SPEED DECK ULTRA®
CONCEALED FIXED DECKING
Product Technical Manual

Now available Stramit FarLap®
Roof Lap Joint System
FEATURES
• Wide Cover – fewer sheets and quicker installation.
• Deep Ribs – stronger and stiffer with better watercarrying capacity; roof slopes as low as 1°.
• Full Length Clips – to locate ribs and compress insulation.
• Four Fixing Points Per Clip – with centralised fastening for unsurpassed strength.
• Hexagon Head Screws – bigger, stronger and easier to install, with less wastage.
• Outsanding Wind Load Resistance – improved security with thinner steel sections.
• Spring Curving – data for arched and curved roofs.
• Automatic Bird Proofing – built in accessory with no need for extra components.
• Compatible lap joint system – allows in-plane long run roofs.
• Provides solution for limited access sites.

AUSTRALIAN DESIGN AWARD
Speed Deck Ultra decking, winner of a 1995 Australian Design Award for “using the properties of high tensile steel to their best advantage through good design practices”.

APPLICATIONS
The visual appeal, strength, wide cover, light weight and weather resistance of Speed Deck Ultra® decking and Farlap® roof lap joint system make it perfect for all commercial roofing applications. Its excellent strength and ease of assembly allow for long, economical spans. The large water-carrying capacity and weather-tightness permit very low roof pitches, leading to economies in the building structure.

Speed Deck Ultra® decking may also be used for domestic applications. Please note, one consequence of the clip/sheeting connection in a concealed fixed system is the friction between the deck and the clip. All steel roofs experience movement due to thermal expansion and contraction when there are temperature differences and this longitudinal movement causes the sheet to rub against the clips, sometimes causing noise.

This movement is not constant, it occurs in stages, and each movement can cause a sound as the sheeting moves against the clip. Where the clips are spaced far apart such as 1500mm or more, some of this movement is taken by the bowing of the sheeting rather than the slip on the clips, thereby reducing the noise impact.

In residential situations, however, the clips are often spaced much more closely, which increases the propensity for friction and hence noise.

The use of an insulation blanket can alleviate the impact of some of the noise.

IMPORTANT NOTICE AND DISCLAIMER
The information contained within this brochure is for general use and information only. Before application in a particular situation, careful consideration should be given to the suitability of products and application for the application proposed. While Stramit endeavors to ensure that all information is accurate, we cannot accept any liability for incorrect information and are therefore not responsible for the use of the information provided in this brochure.

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

MATERIALS
Speed Deck Ultra® decking is manufactured from high-tensile G550 colour coated steel, aluminium-zinc-magnesium 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 2540 conform to AS1397.

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

OVERLAPPING ROOF SHEETS
For long run roofs that exceed the maximum recommended sheet lengths, and for awkward sites where truck or crane access is limited, the Farlap® roof lap joint system is available. This enables overlapping sheets to be simply and reliably attached without the need for a traditional step joint. The roof support structure can be designed and fixed in a single plane. Refer to Stramit Farlap® Roof Lap Joint System Product Technical Supplement for full details of the product.

ADVERSE CONDITIONS
Speed Deck Ultra® decking will give excellent durability in almost all locations. With all of its fastenings protected beneath the decking, Speed Deck Ultra® 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.

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

The suitability and exposure tables above are current at the time of publication and are guidelines only; conditions will vary site to site. Please check the Bluescope Technical Bulletins at www.bluescopesteel.com for further information and guidance on selection, maintenance and durability. If in doubt, contact your nearest Stramit office for advice.

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

The roofing/walling shall be 0.42 (or 0.48) mm BMT steel sheet to Australian Standard AS1397, with a minimum yield stress of 550MPa (Grade G550) and an AM100/AM125 coating with an oven-baked paint film of selected colour, or a plain AM125/AZ150 coating. The sheeting shall be fastened to the purins/girts in accordance with the manufacturer’s recommendations using patented long flexible clips supplied. Clips shall be fastened to purins/girts with screws supplied in accordance with Australian Standard AS5566. Class 3, and attached under every 150mm. Sheeting 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 provided 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 roof manufacturer. All debris (nails, screws, cuttings, flings etc.) shall be cleaned off daily. Where the Stramit Farlap® roof lap joint system is to be incorporated add the following to the specification above:

All roof lap joints shall be constructed using the Stramit Farlap® roof lap joint system and Stramit Sky Lap® joint system for securing the lap. Refer to the Stramit Farlap® Roof Lap Joint System Product Technical Supplement for detailed information.

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

FM Global approved when installed in accordance with Approval Standard FM 4471 (RoofNav Specification)
**DESIGN**

**SPANS**

The spans shown below take account of normal foot traffic and wind resistance including local pressure zone effects. Pressures are based on AS4040 or AS/NZS1170.

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 and unaffected by land topography.

<table>
<thead>
<tr>
<th>SPEED DECK ULTRA® DECKING - SHEETING MASS (kg/m² of roof area)</th>
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<tr>
<td>ZINC-ALUMINIUM</td>
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<tr>
<td>COLORBOND® GALVANISED</td>
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**FOOT TRAFFIC**

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

- **High Maintenance** – for applications with repeated moderate maintenance foot traffic only on the designated footpath.
- **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.

**PRESSURES**

Internal spans must have both end spans 20% shorter. TC - Terrain category, FS, PS, NS – Full, partial and no shielding. Internal pressure coefficient N3 or Region B (TC2.5, PS) and Region A (TC2, NS) WIND CLASSIFICATION

- **N3** or Region B (TC2.5, PS) and Region A (TC2, NS) WIND CLASSIFICATION
  - 0.42: 1.75 1.25 1.70 1700 2100 (1750)
  - 1.07: 1.81 1700 1200 2100 (1750)
  - 150: 400

- **N2 or Region B (TC2, PS) or Region A (TC2, PS) WIND CLASSIFICATION**
  - 0.42: 1.05 1.75 1700 2100 (1750)
  - 1.03: 1.53 1700 2300 2100 (2500)
  - 200: 500

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

**WATER CARRYING**

Speed Deck Ultra® decking has excellent resistance to 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 of a roof projection that converges to another pan. The table below gives slopes for 100 year return period rainfall intensity.

**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.

**FOOT PATHS**

Foot paths are necessary to allow for design of structures in snow areas. Particular attention is drawn to maintaining an adequate roof path. This can include the roof length beneath the ridge capping. Speed Deck Ultra® decking can be spring curved, concave and convex, including curved ridges, provided it is within the recommended limits below.

**DESIGNING FOR SNOW**

Concealed fixed decking such as Speed Deck Ultra® 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 Corrugated and Other FarLap® roof lap joint system.

**MAXIMUM ROOF SLOPE (degrees)**

Based on AS1562.1

For more information on water carrying performance of Speed Deck Ultra® decking and other Stramit® roofing profiles refer to Stramit’s Roof Slope Guide. Maximum water protection is also ensured by the absence of fastener penetrations when using Speed Deck Ultra® decking.

**FOOTPATHS**

Foot path limits for Speed Deck Ultra® decking have not been tabulated, but can be assumed to equal the outward capacities shown.

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<tr>
<th>SPEED DECK ULTRA® DECKING - MAXIMUM SHEET LENGTH (m)</th>
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<td>roof colour</td>
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*Transport restrictions can apply – check with your local Stramit office.

**MAXIMUM ROOF SLOPE (degrees)**

Based on AS1562.1

For more information on water carrying performance of Speed Deck Ultra® decking and other Stramit® roofing profiles refer to Stramit’s Roof Slope Guide. Maximum water protection is also ensured by the absence of fastener penetrations when using Speed Deck Ultra® decking.
**HANDLING/STORAGE**

Speed Deck Ultra® 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 (15mm bmt or greater) - 12 x 30mm hex-head self-drilling & threading screws (available pre-loaded into clips in some locations)
- For timber (FTI or greater) - 12 x 50mm hex-head type 17 self-drilling screws

**ACCESSORIES**

Use only the correct, authentic, Stramit accessories:

- Speed Deck Ultra® deck clip – supplied in easy to handle boxes of 40 clips
- Speed Deck Ultra® deck end cap – used with silicone sealant for roof penetrations
- FarLap® roof lap joint system units – supplied in boxes of 20 units, or in a 7m roll of 10 pre-joined units
- SkyLap® joint system for use with translucent sheeting

**INSTALLATION**

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

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. Screw the clips to the purlins in the same order as the direction of laying.

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, always in the order of the direction of laying. Note – Do not use undue force; the deck will easily accommodate clip entry.

3) Hinge next clip about trailing edge of the first sheet, allowing it to fall to the purlin. Ensure correct fitting to the deck edge and that it is sitting on the extended tail of the preceding clip. Align fixing holes together then 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 purin 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 Ultra® deck clip turn up/down tool.

7) Secure leading and trailing edge of the roof with a full or cut-back clip, and sealed fasteners through the roof tray, at every purlin. Cover these with side flashing. 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 finishes with Stramit supplied touch-up paint.

Each clip box has an illustration of the basic clip fixing technique. A more detailed ‘Installation Procedure’ leaflet (with clear illustrations) is available to assist fixers on site. Ask for a copy to be sent with your order.

**ACCESSORIES**

Installation details for the FarLap® roof lap joint system and SkyLap® joint system for translucent sheeting are provided in separate supplements included in each box of units.

**MAINTENANCE**

**CUTTING**

Speed Deck Ultra® 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.

**RELATED PRODUCTS**

Stramit offers a wide range of building products, including:

- Purlin & girt
- 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 codes for metal roof and wall cladding)
- Standards Australia Handbook – HB106 (Guidelines for the design of structures in snow areas)
- BlueScope Steel – Technical Bulletin TB-8 (Maintenance of Colorbond prepainted steel roofing)
- BlueScope Steel – Technical Bulletin TB-1 (Steel roofing and walling products – selection guide)

**ADDITIONAL INFORMATION**
## CONTACT US

Visit [stramit.com.au](http://stramit.com.au) or contact us using the details below.

<table>
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<th>REGION</th>
<th>LOCATION</th>
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