



Spantech Construction System

The Spantech Construction System features a patented construction panel manufactured on-site with a mobile rollform machine.

The Spantech panel is available in two profiles: the 300 Series and larger 370 Series. Each profile is manufactured by a different mobile rollforming machine.

Each Profile is available as a straight panel or a curved panel with a constant radius. Straight panels are manufactured in continuous lengths through the central rollers of the rollforming machine. Curved panels require a second process; straight panels are put through the “curver” rollers which introduces tapered crimps into the sides and base of the panel. The depth of the crimps determines the radius.

Four or five curved panels are stacked on top of each other on the ground and engaged (clipped) together. An over-slung or underslung spreader bar is used to support the stack of panels while they are lifted by crane from the manufacturing area into the final position on the building.

Drawings referred to in this document are available by contacting enquiries@spantech.com.au.

Technical DATA	300 Series	370 Series
Access and Site Manufacturing		
<i>Refer drawing 6800-100.</i>		
As site manufacturing is central to the process, contact Spantech early in the design stage to ensure:		
<ul style="list-style-type: none"> - suitable access for the Spantech Rollform Machine - availability of a rollforming area adjacent to the proposed building which is large enough, reasonably level and free of obstructions - there is access for the required crane or cranes, EWP, and - the availability of Spantech’s resources to meet the proposed construction program. 		
Profile Dimensions		
	<i>Refer drawing 6800-03e</i>	<i>Refer drawing 6800-03d</i>
Panel width (at base of panel)	300mm	370mm
Nominal coverage	303mm	375mm
Height	109mm	155mm
Material		
Yield	G300 Steel 5052-H32 Aluminium	
Thickness	0.8mm or 1mm	1.2mm
Feed width	600mm	750mm
Steel coating	Zincform™ (Galvanised) Zincalume™ (AM100 or AM125) Colorbond™ (AM100 or AM125)	
Aluminium coating	Contact Spantech for project specific information	
Spans		
<i>Spans listed are maximum recommended unsupported spans, unless noted otherwise.</i>		
Curved panel: - Curved Roof - Cantilever Overhangs - Ground-to-Ground	30m	40m
	1.5m	2.5m
	30m	40m
Straight panel: - Gable or Skillion Roof - Cantilever Overhangs	7m	10m
	1.5m	2.5m
Walls	7m	10m
Spans in cyclone regions and exposed areas	Contact Spantech for project specific information	
Suspended formwork (straight or curved)	Refer drawings 6800-34 and 6800-34a. Contact Spantech for project specific information	
Curved panel with light weight structural truss	100m Contact Spantech for project specific information	

Technical DATA	300 Series	370 Series
Curved Panel Radius		
Suggested Minimum Radius	6m	10m
Suggested Maximum Radius	30m	40m
Nominal design radius of a curved roof	<p>The suggested radius of a curved roof is approximately equal to, or less than the unsupported span between edge beam supports.</p> <p><i>Note: Engineering may require the radius to be decreased or additional structural support provided, such as an increase in column size and/or footing size/depth. For curved spans under 30m, the stronger 370 series panel will provide a significantly larger radius than the 300 series panel.</i></p> <p>Contact Spantech for project specific information</p>	
Gable or Skillion Roof		
Minimum fall	1 degree	
Manufacturing Area		
Rollformer size	Open Type: 9m x 2.4m x 2.4m high Container type: 6m x 2.4m x 3m high	12m x 2.4m x 3m high
Straight panel only	<p>Length of rollformer plus the length of the straight panel in multiples of 3.6m</p> <p><i>Note: Allow reasonable access and working area around the rollformer and runout tables</i></p>	
Straight and curved panel	<p>Length of rollformer, plus the length of the straight panel in multiples of 3.6m, plus the arc length of the curved panel.</p> <p><i>Note: Allow reasonable working area around the rollformer and manufacturing area. Allow crane access to the rollformer, and between the manufacturing area and the building.</i></p>	
Connections		
Spantech panel to another Spantech panel	<p>Rollformed patented edge connection joined using the Spantech engaging tool. This joint normally requires no additional bending, no screws, bolts or rivets.</p> <p><i>Note: Subject to engineering requirements</i></p>	
Spantech panel to edge beam	2 x 8.8 Grade M16 galvanised bolts through the Spantech panel ribs and a 5mm cleat which is welded to the edge beam. Refer drawing 6800-27.	
Edge beam cleat position	Alternate between each 2 nd and 3 rd rib	Every 2 nd rib
Edge beam cleat position in cyclone areas	Every rib	
Spantech curved roof to Spantech end wall	<p>Minimum 2 x 14g Tek screws per/end wall panel.</p> <p>Refer drawings 6800-05, 6800-05a and 6800-89.</p>	
Spantech panel to concrete footing (e.g. Ground to Ground)	<p>Spantech panels are spot welded to a continuous horizontal angle supported by vertical stub angles in concrete piers. Reinforcing penetrates each Spantech panel. The angle and ends of panels are then encased in concrete strip footings.</p> <p><i>Refer drawing 6800-09</i></p> <p><i>Note: Specify Z600 galvanised coil steel for panels and protective bitumen coating where panel is in contact with concrete.</i></p>	
Spantech panel to batten or truss	<p>Cleat: 8.8 Grade M16 galvanised bolt through the panel ribs and a 5mm cleat fixed to the supporting member, or</p> <p>Ceiling Clip: The Spantech Ceiling Clip provides a concealed, penetration free fixing that allows expansion and contraction of long-run straight panels, particularly suited to gable or skillion roofs.</p>	
Spantech Ceiling Fixtures		
Maximum Point Loading	<p>Typically 1,000 Kg per/lineal metre (length of the roof)</p> <p><i>Note: Weight is subject to the span and radius of the roof, and distribution of the load. Excludes variable or moving loads, such as a moving tripper on a conveyor belt.</i></p> <p>Contact Spantech for project specific information</p>	
Ceiling Load	<p>± 15 Kg/m²</p> <p><i>Note: Weight is subject to the span and radius of the roof.</i></p> <p>Contact Spantech for project specific information</p>	
Spantech Ceiling Clip (fitted when panels are engaged)	<p>Maximum weight: 150 Kg. Refer drawings 6800-20, 6800-21 and 6800-22.</p> <p><i>Note: Subject to the type of load and the location of the clip, Spantech Ceiling Clips may need to be bolted.</i></p>	

Technical DATA	300 Series	370 Series
Spantech Ceiling Fixtures (continued)		
Inserted Ceiling Fixing Strap (retro fitted)	1mm or 1.2mm thick metal strap designed to fit Rondo furring channel. Refer drawing 6800-22.	
Inserted Locking Plate (may be retro fitted)	5mm thick metal strap designed to suit application.	
Flashings		
Barge Flashing	The barge flashing is designed to waterproof the joint between roof and endwalls. Refer drawings 6800-05 and 6800-05a. This flashing may also be specified to stiffen the first and last panel of an open shade structure where no mullions or other additional support is provided.	
Roof Vents	<i>Refer drawing 6800-08</i>	<i>Refer drawing 6800-08b</i>
Roof vents - single panel penetration	Maximum throat diameter: 250mm Refer Drawing 6800-08	Maximum throat diameter: 300mm Refer Drawing 6800-08b
Roof vents - dual panel penetration	Maximum throat diameter: 500mm	Maximum throat diameter: 650mm
Endwall vents	Fixed endwall vents can be made to any size up to 3,600mm wide or high. Vents can include internal or external insect screens, if required. Refer drawing 6800-91.	
Air-conditioning		
Air-conditioning	Air conditioning ducts can be supported directly from a Spantech curved roof. Roof or ceiling mounted air conditioning units may require additional structural support. Contact Spantech for project specific information.	
Services		
Conduits - when there is no ceiling specified	Exposed:	Conduits can be supported on the underside of Spantech panels using modified Spantech Ceiling Clips
	Concealed:	Option 1: Conduits can be concealed within structural steel (e.g. CHS columns and SHS edge beams) Option 2: External service duct - Conduits can be laid in the external pan of a selected Spantech panel and covered with a curved waterproof flashing. Ends are flashed to eliminate vermin but allow moisture to escape. The service duct is accessible from the roof of the building.
Ceilings and Insulation		
Curved ceiling - metal	Ceiling: Insulation: Support System: Drawings: Features:	Perforated Colorbond CustomOrb™ or Aluminium Anticon Heavy Duty with Black Facing (FBS-1 Glasswool) by Bradford. Spantech Ceiling Clip and Rondo Key-Lock System comprising Rondo #128 Furring Channel (black) and #138 Joiner. Refer to drawing 6800-83a and 6800-83c. Thermal and acoustically insulated. Sheets may be easily removed or replaced to add additional services. Aluminium may be used in harsh environments such as swimming pool enclosures. <i>Note: Furring channel should be at 600mm centres where indoor soccer and other high speed/high impact ball sports may be played.</i>
Curved ceiling - others	Ceiling: Insulation: Support System: Drawings:	Any type of ceiling material which can be sprung curved, such as plasterboard, mineral fibre board or timber, or a wide variety of ceiling systems, such those listed at www.ceilector.com.au by CSR. Any FBS-1 Glasswool, such as those supplied by Bradford, or as recommended by the manufacturer of the ceiling material or system. Spantech Ceiling Clip and either: - Rondo Key-Lock System (#128 furring channel (black) and #138 joiner), or - other suitable ceiling system <i>Refer to drawing 6800-83b.</i>
Suspended ceiling	Ceiling: Insulation: Support System:	Any proprietary suspended ceiling system. As recommended by the manufacturer of the suspended ceiling system. Spantech Ceiling Clip and either: - the Rondo KEY-LOCK® Concealed Suspended Ceiling System, or - the Rondo Duo® Exposed Grid Ceiling System, or - other suitable suspended ceiling system, such as those listed at www.ceilector.com.au by CSR.

Technical DATA	300 Series	370 Series
Ceilings and Insulation		
Blanket insulation	Ceiling: Nil Insulation: Any type of specified insulation, ideally with a protective coating. Support System: Adhesive fixed buttons. Drawing: Refer to drawing 6800-92.	
Insulation for non-habitable buildings (e.g. potato stores)	Polyurethane foam sprayed directly onto the internal surface of the Spantech panel	
Skylights <i>Refer drawing 6800-07b</i>		
Suggested total skylight area	2% of the roof area.	Between 1.5% and 2% of the roof area
Material	Typically Wonderglas GC by Ampelite, unless specified otherwise	
Cut-out size	3,300mm x 185mm (nominally 0.6m ²)	3,300mm x 260mm (nominally 1m ²)
Material size (includes lap)	3,600mm x 290mm	3,600mm x 350mm
Skylight placement	Avoid the first and last 15 panels, then 1 row of skylights in every 5 or 10 panels.	Avoid the first and last 15 panels, then 1 row of skylights in every 4 or 8 panels
	<p>Maintain at least 2m between cut outs in any one panel. Cut-outs to be a minimum of 2m away from the edge beam.</p> <p><i>Note: Also consider the location of lifting points, any roof ties, services, permanent roof access equipment and any other fixtures. Additional skylights may be required where endwalls and other obstructions are included.</i></p>	
Lighting		
High-bay	Industrial high-bay lighting may be supported from a Spantech Ceiling Clip or a 5mm galvanised steel cleat.	
Down lights	Flush fitting down lights may be fitted wherever required when a ceiling is installed.	
Semi-flush	Semi-flush fitting Colorbond shrouds are manufactured by Spantech. Designed in two parts to suit the specified lamp and angle of the ceiling, semi-flush fitting shrouds eliminate potential bird roosting areas on top of lighting fixtures, particularly important in open Shade Structures.	
Up-lights	<p>Any type of lamp may be fixed to any part of a column or edge beam.</p> <p><i>Note: Where CHS columns are specified, columns are fitted with cleats needed during the galvanising process. These are ideal for supporting large up-lights.</i></p>	
Externally mounted down lights (typically for grain storage buildings)	<p>Industrial light fittings may be installed externally with light directed through insulated penetrations to prevent heat transfer into the building. This also allows safe access to the lamp.</p> <p>Contact Spantech for project specific information.</p>	
Solar Panels		
Solar panel installation	<p>Clamp solar panel frames directly to a Spantech roof without penetrating the Spantech panel using standard Uni-Strut or Flexi-Strut components. The height of the ribs allows rainwater and generous airflow under the solar panels to avoid a build-up of debris and rust.</p> <p><i>Note: A curved roof allows panels to be easily installed at the optimum angle.</i></p>	
Gutters and Downpipes		
Spantech standard gutter	<p>Width: 250mm Effective depth: 150mm External height: 300mm Maximum length: 3,600mm</p> <p><i>Note: Spantech recommends the use of this gutter to minimise the number of downpipes and conceal panel ends. The gutter is also the fascia. Refer Drawing 6800-102</i></p>	
Spantech gutter bracket	<p>Concealed: The concealed gutter bracket is designed to support a Spantech Standard Gutter. Internal gutter brackets may reduce flow. <i>Refer drawing 6800-10.</i></p> <p>External brackets: Spantech can design and manufacture brackets to suit the Spantech Standard Gutter or any other proprietary gutter system.</p>	
Propriety gutters and brackets	<p>Spantech roofs can be fitted with most types of gutters. The Spantech system does not normally have a fascia, however where a fascia is required to support a proprietary gutter, one can be installed, or gutter brackets can be modified to suit the Spantech panel. Proprietary gutters may require an additional flashing at the top of the Spantech ribs.</p>	

Technical DATA	300 Series	370 Series
Downpipes	Any type of proprietary downpipe system	
Roof Access Systems		
Roof access system	Spantech roof access bracket secured with 8 rivets supplied by SafeMaster (NSW). Optional accessories include ladder brackets, PPE kit and PPE kit storage cupboards. <i>Note: Roof access systems are required where serviceable items are installed.</i>	
Sports Fixtures		
Basketball backboards	Suspended basketball backboards directly from the Spantech curved roof with the aid of a lightweight structural steel frame.	
Court dividing net	Support nets to divide indoor sports court directly from a curved Spantech roof. No additional structural support is required. A dividing net can be mechanised if required.	
Doors		
		<i>Refer drawing 6800-99</i>
Personnel door through Spantech wall	Personnel doors can be fitted directly into Spantech walls with minimal structural support.	
Notes		
<ul style="list-style-type: none"> - Ground-to-Ground spans may also be subject to height limits. - Achieve larger spans by including additional structural support. Contact Spantech for further information. - All measurements are a guide only and are subject to Engineering design. - This information is subject to change without notice. 		
Further Information		
<ul style="list-style-type: none"> - For further information contact Spantech: - Phone +61 (0) 7 5593 4449 - Email enquiries@spantech.com.au - Web www.spantech.com.au. 		