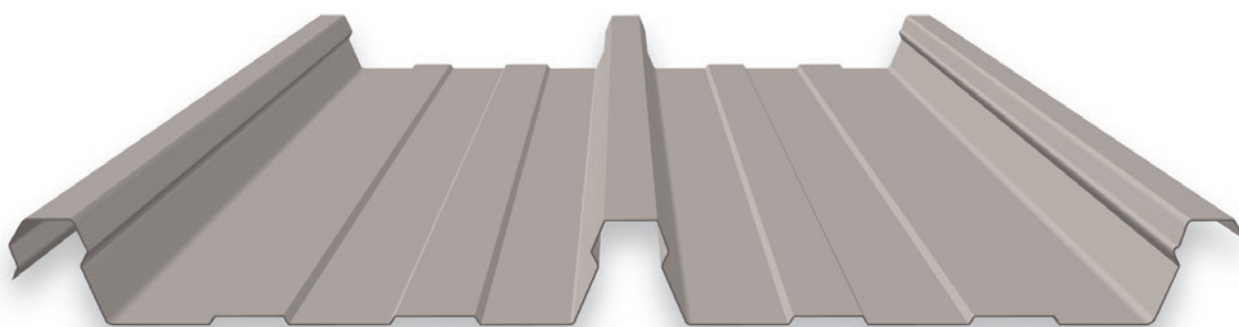


STRAMIT SPEED DECK® 500 CONCEALED FIXED DECKING

Product Technical Manual



SELECTION AND SPECIFICATION



FEATURES

- 500mm Cover – easy sheet coverage calculations.
- Hi-tensile Steel – lightweight and high strength with improved damage resistance.
- Bold Ribs – provide better performance with an architecturally pleasing profile.
- Quick Installation – wide design provides fewer clips (preloaded if desired) ensuring effective cost saving.
- Secret Fixing – concealed clips for enhanced security
- 1° Minimum Pitch – in long lengths to save support structure.
- Fully Tested – a full range of load performance tables to suit almost any application.

APPLICATIONS

The visual appeal, light weight and weather resistance of Stramit Speed Deck® 500 decking make it ideal for many commercial roofing applications. The large water-carrying capacity and weather-tightness permit very low roof pitches, leading to economies in the building structure.

Stramit Speed Deck® 500 cladding is only intended for use in commercial / industrial / residential roof cladding applications. Do not use for any other purpose.

IMPORTANT NOTICE AND DISCLAIMER

The information contained within this brochure is for general use and information only. Before application in a particular situation, Stramit recommends that you obtain appropriate independent qualified expert advice confirming the suitability of product(s) and information in question for the application proposed. While Stramit accepts its legal obligations, be aware however that to the extent permitted by law, Stramit disclaims all liability (including liability for negligence) for all loss and damage resulting from the use of the information provided in this brochure.

MATERIALS

Stramit Speed Deck® 500 decking is manufactured from hi-tensile G550 colour coated steel, aluminium-zinc-magnesium alloy coated, or zinc-aluminium alloy coated steel. In some locations galvanised and severe environment colour coated steel may be available by arrangement. Colour coated steels are in accordance with AS/NZS2728 – Category 3 and, for the substrate, with AS1397. Aluminium-zinc-magnesium alloy coated AM100/AM125, zinc-aluminium alloy coated AZ150 and galvanised Z450 conform to AS1397.

Stramit has a comprehensive range of colours as standard. Ask your nearest Stramit location for colour availability.

STRAMIT SPEED DECK® 500 DECKING - SHEET MASS (kg/m ² of roof area)			
	ZINCALUME®	COLORBOND®	GALVANISED
0.48mm BMT	5.36	5.44	5.78

ADVERSE CONDITIONS

Stramit Speed Deck® 500 decking will give excellent durability in almost all locations. With all of its fastenings protected beneath the decking, Stramit Speed Deck® 500 decking can be expected to outlast through-fixed roofing. It is however important to choose the correct coating for each application environment. The table below shows the suitability of coating types for different exposure conditions.

Suitability of coating type	Roof sheeting - site exposure condition		
	mild/moderate	severe marine	very severe marine
Zinc-Aluminium (AZ150)	✓	✗	✗
ZINCALUME® (AM125)	✓	✗	✗
COLORBOND®	✓	✗	✗
COLORBOND® METALLIC	✓	✗	✗
COLORBOND® ULTRA	N/A	✓	✗
COLORBOND® STAINLESS	N/A	N/A	✓

The approximate site exposure conditions in the table above are defined below.

Site exposure condition	Roof sheeting - distance of site from	
	breaking surf/exposed marine	calm marine
mild/moderate	>200m	>100m
severe marine	>100m	>0m
very severe marine	>0m	>0m

The suitability and exposure tables above are current at the time of publication and are guidelines only; conditions will vary from site to site. Please check the Bluescope Technical Bulletins at www.bluescopesteel.com.au for the latest information and guidance on selection, maintenance and durability. If uncertain about the appropriate coating for a particular application, or if the product is to be used in environments affected by industrial emissions, fossil fuel combustion, animal farming, or has unwashed areas, please contact your nearest Stramit office for advice.

COMPATIBILITY

All building products need to be checked for compatibility with adjacent materials. These checks need to be for both direct contact between materials, and where water runs from one material to another. The following guidelines generally avoid material incompatibility:

- For zinc-aluminium/aluminium-zinc-magnesium alloy coated steel, colour coated steel and galvanised steel roofs avoid copper, lead, green or treated timber, stainless steel, uncoated steel and mortar or concrete.
- In addition galvanised steel roofs should not receive drainage from aluminium or any inert materials, such as plastics, glass, glazed tiles, colour coated and zinc-aluminium/aluminium-zinc-magnesium alloy. Contact Stramit for more detailed information.

TESTING

Stramit has in-house, purpose built, testing equipment used to design, develop and improve products for the Australian market. In addition many Stramit products are tested or witnessed by independent organisations.

These include:

- Cyclone Testing Station (James Cook University)
- The University of Sydney

This ongoing research and development activity ensures that Stramit remains at the forefront of innovation, design and consumer information.

ARCHITECTURAL SPECIFICATION

This specification can be found on the Stramit website and can be easily downloaded onto your documentation.

The roofing/walling shall be 0.48mm BMT Stramit Speed Deck® 500 decking, in continuous lengths with trapezoidal ribs 41mm high, spaced at 250mm centres. Sheeting material shall be protected steel sheet to AS1397 with a minimum yield stress of 550MPa (Grade G550) and an AM100/AZ150 coating with an oven baked paint film of selected colour, or a plain AM125/AZ150 coating.

The sheeting shall be fixed to the purlins/girts in accordance with the manufacturer's recommendations. Suitable fixing screws in accordance with Australian Standard AS3566, Class 3, shall be used at every clip at every support. Sheets shall be laid in such a manner that the approved side lap faces away from the prevailing weather. A minimum of 50mm shall be provided for projection into gutters.

Flashings shall be supplied in compatible materials as specified, minimum cover of flashing shall be 150mm. All sheeting shall be fixed in a workman like manner, leaving the job clean and weathertight. Repair minor blemishes with touch-up paint supplied by the sheeting manufacturer. All debris (nuts, screws, cuttings, filings etc.) shall be cleaned off daily.

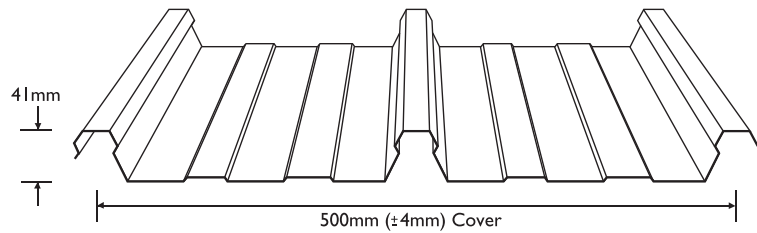
DESIGN

SPANS

The spans shown below take account of 'normal' foot traffic and wind resistance including local pressure zone effects.

Pressures are based on AS4055 or

AS/NZS1170.2. Where the two standards differ, the worst case has been taken for each classification. Data should only be used for buildings 7m or less in height, 1000m² or less in area, where both length and width exceed the building height and site is unaffected by land topography.



STRAMIT SPEED DECK® 500 DECKING - MAXIMUM SPAN CHART (mm)												
bmt (mm)	roofs - all areas unless noted *					roof corner areas with pitch < 10°					overhangs	
	pressure (kPa)		double spans	equal spans	internal (end) span combination	pressure (kPa)		double spans	equal spans	internal (end) span combination	free edge	stiffened edge
service-ability	strength	service-ability				strength						
N1 or Region A (TC3, FS) WIND CLASSIFICATION												
0.48	0.74	1.25	1700	1700	2100 (1750)	1.07	1.81	1700	1700	2100 (1750)	150	450
N2 or Region B (TC3, FS) or Region A (TC2.5, PS) WIND CLASSIFICATION												
0.48	1.05	1.75	1700	1700	2100 (1750)	1.53	2.53	1700	1700	1900 (1600)	150	400
N3 or Region B (TC2.5, PS) and Region A (TC2, NS) WIND CLASSIFICATION												
0.48	1.32	2.70	1700	1700	1950 (1650)	1.92	3.92	1600	1450	1500 (1250)	100	350

Internal spans must have both end spans 20% shorter. TC - Terrain category. FS, PS, NS - Full, partial and no shielding. Internal pressure coefficient +0.2/-0.3. Values are only valid for use with steel members of 1.5mm or thicker. Where thinner supports are used, fastener capacity must be checked. Refer to Stramit® Top Hat & Battens Product Technical Manual for more information.

For more specific applications Stramit Speed Deck® 500 decking must be designed to the pressure and foot traffic limitations below.

Spans may exceed those shown in this table, provided the wind pressure and foot traffic limits are not exceeded.

PRESSURES

STRAMIT SPEED DECK® 500 DECKING - SERVICEABILITY LIMIT STATE CAPACITY											
thickness bmt (mm)	fasteners per sheet at each support	span type	pressure (kPa) at the spans (mm) shown								
			600	900	1200	1500	1800	2100	2400	2700	3000
0.48	1 clip and 2 screws	internal	2.92	2.80	2.35	1.96	1.64	1.39	1.19	0.99	0.62
		equal	2.99	2.86	2.40	2.00	1.68	1.43	1.22	1.01	0.64
	double	3.44	3.29	2.76	2.30	1.93	1.64	1.40	1.16	0.73	

STRAMIT SPEED DECK® 500 DECKING - STRENGTH LIMIT STATE CAPACITY (NON-CYCLONIC)											
thickness bmt (mm)	fasteners per sheet at each support	span type	pressure (kPa) at the spans (mm) shown								
			600	900	1200	1500	1800	2100	2400	2700	3000
0.48	1 clip and 2 screws	internal	12.50	8.96	6.21	4.46	3.25	2.37	1.69	1.16	0.73
		equal	10.38	7.44	5.15	3.70	2.70	1.96	1.40	0.96	0.61
	double	12.50	8.96	6.21	4.46	3.25	2.37	1.69	1.16	0.73	

Tables are based on testing to AS1562.1 and AS4040 parts 0 and 2. Internal spans must have both end spans 20% shorter.

Values only valid for use with steel support members of 1.5mm or thicker. Where thinner supports are used, fastener capacity must be checked.

FOOT TRAFFIC

Foot traffic limits for Stramit Speed Deck® 500 decking are shown for three alternate foot traffic categories. These are:

- High Maintenance – for applications with repeated maintenance, particularly where personnel may be unfamiliar with correct procedures for walking on metal roofs.
- Normal – based on traditional expectations, with moderate maintenance foot traffic using designated foot paths.
- Controlled – spans that conform to AS1562.1 with 1.1kN load specified in AS/NZS1170.1 for R2 – Other Roofs. These require minimal careful foot traffic only on the designated footpath. Suggested for use only where occasional aesthetic imperfections from foot traffic are acceptable.

STRAMIT SPEED DECK® 500 DECKING - FOOT TRAFFIC LIMITED SPANS (mm)				
thickness bmt	span type	foot traffic limits		
		heavy	normal	controlled
0.48	internal	-	2100	3000
	equal	-	1700	2400
	double	-	1700	2400

Tables are based on tests to AS1562.1 and AS4040 parts 0 and 1.

For more information on foot traffic performance of Stramit Speed Deck® 500 decking and other Stramit roofing profiles refer to Stramit's Foot Traffic Guide.

SPRING CURVING

Stramit Speed Deck® 500 decking can be spring-curved, concave and convex, including curved ridges, provided it is sealed at the apex and within the recommended limits below:

STRAMIT SPEED DECK® 500 DECKING - SPRING-CURVED RADII LIMITS (m)					
bmt (mm)	performance restricted		restricted by drainage at the rainfall intensities shown		
	minimum* radius	lowest neutral radius	370 mm/hr	220 mm/hr	150 mm/hr
0.48	50*	159	210	354	>500

*At these radii a maximum support spacing of 1200mm applies, and limit state pressure capacities are reduced by 14% for serviceability and 7% for strength. These reductions apply proportionately up to the lowest neutral radius.

For more comprehensive information on spring curving Stramit Speed Deck® 500 decking and other Stramit roofing profiles refer to the Stramit Spring Curving Guide.

DESIGNING FOR SNOW

Concealed fixed decking such as Stramit Speed Deck® 500 decking is the preferred roofing material in alpine areas. This, and many other design suggestions, can be found in Australian Standards HB 106 – 'Guidelines for Design of Structures in Snow Areas'. Particular attention is drawn to maintaining an adequate roof slope for snow shedding, and screw fixing of deck pans beneath the ridge capping.

Downward load capacities for Stramit Speed Deck® 500 decking have not been tabulated, but can be assumed to equal the outward capacities shown.

THERMAL EXPANSION

All metal roof sheeting is subject to thermal expansion and, where there is a temperature difference between the sheeting and the structure, this needs to be accommodated. The colour of the sheeting will affect the amount of thermal expansion, and whether the sheet is flat or curved will affect its ability to resist without problems.

Stramit Speed Deck® 500 decking has excellent resistance to the problems associated with thermal expansion. Nevertheless sheet lengths should be limited to those shown below.

STRAMIT SPEED DECK® 500 DECKING - MAXIMUM SHEET LENGTH (m)		
roof colour	light	dark
flat	35	25
spring-curved	30	20

WATER CARRYING

Stramit Speed Deck® 500 decking has excellent water-carrying capacity. This and the decking stiffness enable roof slopes to be as low as one degree for many applications. Roof run lengths are the combined lengths of all roof elements contributing to a single pan drainage path. This can include the roof length upstream of a roof penetration that concentrates flow into other pans. The table below gives slopes for 100 year return period rainfall intensity.

STRAMIT SPEED DECK® 500 DECKING - MINIMUM ROOF SLOPE (degrees)												
rainfall intensity mm/hr	total roof run length (m)										max roof run length (m) at min slope	
	70	80	90	100	110	120	130	140	150	160		170
150							1.0	1.0	1.0	1.2	163	
175	<i>Minimum</i>						1.0	1.1	1.3	1.6	1.9	139
200	<i>Slope 1°</i>			1.0	1.0	1.3	1.6	1.9	2.3	2.7	122	
225			1.0	1.1	1.4	1.8	2.2	2.6	3.1	3.6	108	
250		1.0	1.1	1.5	1.9	2.4	2.9	3.4	4.0	4.7	97	
275	1.0	1.1	1.5	2.0	2.5	3.0	3.7	4.3	5.1	5.8	89	
300	1.0	1.4	1.9	2.5	3.1	3.8	4.5	5.3	6.2	7.1	81	
325	1.0	1.3	1.8	2.4	3.0	3.8	4.6	5.5	6.4	7.5	75	
350	1.1	1.6	2.2	2.9	3.7	4.5	5.5	6.5	7.6	8.8	69	
375	1.3	1.9	2.6	3.4	4.3	5.3	6.4	7.6	8.9	11.0	65	
400	1.6	2.3	3.1	4.0	5.1	6.2	7.5	8.8	11.0	14.0	61	

Based on AS1562.1

For more information on water carrying performance of Stramit Speed Deck® 500 decking and other Stramit roofing profiles refer to Stramit's Roof Slope Guide.

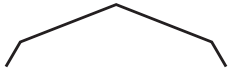
Maximum water protection is also ensured by the absence of faster penetrations when using Stramit Speed Deck® 500 decking.

PROCUREMENT

PRICES

Prices on Stramit Speed Deck® 500 decking and its accessories can be obtained from your nearest Stramit location or distributor of Stramit® products. As Stramit does not provide an installation service, ask your tradesperson for a supply and fix price. Contact your nearest Stramit location for the names of tradespersons in your area.

RELATED PRODUCTS



Ridge Capping -
standard or custom dimensions

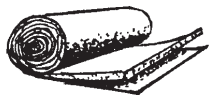


Flashings -
a range of custom flashings

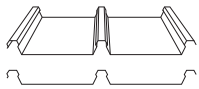


Filler Strips -
top and bottom; for eaves, ridge and joint sealing

Use only where sealing is preferred to ventilation



Insulation & roofing mesh -
a range of mesh, Sisalation®, plain & foil backed blanket



Translucent sheeting -
fibreglass sheeting in a range of shades and densities

LENGTH

Stramit Speed Deck® 500 decking is supplied cut-to-length. When designing or transporting long products ensure that the length is within the limit of the local Transport Authority regulations. The manufacturing tolerance on the length of product supplied is +0, -15mm.

ORDERING

Stramit Speed Deck® 500 decking can be ordered directly, through distributors, or supplied and fixed from a roofing contractor.

DELIVERY/UNLOADING

Delivery can normally be made within 48 hours, subject to the delivery location, quantity and material availability, or can be at a pre-arranged date and time. Please ensure that suitable arrangements have been made for truck unloading, as this is the responsibility of the receiver. Pack mass may be up to one tonne. When lifting Stramit Speed Deck® 500 decking, care should be taken to ensure that the load is spread to prevent damage.

HANDLING/STORAGE

Stramit Speed Deck® 500 decking should be handled with care at all times to preserve the product capabilities and quality of the finish. Packs should always be kept dry and stored above ground level while on site. If the sheets have become wet, they should be separated, wiped and placed in the open to promote drying.

INSTALLATION

FASTENERS

All fastening screws must conform to AS3566 - Class 3. For connecting clips to purlins use:



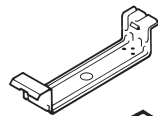
For steel (1.5mm bmt or greater) - 10 x 16mm wafer-head self-drilling (2 per clip) & threading screws (available pre-loaded into clips in some locations)



For timber
- 10 x 25mm wafer-head type 17 self-drilling screws (2 per clip)

ACCESSORIES

Use only the correct, authentic, Stramit accessories:



Stramit Speed Deck® 500 Clip
- supplied in easy to handle boxes of 50 clips



Stramit Speed Deck® 500 End Cap
- used with silicone sealant for roof penetrations

INSTALLATION

Stramit Speed Deck® 500 decking is readily installed with or without fibreglass insulation blanket. If practical lay sheets in the opposite direction to prevailing weather.

Installation of Stramit Speed Deck® 500 decking is a straightforward procedure using the following fixing sequence:

- 1) Ensure all purlins are in line and correctly installed. Using a string line or the edge of the first sheet, align the first row of fixing clips taking care that the clips are aligned with the arrows in the direction of laying. Screw the clips to the purlins.
- 2) Locate the first sheet over the clips with the correct projection at each end of the sheet. Snap each rib on to the clip at every purlin.

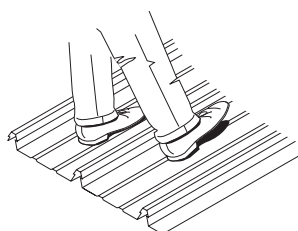
- 3) Place next clip over trailing edge of the first sheet, allowing it to fall to the purlin. Fasten clip to purlin as before.
- 4) Continue to lay sheets as before. From time to time measure coverage of sheets at ridge and eaves to maintain squareness.
- 5) At end of purlin cut fixing clip (and, if necessary, the roof sheet) to suit.
- 6) Turn up ends of sheet at ridge and turn down eaves ends into gutters using the Stramit Speed Deck® 500 decking turn up/down tool.
- 7) Secure the leading edge of the roof with full or cut-back clips and the trailing edge with finishing clips, or sealed fasteners through the roof tray, at every purlin. Cover these with side flashings. Install all flashings as required to weatherproof and complete the roof. Fix flashing according to AS1562.1.
- 8) Clean the roof after each day's work, removing all screws, cuttings, swarf etc, and leave roof clean and watertight. Repair any minor blemishes in colour coated finish with Stramit supplied touch-up paint.

INSULATION

Insulation blanket up to 50mm in thickness can be readily used.

WALKING

As with all roofing products, we recommend extra caution be taken when walking on the roof. When walking on Stramit Speed Deck® 500 decking roofing always wear flat rubber soled shoes and place feet only in the pans, taking care to avoid the last pan or two near edges of the metal roof area.



Walk only in pans, or on ribs at purlin supports.

GOOD PRACTICE

Stramit recommends that good trade practice be followed when using this product, such as that found in Australian Standards Handbook HB39.

SHEET HANDLING

Cut resistant or leather gloves should be worn when handling product. Foot protection should be worn when handling and transporting product.

CUTTING

Stramit Speed Deck® 500 decking can be easily cut, where required, using a power saw with a steel cutting blade or a power nibbler and, for localised cutting, tin snips. Avoid the use of abrasive discs as these can cause burred edges and coating damage. Please dispose of any off-cuts carefully.

ADDITIONAL INFORMATION

MAINTENANCE

Exterior surfaces of metal products unwashed by rain can benefit from occasional washing to remove build-up of corrosive salts. Walls beneath eaves or awnings are such a situation.

FUTHER INFORMATION

As well as our standard range of Technical Manuals, Installation Leaflets, Case Studies and other promotional literature Stramit has a series of Guides to aid design.

Please contact your nearest Stramit location, or visit www.stramit.com.au to download this manual or any of the many others available.

OTHER PRODUCTS

Stramit offers a wide range of building products, including:

- Purlins and girts
- Formwork decking
- Roof and wall sheeting
- Lightweight structural sections
- Truss components
- Gutters and downpipes
- Fascias
- Custom flashings
- Insulating products
- Fasteners

REFERENCES

In preparing this document reference has been made to:

- Standards Australia Handbook - HB39 (Installation code for metal roof and wall cladding)
- Standards Australia Handbook - HB106 (Guidelines for the design of structures in snow areas)
- BlueScope Steel - Technical Bulletin TB-4 (Maintenance of Colorbond prepainted steel roofing)
- BlueScope Steel - Technical Bulletin TB-1 (Steel roofing and walling products - selection guide)

CONTACT US

Visit stramit.com.au or contact us using the details below.

REGION	LOCATION	CONTACT DETAILS	TECHNICAL ENQUIRIES
NSW & ACT	SYDNEY 33-83 Quarry Rd, Erskine Park NSW 2759	Ph 02 9834 0909 Fax 02 9834 0988	Ph 02 9834 0964
	CANBERRA 4 Bass St, Queanbeyan NSW 2620	Ph 02 6298 2500 Fax 02 6298 2533	
	COFFS HARBOUR 6 Mansbridge Dr, Coffs Harbour NSW 2450	Ph 02 6656 3800 Fax 02 6656 3808	
	NEWCASTLE 17 Nelson Rd, Cardiff NSW 2285	Ph 02 4041 3400 Fax 02 4041 3423	
	ORANGE 51 Leewood Dr, Orange NSW 2800	Ph 02 6360 9200 Fax 02 6360 9211	
VIC	MELBOURNE 3/1464 Ferntree Gully Rd, Knoxfield VIC 3180	Ph 03 9237 6300 Fax 03 9237 6399	Ph 03 9237 6353
	ALBURY 18 Ariel Dr, Albury NSW 2640	Ph 02 6092 3700 Fax 02 6092 3766	
	BENDIGO Lot 7-9 Ramsay Court, Kangaroo Flat VIC 3555	Ph 03 5448 6400 Fax 03 5447 9677	
TAS	HOBART 57 Crooked Billett Dr, Brighton TAS 7030	Ph 03 6262 8788 Fax 03 6262 8712	Ph 03 9237 6353
SA	ADELAIDE 11 Stock Rd, Cavan SA 5094	Ph 08 8219 2000 Fax 08 8219 2021	Ph 03 9237 6353
SOUTH QLD	BRISBANE 57-71 Platinum St, Crestmead QLD 4132	Ph 07 3803 9999 Fax 07 3803 1499	Ph 07 3803 9869
	MARYBOROUGH 10 Activity St, Maryborough QLD 4650	Ph 07 4123 9500 Fax 07 4123 9508	
	ROCKHAMPTON 41 Johnson St, Parkhurst QLD 4702	Ph 07 4921 5600 Fax 07 4921 5608	
NORTH QLD	CAIRNS 53 Vickers St, Edmonton QLD 4869	Ph 07 4034 6555 Fax 07 4034 6511	Ph 07 3803 9869
	TOWNSVILLE 402-408 Bayswater Rd, Garbutt QLD 4814	Ph 07 4412 3900 Fax 07 4412 3909	
WA	PERTH 605-615 Bickley Rd, Maddington WA 6109	Ph 08 9493 8800 Fax 08 9493 8899	Ph 07 3803 9869

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