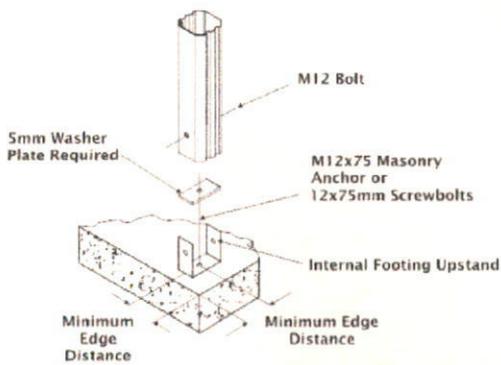


**FULL MOMENT BEAM CONNECTOR**  
(Mid Span Joiner)

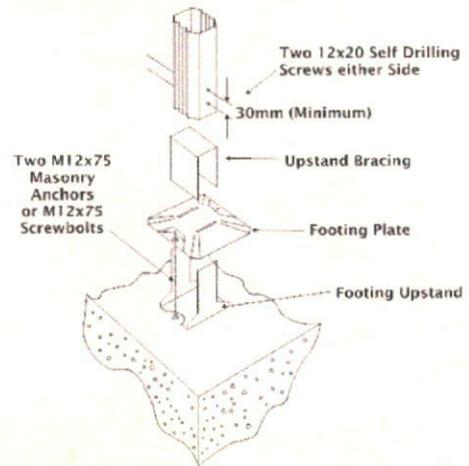
**INLINE BEAM CONNECTOR**



**FOOTING**



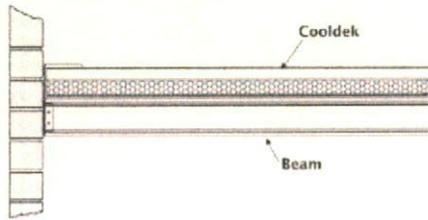
**ATTACHED VERANDAH INTERNAL FOOTING UPSTAND**



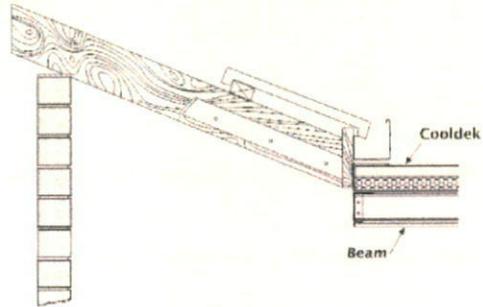
**ATTACHED VERANDAH FOOTING PLATE**

**Note:** The minimum edge distance is 70mm for M10 anchors, 75mm for M12 anchors and 120mm for M16 anchors.

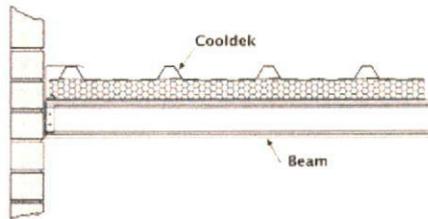
ATTACHED



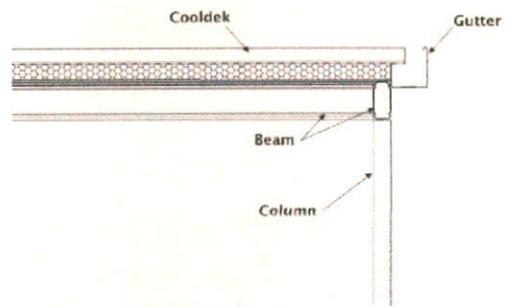
SECTION F1



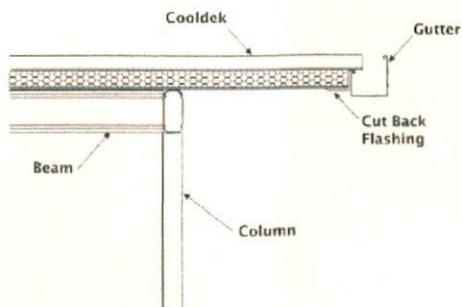
SECTION F2



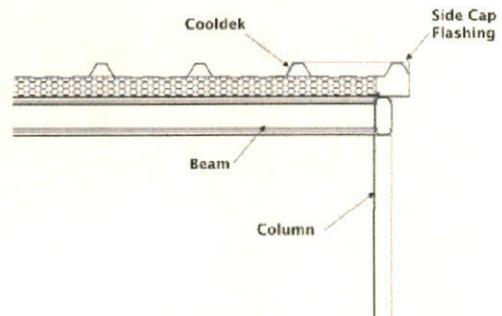
SECTION F3



SECTION F4



SECTION F5

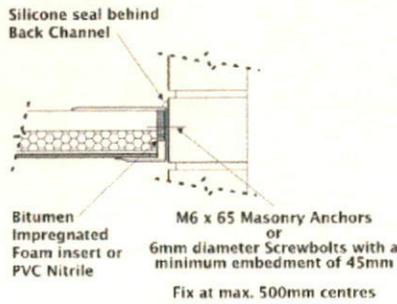


SECTION F6

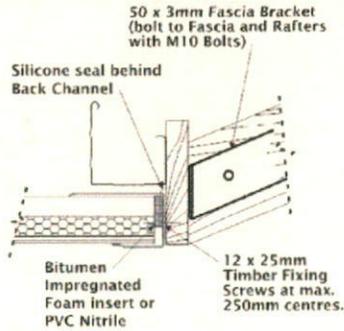
# STRATCO OUTBACK WITH COOLDEK VERANDAHS, PATIOS & CARPORTS

## Back Channel Details

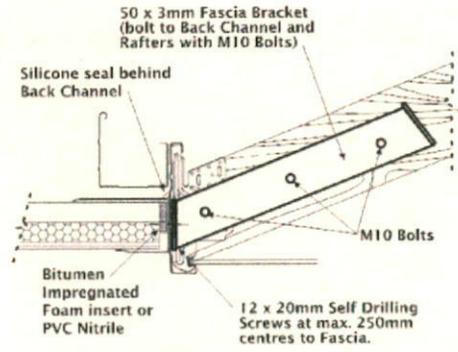
### Back Channel Fixing Details



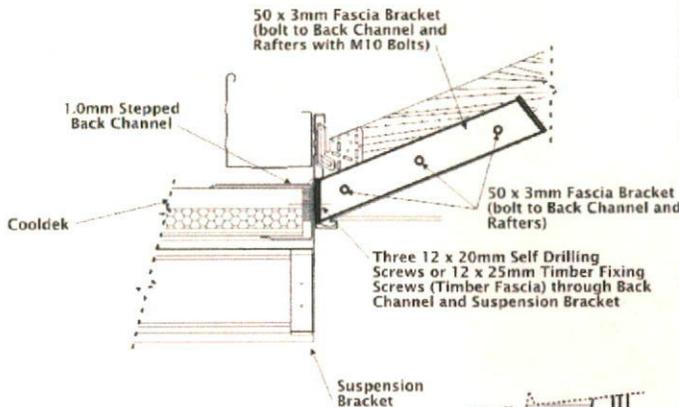
**BRICKWORK**



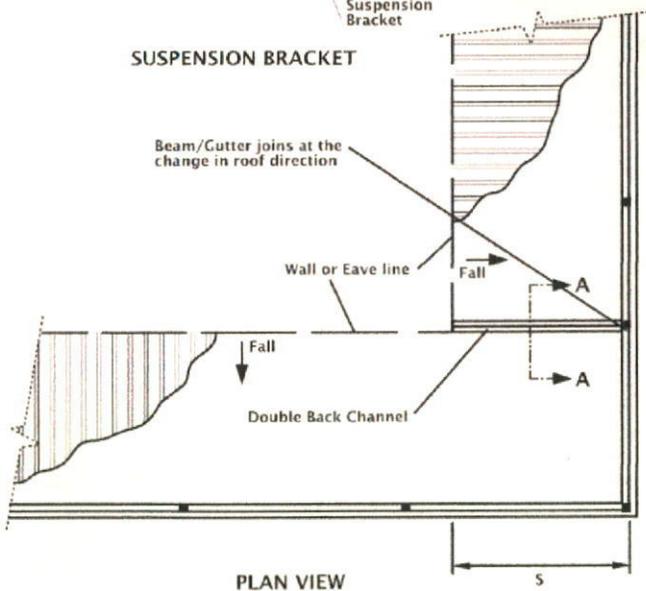
**TIMBER FASCIA**



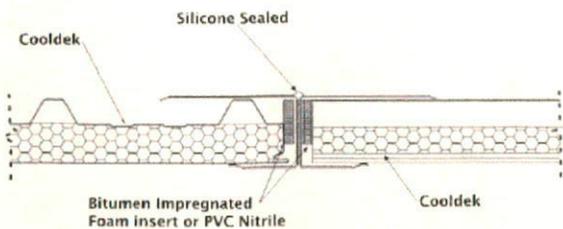
**STEEL FASCIA**



**SUSPENSION BRACKET**



**PLAN VIEW**



**TYPICAL SECTION A-A  
DOUBLE BACK CHANNEL DETAILS**

Fascia brackets are generally fastened at maximum 1200mm centres to back channel and rafters. Additional strengthening may be required, it is the builder's responsibility to determine the adequacy of the rafters and the frequency of the brackets for each individual situation (refer note 10, General Notes).

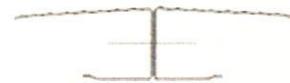
#### RECOMMENDED BACK CHANNEL FIXING

**Timber Fascia:** Use 12 x 25 timber fixing screws at maximum 250mm centres. It is recommended steel fascia brackets are fastened to the side rafters at maximum 1200mm centres.

**Brickwork:** Use M6 x 65 masonry anchors OR 6mm diameter screwbolts with a minimum embedment of 45mm. Fix at maximum 500mm centres.

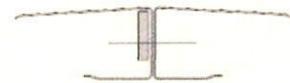
**Steel Fascia:** Use two 12 x 20 self drilling screws at maximum 250mm centres. It is recommended steel fascia brackets are fastened to the side of rafters at maximum 1200mm centres.

SECTION	MAXIMUM ALLOWABLE SPAN(S)				
	N1 (W28)	N2 (W33)	N3 (W33)	N4 (W50)	N5 (W60)
Double Back Channel	3700	2850	1950	1500	n/a
Single Re-Inforced Back Channel	4200	3600	2500	1800	1600
Double Re-Inforced Back Channel	4500	4500	3400	2500	2200



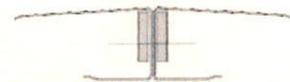
#### DOUBLE BACK CHANNEL

Back channels fixed with 12 x 20 Self Drilling Screws from alternating sides at maximum 300mm centres.



#### SINGLE REINFORCED BACK CHANNEL

1 strip 50 x 5 mm galvanised mild steel flat strip fixed by 6mm diameter bolts at maximum 500mm centres.



#### DOUBLE REINFORCED BACK CHANNEL

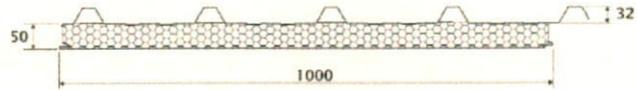
2 strip 50 x 5 mm galvanised mild steel flat strip fixed by 6mm diameter bolts at maximum 500mm centres.

Roof Sheeting

RECOMMENDED FIXING:

50mm Classic Panel:

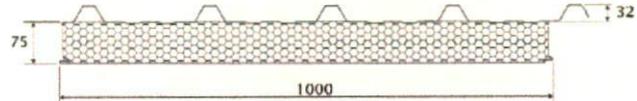
Secure sheeting to beams with one 14 x 125mm self drilling screw and cyclone cap per crest. All screws require a neoprene seal.



50mm COOLDEK CLASSIC PANEL

75mm Classic Panel:

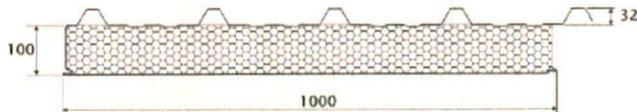
Secure sheeting to beams with one 14 x 150mm self drilling screw and cyclone cap per crest. All screws require a neoprene seal.



75mm COOLDEK CLASSIC PANEL

100mm Classic Panel:

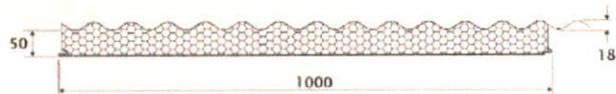
Secure sheeting to beams with one 14 x 175mm self drilling screw and cyclone cap per crest. All screws require a neoprene seal.



100mm COOLDEK CLASSIC PANEL

50mm CGI Panel:

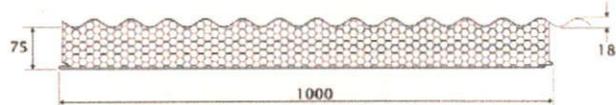
Secure sheeting to beams with one 14 x 110mm self drilling screw and cyclone cap every second crest. All screws require a neoprene seal.



50mm COOLDEK CGI PANEL

75mm CGI Panel:

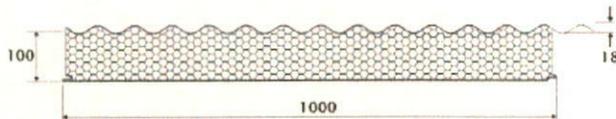
Secure sheeting to beams with one 14 x 125mm self drilling screw and cyclone cap every second crest. All screws require a neoprene seal.



75mm COOLDEK CGI PANEL

100mm CGI Panel:

Secure sheeting to beams with one 14 x 150mm self drilling screw and cyclone cap every second crest. All screws require a neoprene seal.



100mm COOLDEK CGI PANEL

All sheeting is to be secured into receiving channels with 4.8mm sealed rivets at maximum 200mm centres to the underside of sheeting and one 12 x 20 self drilling screw with neoprene washer per crest to the top of sheets for Classic and to every third crest for CGI panels.

Secure sheeting to parallel beams with 14 gauge screws and neoprene washers. If sheeting runs parallel to receiving channel, secure with rivets at maximum 200mm centres to the underside.

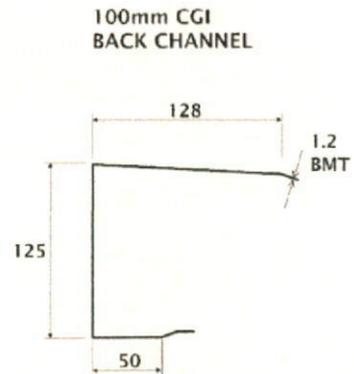
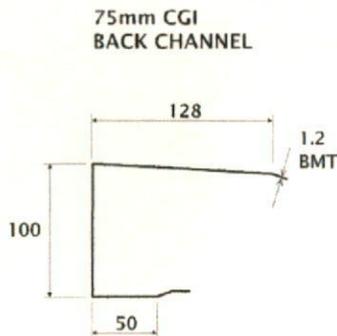
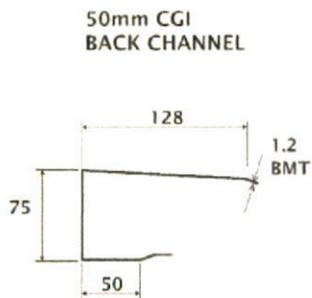
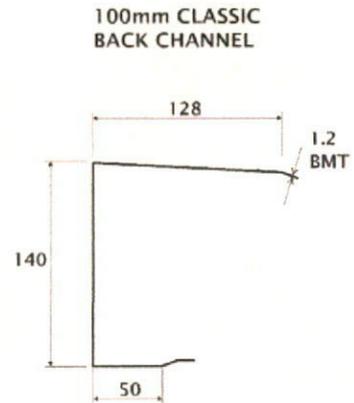
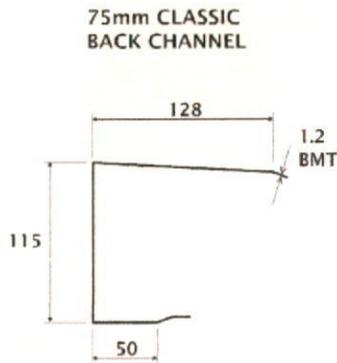
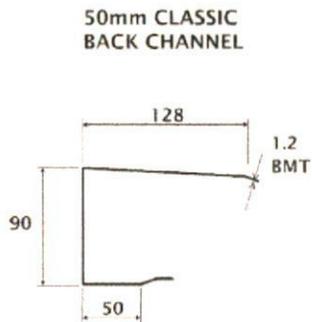
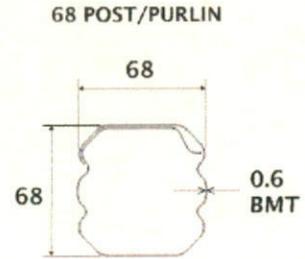
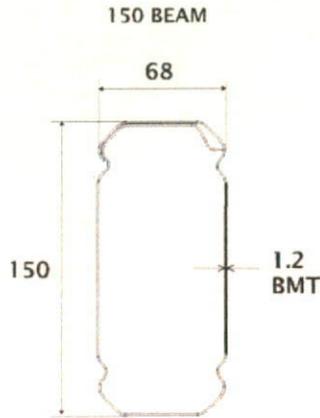
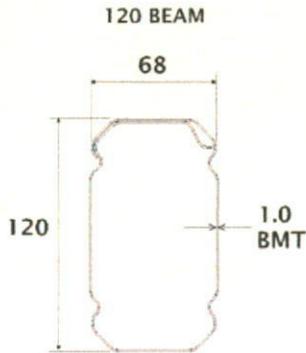
Secure side laps with 12 x 20 screws with neoprene washers at approximately 1000mm centres.

# STRATCO OUTBACK WITH COOLDEK VERANDAHS, PATIOS & CARPORTS

Flat

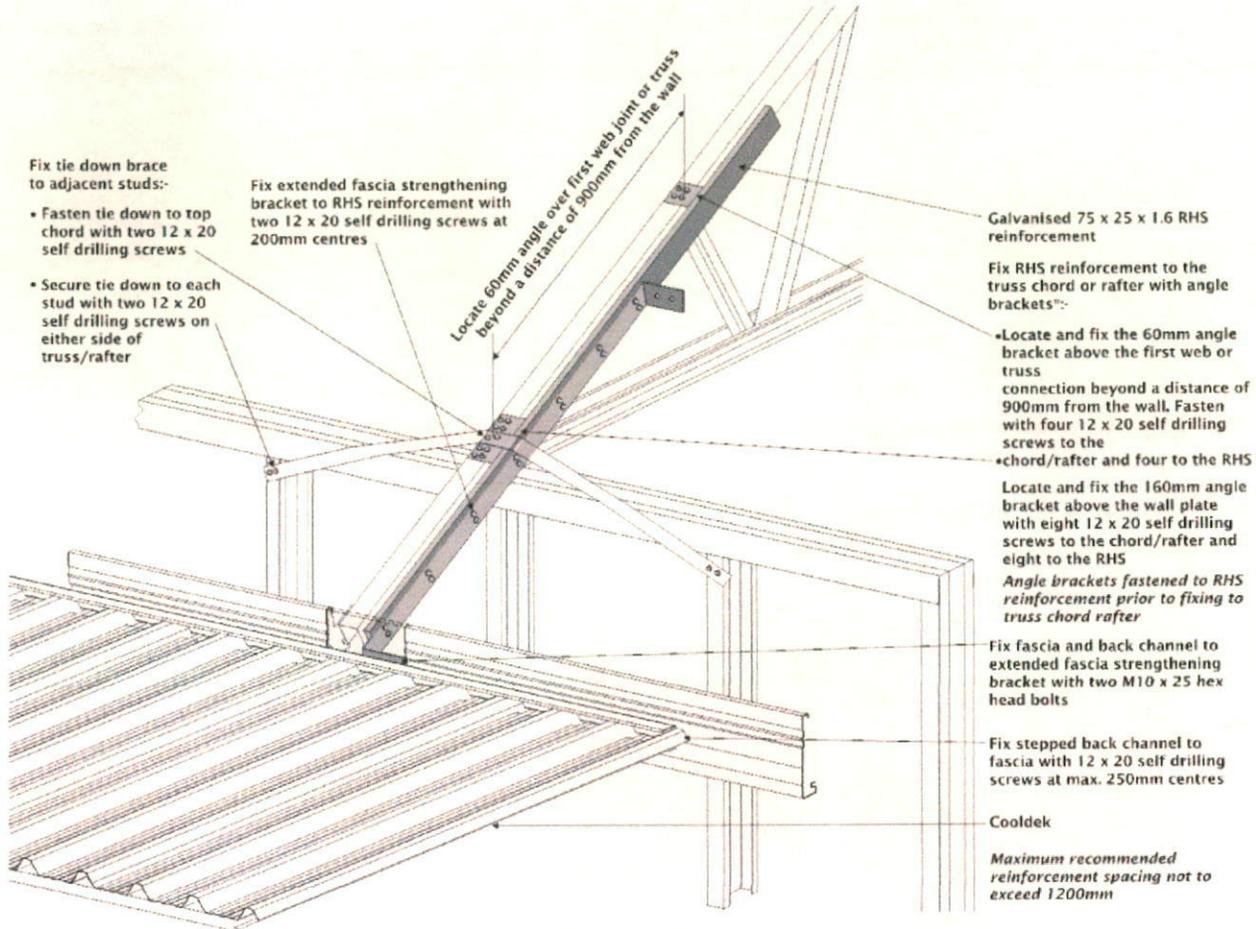
Dimensions - Structural Sections

## Structural Sections



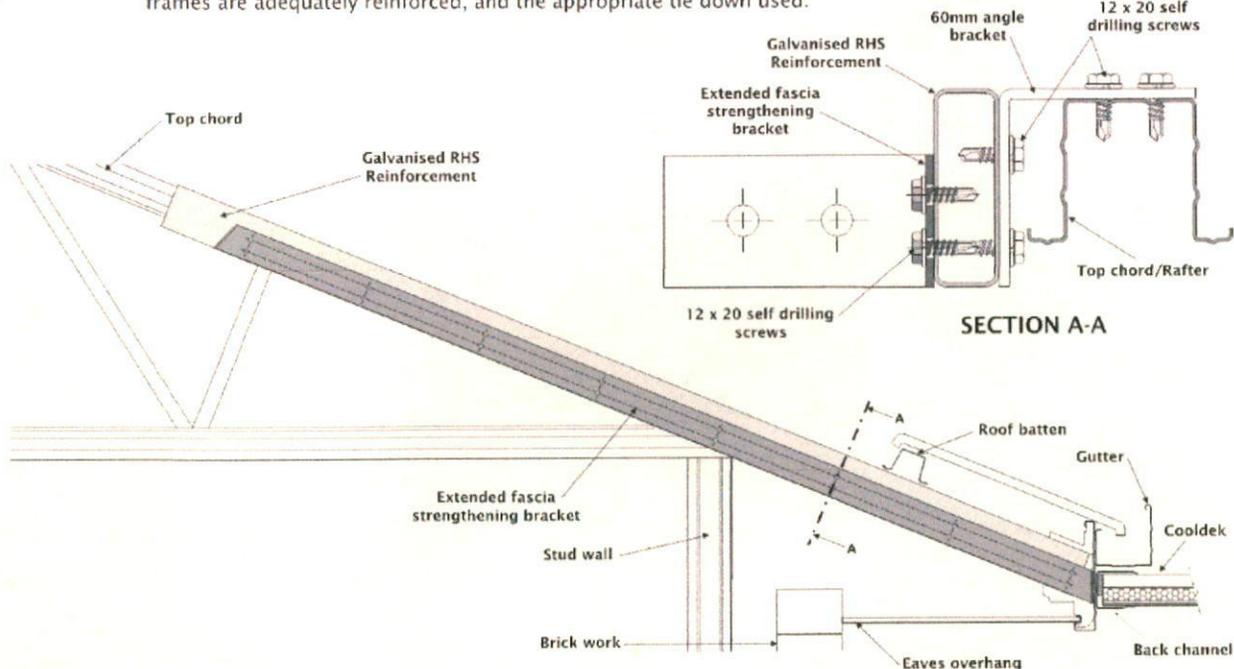
# STRATCO OUTBACK WITH COOLDEK VERANDAHS, PATIOS & CARPORTS

## Flat Attachment Detail for Steel Framed Houses



### ROOF FRAME REINFORCEMENT FOR STEEL FRAMED HOUSES

**Note:** It is the builders responsibility to ensure that rafters, trusses, and wall frames are adequately reinforced, and the appropriate tie down used.



### SIDE ELEVATION - ROOF FRAME REINFORCEMENT FOR STEEL FRAMED HOUSES