

0423P STRAMIT ROOFING – PROFILED SHEET METAL

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to the provision of roof coverings of STRAMIT profiled sheet metal and roof plumbing. It also covers skylights, roof hatches, roof windows, roof ventilators and roof plant access.

Background

The Australian profiled sheet steel industry is organised as follows:

- **BlueScope** manufactures Colorbond® prepainted steel and Zinalume® steel coils.
- **STRAMIT** use steel coils and proprietary machinery to shape steel into different profiles and cut sheets to length.
- **Installers** take off material quantities, order and install often as subcontractors to the contractor.

How to use this worksection

This worksection *Template* must be customised for each project. See A guide to NATSPEC worksections (www.natspec.com.au) for information on *Template* structure, word styles, and completing a worksection.

Related material located elsewhere in NATSPEC

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0193 Building access safety systems.*
- *0343 Tensioned membrane structures* for suspended fabric roofing.
- *0411 Waterproofing – external and tanking* for membrane roofs.
- *0461 Glazing* for glass roofing and skylights.
- *0471 Thermal insulation and pliable membranes* for thermal insulation, thermal break strips and vapour permeable membranes.

Each of the following worksections contains a single roofing system and may be used where appropriate in addition to the worksection:

- *0424 Roofing – seamed sheet metal.*
- *0425 Roofing – shingles and shakes.*
- *0426 Roofing – slate.*
- *0427 Roofing – tiles.*
- *0428 Roofing - insulated panel systems.*
- *0429 Roofing - glazed.*

Related branded worksections include:

- *0311p STRAMIT Condeck in concrete formwork.*
- *0341p STRAMIT purlins and girts in structural steelwork.*
- *0431p STRAMIT in cladding - combined.*

Material not provided by STRAMIT

This branded worksection *Template* includes generic material which may not be provided by the Product Partner, including glazed roofing, plastic sheet roofing, skylights, roof hatches, roof windows, and roof access systems.

Documenting this and related work

You may document this and related work as follows:

- Locate the extent of roofing types, accessories, and finishes on drawings to your office documentation policy.
- Show on the drawings the arrangement of the rainwater plumbing system, including the type and size of the main components (gutters, downpipes, sumps, rainheads, etc.) and the size and spacing of supports and fixings. In high wind areas, consider the degree of exposure of gutters and downpipes and the need to provide additional fixings.
- If documenting stormwater disposal, rainwater tank and related products, use *0802 Hydraulic design and install*.
- If documenting electric fan powered roof ventilators, document the necessary electrical connection in *0902 Electrical design and install*.

- If required, state the minimum thermal resistance (R-Value) (m².K/W). See NATSPEC TECHnote DES 031 for information on specifying R-Values.
- Check lead time for imported selections and consider adding a requirement, in **SUBMISSIONS**, for the builder to verify availability.
- Document bushfire protection to conform AS 3959 and the NCC. See NATSPEC TECHnote DES 018 for information on bushfire protection.
- For guidelines on the design of roofs in snow areas, see AS/NZS 1170.3 and SA HB 106.
- For information on air moisture and condensation, see NATSPEC TECHnote DES 004.

The *Normal* style text of this worksection may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

Search acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service, for notes on the following:

- Birds and buildings.
- Green roofs.
- Guarantees and warranties.
- Site planning and design for bushfire.

Specifying ESD

The following may be specified by retaining default text:

- Skylights, roof windows.

The following may be specified using included options:

- Recycled material content.
- Rainwater tanks. See NATSPEC TECHnote DES 011 on rainwater harvesting.

The following may be specified by including additional text:

- High performance roofing systems to extend building service life.
- Recycled plastic roofing materials.

Refer to NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

We're one of Australia's leading manufacturers and suppliers of roll formed steel building products – and for good reason. For everything steel roofing, rainwater or structural, you can count on us. With dedicated support from our technical services team, we work with clients from project specification stages through to delivery and installation. With our national network, the backing of Fletcher Building, our state-of-the-art R&D facility and rigorous product testing, you can kick off your next project with confidence. When you work with Stramit, you can consider the job done.

1.1 RESPONSIBILITIES

General

Requirement: Provide a STRAMIT profiled sheet metal roofing system and associated work, as documented.

Documented is defined in 0171 General requirements as meaning contained in the contract documents.

Ambient climatic conditions

Design rainfall intensity (mm/h) to AS/NZS 3500.3: [complete/delete]

See AS/NZS 3500.3 Appendix D for selected place references or the Hydrometeorological Advisory Services of the Bureau of Meteorology (HAS) at www.bom.gov.au for rainfall data. Contact Stramit for guidance on roof slopes and rainfall intensity.

The NCC cites AS/NZS 3500.3:2018.

Corrosion resistance

Material: To the manufacturer's recommendations for distance from marine influence.

Distance from marine influence: [complete/delete]

The distance from marine influence can be used as a guide to determine the finish and grade of steel required, however other factors may also need consideration. For information on determining corrosivity categories in relation to environmental influences, see AS 2312.1 Table 2.1, AS 4312 Table 2.1 and Table 4.1. Refer to **CORROSION RESISTANCE, Atmospheric corrosivity category** in 0171 General requirements, for the project corrosivity categories to AS 4312. Refer also to BlueScope Technical bulletins BlueScope TB-01A and BlueScope TB-01B which discuss the selection of steel roofing and walling products, and the correlation of distance to marine influence to the corrosion categories defined in AS 4312.

Roof access

Type: [complete/delete]

e.g. Normal roof maintenance, Access to plant rooms (if by restricted paths show on the drawings).

1.2 COMPANY CONTACTS**Stramit technical contacts**Website: www.stramit.com.au/resources/technical-services .**1.3 CROSS REFERENCES****General**

Requirement: Conform to the following:

- 0171 General requirements.

0171 General requirements contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. 0171 General requirements references the 018 Common requirements subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

1.4 MANUFACTURER'S DOCUMENTS**Technical manuals**Website: www.stramit.com.au/products/roofing-and-wall-cladding**1.5 TOLERANCES****Sheet metal roofing**

Supporting members: To AS 1562.1 clause 4.2.3.

1.6 SUBMISSIONSEdit the **SUBMISSIONS** clause to suit project requirements.**Operation and maintenance manuals**

On completion: Submit a manual of recommendations from the roofing manufacturer or supplier for the maintenance of the roofing system including, frequency of inspection and recommended methods of access, inspection, cleaning, repair and replacement.

Products and materials

Type tests: As appropriate for the project, submit evidence of conformity to the following:

- Metal roofing generally: Roof sheeting and fastenings to AS 1562.1 clause 5.4 for resistance to concentrated load and to AS 1562.1 clause 5.5 for resistance to wind pressure.
- Metal roofing in AS/NZS 1170.2 cyclonic regions: Roof sheeting and fastenings to AS 1562.1 clause 5.6.

The NCC cites AS/NZS 1170.2:2011.

Type tests are carried out off-site. However, submission of evidence of a successful type test may be called up here for requirements specified in SELECTIONS or PRODUCTS, when there are no SELECTIONS.

Samples

Approved samples which define acceptable limits of colour and texture variations are retained on site. If particular or additional samples are required, e.g. samples for testing, list them here.

Requirement: Submit samples of the following:

- Custom profiled flashings and cappings.
- Sheet metal finishes showing the range of variation available.
- Sealants.
- Trims and accessories with a colour finish.

Shop drawingsShop drawings are necessary if some or all of the system is to be designed by the contractor or a specialist subcontractor to meet the performance criteria specified. If this is not the case, delete **Shop drawings**.**General:** Submit shop drawings to a scale that best describes the detail, showing the following:

- [complete/delete]

e.g. Methods of fixing, required end and side laps, acoustic insulation, suppression of impact noise, provisions for thermal movement, birdproofing, flashing, ridge cappings, roof water disposal, thermal insulation, vapour barrier, control joint treatment, isolation of incompatible metals, access for maintenance, provision for traffic.

Tests

Detail the tests required in PRODUCTS or EXECUTION, as appropriate, and list the submissions required here.

Site tests: Submit results as follows:

- Internal downpipe hydrostatic testing: [complete/delete]

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties.**

Describe the requirements of warranties in PRODUCTS or EXECUTION, as appropriate, and list the submissions required here.

Roofing materials: Submit the manufacturer's product warranties.

Warranties for steel roofing products are provided by BlueScope.

1.7 INSPECTION

Notice

Inspection: Give notice so that inspection may be made of the following:

- Roof supports before covering up or concealing.
- The parts of the roofing, sarking, vapour barrier, insulation and roof plumbing installation before covering up or concealing.

Roof supports typically include structural steel and roof purlins which require sign off from a professional structural engineer before cladding of the roof structure.

Amend to suit the project, adding critical stage inspections required.

Hold points, if required, should be inserted here.

2 PRODUCTS

2.1 GENERAL

Product substitution

Other products: Conform to **SUBSTITUTIONS** in *0171 General requirements*.

SUBSTITUTIONS in *0171 General requirements* sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

Storage and handling

Requirement: Store and handle materials to the manufacturer's recommendations and the following:

- Protect materials including edges and surfaces from damage.
- Keep dry and unexposed to weather.
- Do not drag sheets or panels across each other or over other materials.
- Sheeting: Stack flat and off the ground on at least 3 evenly placed bearers.
- Store metal materials away from uncured concrete and masonry on a level base.
- Do not store metal materials in contact with other materials which may cause staining, denting or other surface damage.
- Use gloves when handling precoated metal roofing material.

Stramit recommends that roofing sheets should be laid flat or on girts spaced no more than 600 mm apart, to prevent warping and bowing. If stored outside cover with waterproof tarps or plastic sheeting to prevent water pooling.

Product identification

General: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.

- Product reference code and batch number.
- Date of manufacture.

Edit the list to suit the project or delete if not required.

Safety mesh

Standard: To AS/NZS 4389.

Coordinate with 0471 Thermal insulation and pliable membranes. Do not call up welded safety mesh in more than one spot.

2.2 STRAMIT SHEET METAL ROOFING

See SA HB 39 Section 2 and SA HB 39 Section 7 for general advice on material selection for steel sheet roofing.

Standards

Design and materials: To AS 1562.1.

STRAMIT roofing

Requirement: STRAMIT steel sheet roofing, as documented.

Selection: To the **STRAMIT profiled sheet metal roofing schedule**.

Refer to Stramit literature for information on national product availability.

Fasteners

General: Type, size, corrosion resistance class and spacing to the manufacturer's recommendations.

Finish for exposed fasteners on coloured cladding: Prefinish exposed fasteners with an oven baked polymer coating to match the cladding material.

Fastenings to timber battens: Fastenings long enough to penetrate the thickness of the batten without piercing the underside.

Refer to STRAMIT roofing and wall cladding installation and application and BlueScope TB-16 guide on selecting fasteners for roofing and walling.

Profiled fillers

Type: Purpose-made closed cell polyethylene foam profiled to match the roofing profile.

Selection: To the **STRAMIT profiled sheet metal roofing schedule**.

Refer to Stramit technical literature for types of roof lap joint systems to match roof profile.

Location: Provide profiled fillers under flashings to the following:

- Ridges.
- Eaves.
- Lapped joints in roof sheeting.

Add locations as required. Refer to STRAMIT roofing and wall cladding installation and application

Insulation spacers

Description: Proprietary spacer system to prevent excessive compression of insulation between roof sheeting and framing.

Size spacers to suit the required insulation thickness documented and/or create an air space as required.

2.3 ROOF PLUMBING

General

See SA HB 39 Section 5 for the manufacture and fitting of internal and external metal gutters, downpipes, sumps and rainheads, AS/NZS 3500.3 Section 3 for method of sizing gutters and downpipes and AS/NZS 3500.3 clause 4.9 for support systems of roof drainage systems. Show particular requirements, if any, on the drawings.

See NATSPEC TECHnote DES 011 for more information on rainwater harvesting.

Description: Flashings, cappings, gutters, rainheads, outlets, downpipes and accessories necessary to complete the roofing system.

Flashing and capping: Notched to match profile of roof sheeting.

Matching fascia/arge capping: If the selected eaves gutter is a proprietary high front pattern forming part of a combined system of gutter, fascia and barge, provide matching proprietary fascias and barge cappings to roof verges and edges.

Select in the **STRAMIT roof plumbing schedule** and **STRAMIT flashing and capping schedule**.

Standards

Roof drainage: To AS/NZS 3500.3.

The NCC cites AS/NZS 3500.3:2018.

Metal rainwater goods: To AS/NZS 2179.1.

Flashings and cappings: To AS/NZS 2904.

STRAMIT roof plumbing

Requirement: STRAMIT steel roof plumbing, including gutters, capping, fascias and downpipes, as documented.

Selection: To the **STRAMIT roof plumbing schedule** and **STRAMIT flashing and capping schedule**.

See SA HB 39 Section 8 for recommended practice for metal flashings and cappings.

2.4 SKYLIGHTS**General**

Standard: To AS 4285.

Description: A proprietary skylight system including framing, fixing, trim, seals, accessories and flashings.

2.5 ROOF HATCHES**General**

Description: A proprietary roof hatch system including framing, fixing, trim, seals, accessories and flashings.

2.6 ROOF WINDOWS**General**

Standard: To AS 4285.

Description: A proprietary window system designed for non-vertical installation in roofs pitched between 15° and 85°, consisting of the following:

- Timber frame and sash, shop clear primed or prefinished.
- External anodised aluminium protective profiles.
- Sealed double glazing.
- Horizontally pivoted sash, 180° reversible, on patent friction hinges.
- Opening and locking by patent control bar.
- Ventilation flap.

2.7 ROOF VENTILATORS**General**

Document any particular requirements, material, type (e.g. static, wind driven, electric fan powered), size, etc. if not shown on the drawings. For roof mounted heat exhaust vents, see AS 2427. For design of smoke/heat venting systems, see AS 2665.

Description: A roof vent including framing, fixing, trim, seals, accessories and flashings.

Selection: To the **Roof ventilator schedule**.

Refer to Stramit literature for information on roof vents, design and availability.

2.8 ROOF ACCESS**Walkways**

Description: A proprietary roof walkway system including fixings.

3 EXECUTION**3.1 INSTALLATION****Protection**

General: Keep the roofing and rainwater system free of debris and loose material during construction.

Thermal movement

Requirement: Allow for thermal movement in the roof installation and the structure, including movement in joints and fastenings.

Metal separation

The designer should make sure of compatibility or detail separation.

See AS 1562.1 Table 3.2 for guidance on the compatibility of metals. See also SA HB 39 Section 2 on material selection. It is primarily a design responsibility to make sure that incompatible metals are not documented or shown to be in contact. Preferably show the separation method on the drawings.

Corrosion can result from water run-off between incompatible surfaces. See AS 1562.1 clause 3.7 and AS 1562.1 Table 3.3. There are two conditions to be avoided:

- Run-off from copper and copper alloys onto aluminium, zinc, galvanized, or aluminium/zinc-coated surfaces.
- Run-off from inert catchment surfaces such as glazed terracotta, prepainted steel, aluminium and aluminium/zinc onto galvanized surfaces.

In marine or high humidity environments green hardwood should also be separated from aluminium and coated steel.

Typical methods for metal separation include:

- Applying an anti-corrosion low moisture transmission coating such as zinc or barium chromate primer or aluminium pigmented bituminous paint to contact surfaces.
- Inserting a separation layer such as polyethylene film or adhesive tape, or bituminous felt.

Requirement: Prevent direct contact between incompatible metals, and between green hardwood or chemically treated timber and aluminium or coated steel, by either of the following methods:

- Applying an anti-corrosion, low moisture transmission coating to contact surfaces.
- Inserting a separation layer.

3.2 STRAMIT SHEET METAL ROOFING**Roof sheet installation**

Standard: To AS 1562.1.

STRAMIT steel roofing: To the manufacturer's recommendations.

Refer to STRAMIT roofing and wall cladding installation and application.

Set out point: [complete/delete]

Note the elevation that will allow laying to proceed in a direction from the leeward to the windward side of the prevailing wind.

Fixing: **PROPRIETARY ITEMS** in 0171 *General requirements* requires all products to be fixed to the manufacturer's recommendations.

Fastener type, size, corrosion resistance class, and spacing: To the manufacturer's recommendations.

For clarity, you may repeat the requirement here and include this *Optional* style text by changing to *Normal* style text.

Swarf: Remove swarf and other debris as soon as it is deposited.

Accessories: Provide accessories with the same finish as roofing sheets to complete the roofing installation.

Expansion joints: [complete/delete]

Provide expansion joints every 35 m in sheet length for roofs with concealed fixings and 24 m in sheet length for roofs with exposed fixings.

Pan type sheets

Removal: Install sheets so that individual sheets can be removed without damage.

Curved corrugated sheet

General: Form by rolling from material recommended for curving or bullnosing. Minimise crimping or creasing across the face of the sheet. Trim off crimped or creased edges and ends.

Ridges and eaves

Sheet ends: Treat as follows:

- Project sheets 50 mm into gutters.
- Close off ribs at bottom of sheets using mechanical means or with purpose-made fillers or end caps.
- Turn pans of sheets up at tops and down into gutters by mechanical means.
- Pre-cut notched eaves flashing and birdproofing if required.

- Close off ridges with purpose-made ridge fillers of closed cell polyethylene foam.

Ridge and barge

Capping: Finish off along ridge and verge lines with purpose-made ridge capping or barge rolls.

Sprung curved ridge

General: Lay the roofing sheets in single lengths from eaves to eaves by naturally curving the sheets over the ridge.

Ridge: Seal side laps at the ridge and extend the sealant to the point where the roof pitch equals the recommended pitch of the roofing profile.

This is possible only with certain sheeting profiles and roof slopes. Consult the manufacturer about recommended purlin spacings at the ridge to achieve the required curvature. Show the purlin locations on the drawings.

End laps

General: If end laps are unavoidable, and the sheet profile is not suitable for interlocking or contact end laps, construct a stepped type lap.

Length of lap (mm): [complete/delete]

Document the laps required, if applicable. Consult with STRAMIT on sheet length limits for various profiles and colours and lap joint details.

3.3 ROOF PLUMBING

Jointing sheet metal rainwater goods

See AS/NZS 3500.3 clause 2.7 for information on joint materials and products.

Butt joints: Make joints over a backing strip of the same material.

Soldered joints: Do not solder aluminium or aluminium/zinc-coated steel.

Sealing: Seal fasteners and mechanically fastened joints. Fill the holes of blind rivets with silicone sealant.

Jointing system: [complete/delete]

e.g. Blind rivet and seal as follows:

- Prepainted stainless: Stainless steel blind rivets with stainless steel mandrels.
- Prepainted or zinc-aluminium alloy coated steel: Aluminium blind rivets.

Flashings

Installation: Flash roof junctions, upstands, abutments and projections through the roof. Preform to required shapes if possible. Notch, scribe, flute or dress down as necessary to follow the profile of adjacent surfaces. Mitre angles and lap joints 150 mm in running lengths. Provide matching expansion joints at 6 m maximum intervals.

6 m corresponds to the manufacturing length. Movement at these joints would be less than 1 mm so all may not need to be fully-fledged expansion joints.

Upstands: Flash projections above or through the roof with two part flashings, consisting of a base flashing and a cover flashing, with at least 100 mm vertical overlap. Provide for independent movement between the roof and the projection.

Large penetrations in low pitch roofs: Extend the base flashing over the roofing ribs to the ridge to prevent ponding behind the penetrating element.

This situation often occurs with mechanical plant. Consider documenting it on the drawings.

Wall abutments: Where a roof abuts a wall, provide over flashing as follows:

- In masonry walls, planked cladding or concrete: Step in courses to the roof slope. Interleave with damp proof course, if any.
- Raking in masonry: Build into the full width of the outer leaf. Turn up within cavity, slope inward across the cavity and fix to or build into the inner leaf at least 75 mm above the roofing line.
- Raking in concrete: Turn 25 mm into joints or grooves, wedge at 200 mm centres with compatible material and point up.

Fixing to pipes: Solder or seal with neutral cured silicone rubber and secure with either of the following:

- Clamping ring.
- Proprietary flexible clamping shoe with attached metal surround flashing.

Gutters

Document the material, profile and size on the drawings or in a schedule.

Gutter and sump support: Provide framing and lining to support valley gutters, box gutters and sumps. Line the whole area under the gutters and sumps.

Support: [complete/delete]

e.g. Proprietary metallic-coated adjustable strap and channel system.

Lining: [complete/delete]

e.g. Square corrugated profiled metal roof sheeting.

Box gutter: Prefabricate box gutters to the required section and shape as follows:

- Form stop ends, downpipe nozzles, bends and returns.
- Dress downpipe nozzles into outlets.
- Hail guards: Install grating over the whole of the box gutter, over all box gutter sumps and over the edges of roofing sheeting entering box gutters.
- Overflows: Provide overflows to prevent back-flooding. Size to pass 100% of the design rainfall. Discharge overflows in visible locations and so water does not enter the building or cause damage to the building.
- Sumps: Minimum 150 mm deep and the full width of the box gutter.

This is a typical minimum size. Coordinate with hydraulic design.

Valley gutters: Profile to suit the valley boarding. Turn back both edges 180 x 6 mm radius. Nail or screw to the valley boarding at the top end to prevent the gutter creeping downwards.

Expansion joints in guttering longer than 30 m: Provide as follows:

- Type: [complete/delete]

e.g. As detailed or proprietary elastic expanding adhesive fixed type.

Gratings: Install removable gratings over rainheads and sumps.

Leaf guard location: All gutter outlets.

External downpipes

Document the material, profile and size on the drawings or in a schedule.

General: Prefabricate downpipes to the required section and shape where possible. Connect heads to gutter outlets and, if applicable, connect feet to rainwater drains.

Access cover: Provide a removable watertight access cover at the foot of each downpipe stack.

Downpipe support: Provide supports and fixings for downpipes.

Internal downpipes

Jointing method: [complete/delete]

e.g. Sealant joint or Bolted gland joint to AS 1631 (ductile iron), Screwed fittings to AS 1589 (copper), Solvent cement jointing (PVC-U), etc.

Access: Provide access openings as follows:

- At each junction and bend.
- At the foot of each stack.
- At every second floor level.

Modify locations to suit the project.

Type of access opening: [complete/delete]

e.g. Cast iron inspection openings to AS 1631 (or AS/NZS 1260 for PVC-U, AS 1589 for copper).

Acoustic insulation: Mineral fibre pipe insulation 50 mm thick, spirally bound on with 1.5 mm wire at 150 mm pitch.

Delete if not required.

Building in: If pipes are built into masonry or concrete, spiral wrap the pipe (and insulation, if any) with building paper.

Rainwater disposal

System: [complete/delete]

If not shown on the drawings, document method of disposal. Alternatives include Connection to stormwater drains, Discharge to rainwater tanks or Discharge to soakage pits.

3.4 SKYLIGHTS

Installation

Standard: To AS 4285.

Fixing: [complete/delete]

Specify and detail to the recommendations of the skylight manufacturer.

3.5 ROOF HATCHES

Installation

Fixing: [complete/delete]

Specify and detail to the recommendations of the roof hatch manufacturer.

3.6 ROOF WINDOWS

Installation

Standard: To AS 4285.

Fixing: [complete/delete]

Specify and detail to the recommendations of the roof window manufacturer.

3.7 ROOF VENTILATORS

Roof ventilators

Fixing: [complete/delete]

Specify and detail to the recommendations of the roof ventilator manufacturer.

3.8 ROOF ACCESS

Walkway

Installation: [complete/delete]

For ladders, platforms and balustrades, cross reference the appropriate worksection, e.g. 0552 Metalwork – fabricated and 0341 Structural steelwork.

3.9 TESTING

0171 General requirements defines different tests in **INTERPRETATION**, **Definitions** and calls for an inspection and testing plan in **TESTING - GENERALLY**, **Inspection and testing plan**.

Site tests

Internal downpipes: Test each stack hydrostatically in stages, each test to run over two storeys high for two hours. Remedy defects and retest if necessary.

3.10 COMPLETION

Reinstatement

Extent: Repair or replace damage to the roofing and rainwater system. If the work cannot be repaired satisfactorily, replace the whole area affected.

Damage to prepainted finish: Replace panels with scratches in the prepainted finish greater than 2 mm in width visible from the ground.

Contact Stramit for further details on reinstatement methods of scratched profiled steel roofing.

Bluescope does not recommend the use of touch-up paint to repair damage or scratches to the painted surface of COLORBOND® or ZINCALUME® steel. See BlueScope TB-02.

Fasteners: Make sure weathertight and external panel facings are not distorted.

Cleaning

Roofing and rainwater drainage system: Remove debris, metal swarf, solder, sealants and unused materials.

Exposed metal surfaces: Clean surfaces of substances that interfere with uniform weathering or oxidation.

Roof plumbing: Clean out spoutings, gutters and rainwater pipes after completion of roof installation.

Warranties

Requirement: Provide warranties for materials and workmanship in the form of interlocking warranties as follows:

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the supplier/manufacturer.

Use only if warranties extending beyond the defects liability period are available for the particular system. Insert the required warranty period and terms, which should be negotiated beforehand. If the warranty is in the form of separate material and installation warranties, the signatures of both manufacturer and installer are required.

BlueScope has an internet based system Warranty Estimator and Management System that allows access to warranty advice for Zinalume® and Colorbond® products and sample warranties at www.warranties.bluescopesteel.com.au/site/.

For ZAM® and Magnaflow® product warranties, contact your local Stramit office, as these are offered to projects determined by exposure conditions.

The form(s) required should be provided as part of the contract documentation.

4 SELECTIONS

Schedules are a tool to specify properties required for products or systems. If the principal permits documentation of the product or system by proprietary name, some of the properties may be unnecessary and can be deleted. Document the product or system's location or application here and/or on the drawings with a matching project code. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

4.1 PRODUCT

STRAMIT profiled sheet metal roofing schedule

	A	B	C
Location			
Profile			
Material			
Base metal thickness (BMT) (mm)			
Colour			
Fasteners			
Insulation spacer type			
Profile joint filler			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Profile: Select from the following for roof sheeting:

- Stramit® Corrugated.
- Stramit Monoclad®.
- Stramit Longspan®.
- Stramit CapacityPLUS™660
- Stramit Speed Deck Ultra®
- Stramit Speed Deck® 500

Refer to the STRAMIT website for information on state by state availability.

Material: Select from the following with reference to the atmospheric corrosivity category nominated for the project in 0171 *General requirements*. Refer also to NATSPEC TECHnote DES 010.

- Benign: Colorbond® steel, Colorbond® Coolmax steel, Colorbond® Metallic steel or Zinalume® steel.
- Moderate: Colorbond® steel, Colorbond® Coolmax steel, Colorbond® Metallic steel or Zinalume® steel.
- Marine: Colorbond® steel or Zinalume® steel or MagnaFlow®.
- Severe marine: Colorbond® Ultra steel or MagnaFlow®.
- Very severe marine: Colorbond® Stainless steel or MagnaFlow®.

This is a guide only. Contact STRAMIT technical services to determine the appropriate product for the project location.

Base Metal Thickness (BMT) (mm): Refer to STRAMIT product brochures. Select from the following:

- Generally: 0.42, 0.60 or 0.48.

Colour: Consult the BlueScope COLORBOND® Colour Chart and MagnaFlow® colour chart.

Fasteners: e.g. Concealed or Pierced: Crest or Valley.

Insulation spacer type: Select a product that is fixed to the purlin and raises the roof sheeting to suit the required insulation thickness.

Profile joint filler: Select from the following:

- FarLap: for Stramit Speed Deck Ultra®
- MonoLap: for Stramit Monoclad®.

4.2 ROOF PLUMBING

STRAMIT flashing and capping schedule

	A	B	C
Type			
Product			
Material			
Thickness and grade			
Colour			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Document proprietary profiles as proprietary items and custom profiles on drawings. If sizes are not shown on the drawings document here.

Type: e.g. Ridge capping, Roll top ridge capping, Change of pitch flashing, Apron flashing, Barge capping, Saddle flashing, Custom flashing, Barge roll, Spear point.

Product: Select from STRAMIT steel roofing flashing products.

- Stramit Capping
- Stramit Fascia
- Stramit Flashings

Refer to the STRAMIT website for information on state by state profile availability.

Material: e.g. Metallic-coated steel, Stainless steel. Lead is not compatible with aluminium or aluminium/zinc coated steel. For malleable flashings, consider soft zinc or plastic sheet. Select the material recommended by STRAMIT with reference to the atmospheric corrosivity category nominated for the project in 0171 General requirements. Refer also to NATSPEC TECHnote DES 010.

Thickness and grade: Minimum thickness and grade for commonly used materials are given in AS/NZS 2904. If other thicknesses are required, document them here.

Colour: e.g. Match roofing or consult with STRAMIT’s colour chart.

STRAMIT roof plumbing schedule

Item	Type	Product	Material	Thickness/Grade	Colour/Shape/Size
Eaves gutter					
Valley gutter					
Box gutter					
Rainhead					
Sump					
Downpipe					
Vent					
Hail guard					
Grate					
Leaf screen					

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

STRAMIT® eaves gutters: Select from:

- Stramit Downpipes
- Stramit Quad gutters: Hi Front and IninitiLine.
- Stramit Square gutters: M Pattern, S Pattern, Triline Stiffened Back and Triline Hook Back.
- Stramit Half Round gutters: 150 Half round and 200 Half round.
- Stramit O-Gee gutter: Heritage gutter.

Refer to the STRAMIT website for information on state by state availability.

Box gutters:

- Box gutters: Internal box gutters are usually difficult to clean and replace. Add requirements for siphonic systems separately, as appropriate.
- Rainhead: e.g. Standard, Tapered, Custom made square, Custom made round, Corner ogee, Ogee, Chinaman's hat.

STRAMIT downpipes. Select from:

- Stramit Downpipes: Rectangular and Round.

Refer to the STRAMIT website for information on state by state availability.

Downpipe: e.g. Internal or External and Rectangular or Circular. Internal downpipes are mainly for multi-storey applications. Acoustic insulation will not be required where downpipes are built into sound rated ducts. For plastic rainwater goods, use proprietary brand names.

Hail guard: Nominate type of mesh and fixing method.

Gratings: e.g. Wire netting ball or Hemispherical wire mesh dome. Document the metal and coating. Check if leaf screens are required.

Material:

- Metal rainwater goods: Select the product material recommended by Stramit with reference to the atmospheric corrosivity category nominated for the project in *0171 General requirements*. Refer also to NATSPEC TECHnote DES 010.
- Box gutter: Nominate material and base metal thickness (BMT)(mm). Plain zinc-coated steel is not recommended for internal box gutters, Welded stainless steel is recommended.
- Internal downpipe: e.g. Cast iron to AS 1631 (may be bitumen-coated, epoxy-coated or cement-coated, if required), Copper Type D to AS 1432, Stainless steel Type 304, PVC-U to AS/NZS 1260. PVC-U may not be acceptable for fire-resistance rating.
- Leaf screen: e.g. Plastic mesh or proprietary metal guards to match the gutter profile. Plastic leaf guards are not permitted for bushfire-prone areas.

Thickness/Grade: Minimum thickness and grade for commonly used materials are given in AS/NZS 2179. If other thicknesses are required, specify them here. See AS 1397 Appendix D for information and guidance on the selection of steel grades and coating classes.

Colour/Shape/Size:

- Box gutter: Nominate cross-section dimensions (mm) and sump size.
- Downpipe: Nominate colour and size (mm).
- Rainhead and vents: Nominate colour, shape and pattern.

4.3 ROOF ACCESSORIES

Skylight schedule

	A	B	C
Product			
Type			
Size (mm)			
Light shaft			
Ceiling diffuser			
Total system solar heat gain coefficient (SHGC)			
Total system U-Value (W/m ² .K)			

	A	B	C
WERS for Skylights energy rating % heating			
WERS for Skylights energy rating % cooling			
Hail guard			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Nominate a proprietary system or product and edit schedule to suit.

Type: e.g. Fixed, Opening, Retractable, Tubular, Ventilated.

Light shaft: Used to bring light through the roof structure and help control light distribution. Local solar geometry, surface reflectance (influenced by structural material and colour) and shape are basic considerations (see AS 4285 Appendix C for more information on skylights shaft or lightwell).

Ceiling diffuser: Translucent polymer or glass installed at ceiling level of a lightwell shaft to diffuse or redirect incoming light. Also used to control heat gains (ventilated skylights) or losses (non-ventilated skylights) and glare. Open cell diffusers are also used with ventilated skylights.

Solar heat gain coefficient (SHGC) and U-Value ($W/m^2.K$): Add if required in BCA 3.12.1.3 or BCA J1.4.

WERS for Skylights energy rating %: The % heating and % cooling refers to the percentage improvement in performance of the window compared with using a base-case Generic Window 1 (3 mm clear glazing in a standard aluminium frame).

Contact Window Energy Rating Scheme operated by the Australian Window Association www.wers.net.

Roof hatch schedule

	A	B	C
Product			
Size (mm)			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Nominate a proprietary system or product and edit schedule to suit.

Roof window schedule

	A	B	C
Product			
Type			
Size (mm)			
Total system solar heat gain coefficient (SHGC)			
Total system U-Value ($W/m^2.K$)			
WERS for Skylights energy rating % heating			
WERS for Skylights energy rating % cooling			
Hail guard			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Nominate a proprietary system or product and edit schedule to suit.

Type: e.g. Fixed, Opening.

Solar heat gain coefficient (SHGC) and U-Value ($W/m^2.K$): Add if required in BCA 3.12.1.3 or BCA J1.4.

WERS for Skylights energy rating %: The % heating and % cooling refers to the percentage improvement in performance of the window compared with using a base-case Generic Window 1 (3 mm clear glazing in a standard aluminium frame).

Roof ventilator schedule

	A	B	C
Product			
Size (mm)			
Throat diameter (mm)			
Material			
Finish			
Capacity			
Options			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Nominate a proprietary system or product and edit schedule to suit.

Material: Select the material recommended by the Rollformer or Distributor with reference to the atmospheric corrosivity category nominated for the project in *0171 General requirements*. Refer also to NATSPEC TECHnote DES 010.

Finish: e.g. Match roofing.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS/NZS 1170		Structural design actions
AS/NZS 1170.2	2021	Wind actions
AS 1562		Design and installation of sheet roof and wall cladding
AS 1562.1	2018	Metal
AS/NZS 2179		Specifications for rainwater goods, accessories and fasteners
AS/NZS 2179.1	2014	Metal shape or sheet rainwater goods, and metal accessories and fasteners
AS/NZS 2904	1995	Damp-proof courses and flashings
AS/NZS 3500		Plumbing and drainage
AS/NZS 3500.3	2021	Stormwater drainage
AS 4285	2019	Rooflights
AS/NZS 4389	2015	Roof safety mesh

The following documents are mentioned only in the Guidance text:

AS/NZS 1170		Structural design actions
AS/NZS 1170.2	2011	Wind actions
AS/NZS 1170.3	2003	Snow and ice actions
AS/NZS 1260	2017	PVC-U pipes and fittings for drain, waste and vent applications
AS 1397	2021	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 1432	2004	Copper tubes for plumbing, gasfitting and drainage applications
AS 1589	2001	Copper and copper alloy waste fittings
AS 1631	1994	Cast grey and ductile iron non-pressure pipes and fittings
AS/NZS 2179		Specifications for rainwater goods, accessories and fasteners
AS/NZS 2312		Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS 2312.1	2014	Paint coatings
AS 2427	2004	Smoke/heat release vents
AS 2665	2001	Smoke/heat venting systems - Design, installation and commissioning
AS/NZS 3500		Plumbing and drainage
AS/NZS 3500.3	2018	Stormwater drainage
AS 3959	2018	Construction of buildings in bushfire-prone areas
AS 4312	2019	Atmospheric corrosivity zones in Australia
SA HB 39	2015	Installation code for metal roof and wall cladding
SA HB 106	1998	Guidelines for design of structures in snow areas
BCA 3.12.1.3	2019	Acceptable construction - Energy efficiency - Building fabric - Roof lights
BCA J1.4	2019	Energy efficiency - Building fabric - Roof lights
BlueScope TB-01A	2021	Steel roofing products - Selection guide
BlueScope TB-01B	2021	Steel walling products - Selection guide
BlueScope TB-02	2021	Overpainting and restoration of exterior BlueScope coated steel products
BlueScope TB-16	2021	Fasteners for roofing, walling and accessory product - selection guide
NATSPEC DES 004	2019	Air, moisture and condensation
NATSPEC DES 010	2021	Atmospheric corrosivity categories for ferrous products
NATSPEC DES 011	2016	Rainwater harvesting
NATSPEC DES 018	2019	Bushfire protection
NATSPEC DES 031	2019	Specifying R-Values
NATSPEC GEN 006	2015	Product specifying and substitution
NATSPEC GEN 024	2021	Using NATSPEC selections schedules
NATSPEC TR 01	2021	Specifying ESD