

0423P STRATCO ROOFING - PROFILED SHEET METAL**Branded worksection**

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Worksection abstract

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

Background

The Australian profiled sheet steel industry is organised as follows:

- Manufacturers produce prepainted steel and metallic-coated steel coils.
- Rollformers 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

Customise this worksection *Template* 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.
- *0472 Acoustic insulation* for bulk, board and flexible insulation.
- *0552 Metalwork - fabricated* for ladders, platforms and balustrades.

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

- *0436p STRATCO cladding - profiled and seamed sheet metal.*

Material not provided by STRATCO

This branded worksection *Template* includes generic material which may not be provided by the Product Partner including:

- Some roof plumbing products.
- Glazed roofing.
- Skylights.
- Roof hatches.
- Roof windows.
- Roof access.

Documenting this and related work

You may document this and related work as follows:

- For proprietary roofing systems, import information from suppliers.
- Locate the extent of roofing types, accessories, and finishes on drawings to your office documentation policy.
- Show rooftop walkways, ladders and access systems on the drawings. Cross reference *0193 Building access safety systems* if part of a complete building access installation to AS 1657 (2018).
- 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, internal downpipes, 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) ($m^2.K/W$). See NATSPEC TECHnote DES 031 for information on specifying R-Values.
- If required, state the minimum thermal transmittance (U-Value) ($W/(m^2.K)$). See NATSPEC TECHnote DES 031 for information on specifying thermal transmittance.
- Check lead time for imported selections and consider adding a requirement, in **SUBMISSIONS**, for the builder to verify availability.
- In bushfire-prone areas, document bushfire protection requirements to AS 3959 (2018) 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 (2003) and SA HB 106 (1998).
- For information on air, moisture and condensation, see NATSPEC TECHnote DES 004.
- For guidelines on green roof design and construction considerations, see NATSPEC TECHnote DES 026. Use *0411 Waterproofing - external and tanking* and *0471 Thermal insulation and pliable membranes* worksections to document roofing membrane requirements.

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.
- Waterproofing.

Specifying ESD

The following may be specified by retaining default text:

- Skylights, roof windows.
- Recycled material content, e.g. steel and aluminium roofing has high recycled content and is easily recycled post-use.

The following may be specified by including additional text:

- Green roofs. See NATSPEC TECHnote DES 026.
- High performance roofing systems to extend building service life.
- Roofing systems with high thermal mass to reduce heating/cooling load.
- Fibre cement composite with waste paper or wood fibres.
- Recycled plastic roofing materials.
- Rainwater tanks. See NATSPEC TECHnote DES 011 on rainwater harvesting.

Refer to NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

Stratco is one of the largest producers of building products in Australia with manufacturing facilities in every State and Territory. Established in 1948 Stratco has been at the forefront of product development through Industry Engagement, Research & Development, Engineering, and Certified Testing.

Stratco will continue to offer quality service, innovative products, and push the boundaries of what is achievable in Commercial and Residential construction.

1.1 RESPONSIBILITIES

General

Requirement: Provide a STRATCO 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 (2021): [complete/delete]

See AS/NZS 3500.3 (2021) 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.

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 (2014) Table 2.1, AS 4312 (2019) 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 (2019). Refer also to BlueScope Technical bulletins BlueScope TB-01A (2023) and BlueScope TB-01B (2022), 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 (2019).

Roof access

Requirement: To *0193 Building access safety systems*.

Document in *0193 Building access safety systems* where part of a building access installation to AS 1657 (2018).

1.2 COMPANY CONTACTS

STRATCO technical contacts

Website: www.stratco.com.au/au/roofing-walling-cladding

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 STANDARDS

General

Standard: To AS 1562.1 (2018).

1.5 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: Visit www.stratco.com.au/au/roofing-walling-cladding to access comprehensive technical details.

1.6 INTERPRETATION

Definitions

General: For the purposes of this worksection, the definitions given in AS 1562.1 (2018) apply.

Edit the **Definitions** subclause to suit the project or delete if not required. List alphabetically.

1.7 TOLERANCES

Sheet metal roofing

Supporting members: To AS 1562.1 (2018) clause 4.2.3.

1.8 SUBMISSIONS

Edit the **SUBMISSIONS** clause to suit project requirements.

Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

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 (2018) clause 5.4 for resistance to concentrated loads and to AS 1562.1 (2018) clause 5.5 for resistance to wind pressures.
- Metal roofing in AS/NZS 1170.2 (2021) cyclonic regions: Roof sheeting and fastenings to AS 1562.1 (2018) clause 5.6.

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.

Recycled material content: Submit documentation from the roofing material manufacturer showing an average recycled steel content of 17.4%.

Environmental Product Declaration (EPD): Submit an EPD to ISO 14025 (2006) with a Product Category Rule (PCR), used to calculate environmental impact indicators, to EN 15804 (2012) or ISO 21930 (2017).

Nominate which products are required to have an EPD either here or in PRODUCTS.

An EPD is an independently verified and registered document that quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function. EPDs can support carbon emission reduction by allowing a fair and equitable comparison of the impacts of different materials and products within specific product categories.

Samples

Requirement: Submit samples to PRODUCTS, **GENERAL, Samples.**

Shop drawings

Shop 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.

Warranties

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

1.9 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.

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.

Samples

Approved samples that define the acceptable limits of colour and texture variations are retained on site. If particular or additional samples are required, list them here.

Requirement: Provide samples of the following, showing the range of variation available:

- Trim and accessories with a colour finish.
- Custom profiled flashings and cappings.
- Sheet metal finishes.
- Sealants.

Storage and handling

Storage: To the manufacturer's recommendations and as follows:

- Keep clean, dry and unexposed to weather.
- Store away from uncured concrete and masonry, on a level base and not in contact with other materials that cause staining, denting or other surface damage.
- Stack flat and off the ground on at least 3 evenly placed bearers.

Handling: Handle metal roofing materials as follows:

- Use gloves when handling precoated metal roofing material.
- Use soft soled shoes when fixing or working on roofs.
- Protect edges and surfaces from damage. Do not drag sheets across each other or over other materials.

Storage area conditions: Allocate a safe and trade free area.

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.

Welded safety mesh

Standard: To AS/NZS 4389 (2015).

Welded safety mesh may be used for fall arrest if required by WHS authorities. Coordinate with *0471 Thermal insulation and pliable membranes*, which also cites AS/NZS 4389 (2015). Mesh support for roof insulation may not be required if fall arrest sarking is used.

2.2 STRATCO PROFILED SHEET METAL ROOFING

See SA HB 39 (2015) Sections 2 and 7 for general advice on material selection for steel sheet roofing.

Standards

Design and materials: To AS 1562.1 (2018).

STRATCO roofing

Requirement: STRATCO profiled steel sheet roofing, as documented.

Refer to STRATCO literature for information on national product availability.

Nominate selections in the **STRATCO sheet metal roofing schedule**.

Plywood sheeting

Standard: To AS/NZS 2269.0 (2012).

Surface grade: CD.

STRATCO recommend that wide flat pan profiles used for roof sheeting, such as Hiland Tray, should use a plywood underlayer for trafficability, serviceability, and aesthetic purposes, refer to STRATCO Design Guides.

Change this *Optional* style text to *Normal* style text and include any separation layer if required.

AS/NZS 2269.0 (2012) defines five veneer qualities A, S, B, C and D, the lowest grade.

Plywood formaldehyde emission class to AS/NZS 2269.0 (2012): E₁.

Super E₀ and E₀ class may be available at additional cost and lead time. A formaldehyde emission class E₁ or less can improve indoor air quality.

Compliance with this subclause targets the Engineered Wood Products requirement for structural plywood within the Minimum Expectation level of the Exposure to Toxins credit in Green Star Buildings (2021):

- Structural plywood: 1.0 mg/L, (E₁).

Bond: Type A to AS/NZS 2754.1 (2016).

Thickness: 19 mm.

Identification: Sheets labelled under the authority of a recognised certification scheme to *0185 Timber products, finishes and treatment*.

Nominate the relevant certification schemes in *0185 Timber products, finishes and treatment*.

Separation layer

Sarking: Suitable for the climate zone of the construction.

Fasteners

Requirement: Starter clips, fixing clips and fastenings to the roofing system supplier's recommendations.

Prefinished exposed fasteners: Finish with an oven baked polymer coating to match the roofing material.

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

Profiled fillers

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

Location: Provide profiled fillers under flashings to the following:

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

Add locations as required.

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.

Components

Sealant: 100% neutral cure non-acid based silicone rubber to match roofing.

2.3 ROOF PLUMBING

General

See SA HB 39 (2015) Section 5 for the manufacture and fitting of internal and external metal gutters, downpipes, sumps and rainheads, AS/NZS 3500.3 (2021) Section 3 for method of sizing gutters and downpipes, and AS/NZS 3500.3 (2021) 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, external downpipes and accessories necessary to complete the roofing system.

Products: STRATCO steel roof plumbing, including gutters, capping, fascia's and downpipes, as documented.

Flashing and capping: Notched to match profile of roofing.

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.

Delete if not required.

Standards

Roof drainage: To AS/NZS 3500.3 (2021).

Metal rainwater goods: To AS/NZS 2179.1 (2014).

Flashings and cappings: To AS/NZS 2904 (1995).

See SA HB 39 (2015) Section 8 for recommended practice for metal flashings and cappings.

2.4 SKYLIGHTS

General

Standard: To AS 4285 (2019).

Description: A proprietary skylight system for installation in roofs pitched less than 15°, 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.

Check if your roofing and associated access hatches are required to be fire rated or non-combustible. Refer to BCA (2022) Section C and the ABCB Fire performance of external walls and cladding advisory note (2020).

2.6 ROOF WINDOWS

General

Standard: To AS 4285 (2019).

Description: A proprietary window system designed for non-vertical installation in roofs pitched greater than 15° and less than 90°, 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 (2004). For design of smoke/heat venting systems, see AS 2665 (2001).

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

3 EXECUTION

3.1 GENERAL

Preparation

Substrates or framing: Before fixing roofing, check the alignment of substrates or framing and adjust if required.

Flexible underlay: Check that the underlay or insulation is restrained.

Roofing: Make sure the roofing is clean and free of dust and loose particles.

3.2 INSTALLATION

Protection

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

Protection: Protect surfaces and finishes, including the retention of protective coatings during installation.

Thermal movement

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

Metal separation

Make sure of compatibility or detail separation.

See AS 1562.1 (2018) Appendix C Table C3 for guidance on the compatibility of metals. See also SA HB 39 (2015) Section 2 on material selection. It is primarily a design responsibility 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 (2018) clause 3.4.3 and AS 1562.1 (2018) Appendix C Table C4. There are four conditions to be avoided:

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

In marine or high humidity environments, separate green hardwood from aluminium and coated steel.

Typical methods for metal separation include inserting a separation layer such as polyethylene film, 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 inserting a separation layer.

3.3 STRATCO PROFILED SHEET METAL ROOFING**Roof sheet installation**

Standard: To AS 1562.1 (2018).

STRATCO steel roofing: To the manufacturer's recommendations.

Refer to the STRATCO Roofing and walling installation manual.

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 sheet metal roofing manufacturer's recommendations.

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]

Consult manufacturer for recommended maximum expansion joint spacing. Typical spacings are 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.

Plywood sheeting

Installation: Lay the length of the sheets at right angles to the supports.

End joints: Stagger the end joints and locate centrally over framing members.

Edge support: If panels are not tongue and grooved, provide noggings or trimmer joists to support the edges.

Fixing: 300 mm centres to each support.

Timber: Screw or adhesive and nail.

Steel: Metallic-coated, self-drilling/tapping screws with the heads finishing below the surface.

Control joints: 12 mm gap at abutting building elements.

Change this *Optional* style text to *Normal* style text if plywood sheeting is to be installed.

Detail the assembly to provide a 50 mm air gap between the plywood and insulation.

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. End laps are not suitable for all roofing profiles.

3.4 ROOF PLUMBING**Jointing sheet metal rainwater goods**

See AS/NZS 3500.3 (2021) 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 for every two lengths of flashing, at a maximum of 12 m centres.

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 flashing over the roofing 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 overflashing 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 and 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 cure 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 box gutter strap and channel system.

Lining: [complete/delete]

e.g. Stratco Gutter Board - Smartspan 0.42 BMT Zinalume, 6.0 m lengths.

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 all box gutter sumps.
- 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. In high wind areas consider the degree of exposure of gutters and downpipes to wind actions and the need to provide additional fixings.

General: Prefabricate downpipes to the required section and shape if 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.

- Size: Not less than the diameter of the downpipe.

Downpipe support: Provide supports and fixings for downpipes.

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.

3.5 SKYLIGHTS

Installation

Standard: To AS 4285 (2019).

Fixing: [complete/delete]

Specify and detail to the recommendations of the skylight manufacturer.

3.6 ROOF HATCHES

Installation

Fixing: [complete/delete]

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

3.7 ROOF WINDOWS

Installation

Standard: To AS 4285 (2019).

Fixing: [complete/delete]

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

3.8 ROOF VENTILATORS

Installation

Fixing: [complete/delete]

AS 2428.1 (2004) covers the testing of smoke and heat release ventilators to determine resistance to leakage during rain.

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

3.9 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.

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 (2022).

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 oxidisation.

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

Protection: After completion, remove protective coatings using methods to the manufacturer's recommendations.

Protective film will withstand exposure to weather for a limited period of time before losing its peel-off characteristics and causing staining. The gloss coating changes when exposed to plasticisers.

Operation and maintenance manuals

Requirement: Prepare a manual that includes 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.

Compliance with this subclause targets the Operations and Maintenance requirement within the Minimum Expectation level of the Verification and Handover credit in Green Star Buildings (2021).

Warranties

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the manufacturer and the installer.

- Material warranty: Life to perforation and paint flake and peel under normal environment and use conditions.
- Product performance warranty: Product warranty as per STRATCO published literature.
- Material warranty period: As offered by Colorbond and BlueScope Steel.
- Product performance warranty period: Up to 20 Years.

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.

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 PERFORMANCE

Roofing performance schedule

	A	B	C
Solar absorptance			
Light Reflectance Value (LRV)			
Solar Reflectance Index (SRI)			

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.

Solar absorptance: Select from manufacturer's range. Light (< 0.40), Medium (0.40 to 0.60), Dark (> 0.60). See BCA (2022) J3D7 for roofs to a Class 2 building or a Class 4 part of a building.

Light Reflectance Value (LRV): If required, nominate the light reflectance value. Some local authorities limit the light reflectance value for building exteriors. Refer to the relevant local authority for any requirements.

Solar Reflectance Index (SRI): Composite measure of a materials reflectance and emittance.

4.2 PRODUCT

STRATCO Profiled sheet metal roofing schedule

	A	B	C
Product			
Cover width			
Base metal thickness (BMT) (mm)			
Material			
Colour			
Fasteners			
Insulation spacer type			

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: Select from the following STRATCO products:

- Prodek.
- Topdek 700.
- Maximus 33.
- Maximus 22.
- Superdek.
- Smartspan.
- CGI corrugated 16.
- Nailstrip Hiland Tray™ rib height 25 mm.
- Nailstrip Hiland Tray™ rib height 38 mm.
- Snaplock Hiland Tray™ rib height 25 mm.
- Snaplock Hiland Tray™ rib height 38 mm.

Cover width: Select from:

- Nailstrip Hiland Tray™ (25 mm rib height): Standard cover width 195mm, 295mm, 350mm. Variable cover width 195 - 350 mm. Refer to the STRATCO technical design guides.
- Nailstrip Hiland Tray™ (38 mm rib height): Standard cover width 165mm, 265mm, 320mm. Variable cover width 195 - 350 mm. Refer to the STRATCO technical design guides.

- Snaplock Hiland Tray™ (25 mm rib height): Standard cover width 225mm, 325mm. Variable cover width 195 - 350 mm. Refer to the STRATCO technical design guides.
- Snaplock Hiland Tray™ (38 mm rib height): Standard cover width 185mm, 285mm, 340mm. Variable cover width 195 - 350 mm. Refer to the STRATCO technical design guides.
- All other STRATCO roofing products come in single cover widths. Refer to the STRATCO technical design guides.

Base metal thickness (BMT) (mm): Refer to the STRATCO technical design guides. Select from the following:

- Generally: Select from 0.42 or 0.48. (Maximus 33 profile only available in 0.48).
- STRATCO Hiland Tray series: 0.55.

Material: Select the product material with reference to the atmospheric corrosivity category nominated for the project in *0171 General requirements*. Finishes include: COLORBOND® steel, COLORBOND® Matt steel, COLORBOND® Metallic steel, COLORBOND® Ultra steel, ZINCALUME® steel and galvanised steel. Refer to the STRATCO design guides for options. Refer also to NATSPEC TECHnote DES 010.

Colour: Refer to the STRATCO colour charts.

Fasteners: e.g. Concealed or Pierced: Crest or Valley. Topdek 700 and Snaplock Hiland Tray™ are fixed using concealed fasteners. Select fixings suitable for the substrate, e.g. roof purlins, structural purlins, top hats, or a solid structure (Plywood or SIPS). Refer to the STRATCO technical design guides.

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

4.3 ROOF PLUMBING

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 STRATCO steel roof flashing products.

- STRATCO Capping.
- STRATCO Fascia.
- STRATCO Flashings.

Refer to the STRATCO website for information on profile availability.

Material: e.g. Metallic-coated steel, Soft zinc, Lead, Copper, Aluminium annealed sheet, Bitumen (or polyethylene) coated aluminium, Stainless steel, PVC, Butyl rubber and Neoprene rubber. 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 STRATCO 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 (1995). If other thicknesses are required, document them here. See AS 1397 (2021) Appendix D for information and guidance on the selection of steel grades and coating classes.

Colour: e.g. Match roofing or consult the STRATCO colour chart.

Roof plumbing schedule

Item	Type	Product	Material	Thickness/ Grade	Colour/Shape/ Size
Eaves gutter					
Valley gutter					

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

Document requirements here if not shown on the drawings.

Type:

- Eaves gutter: Select from STRATCO Edge gutter 200, Edge gutter 160, Domestic 150 half round, Commercial 200 half round, Commercial 250 half round, Commercial 300 half round, Hi-Square slotted, OG, Quad, Smoothline, VFC gutter or VF gutters.
- Box gutters: Options include; 0.55 BMT Colorbond, 0.80 BMT Colorbond, 0.55 BMT Zinalume, 0.80 BMT Zinalume, 0.70 Stainless Steel. Add requirements for siphonic systems separately, as appropriate.
- Rainhead: Refer to STRATCO design guides. Options include, Round, Curved, Tapered, Box, Segmented and custom made designs.
- Downpipe: e.g. External, Rectangular or Circular. For plastic rainwater goods, use proprietary brand names.
- Vents: Refer to STRATCO design guides. Options include, ridge vents and gable vents.
- Hail guard: Nominate type of mesh and fixing method.
- Grates: e.g. Wire netting ball or Hemispherical wire mesh dome. Document the metal and coating.
- Leaf guard: Check if leaf guards are required.

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

Material:

- Metal rainwater goods: 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.
- 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.
- Leaf guard: e.g. Plastic mesh or proprietary metal guards to match the gutter profile. Combustible leaf guards are not permitted for bushfire-prone areas.

Thickness/Grade: Minimum thickness and grade for commonly used materials are given in AS/NZS 2179.1 (2014). If other thicknesses are required, specify them here. See AS 1397 (2021) 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, shape and size (mm).
- Rainhead and vents: Nominate colour, shape and pattern.

4.4 ROOF ACCESSORIES

Skylight schedule

	A	B	C
Product			
Type			
Size (mm)			
Light shaft			
Ceiling diffuser			
Total system solar heat gain coefficient (SHGC)			

	A	B	C
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, 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 (2019) 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/m².K): Add if required in BCA (2022) J4D5 or BCA (2022) H6D2(1)(b)(i).

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 Glass and Window Association
awa.associationonline.com.au.

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/m².K): Add if required in BCA (2022) J4D5 or BCA (2022) H6D2(1)(b)(i).

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			
Material			
Length			
Finish			

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: Stratco Exhale® Domestic Ventrledge, Stratco Standard Commercial Ventrledge, StratFlo Industrial Ventrledge.

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

Length: Stratco Exhale® Domestic Ventrledge 1220mm long or 2440mm long, Stratco Standard Commercial Ventrledge 6m, StratFlo Industrial Ventrledge 7.6m.

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 2269		Plywood - Structural
AS/NZS 2269.0	2012	Specifications
AS/NZS 2754		Adhesives for timber and timber products
AS/NZS 2754.1	2016	Adhesives for manufacture of plywood and laminated veneer lumber (LVL)
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
EN 15804	2012	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
ISO 14025	2006	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 21930	2017	Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services

The following documents are mentioned only in the **Guidance** text:

AS/NZS 1170		Structural design actions
AS/NZS 1170.3	2003	Snow and ice actions
AS 1397	2021	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 1657	2018	Fixed platforms, walkways, stairways and ladders - Design, construction and installation
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 2428		Methods of testing smoke/heat release vents
AS 2428.1	2004	Determination of resistance to leakage during rain
AS 2665	2001	Smoke/heat venting systems - Design, installation and commissioning
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 the design of structures in snow areas
BCA H6D2	2022	Class 1 and 10 buildings - Energy efficiency - Application of Part H6
BCA J3D7	2022	Energy efficiency - Elemental provisions for a sole-occupancy unit of a Class 2 building or a Class 4 part of a building - Roofs and ceilings of a sole-occupancy unit of a Class 2 building or a Class 4 part of a building
BCA J4D5	2022	Energy efficiency - Building fabric - Roof lights
BCA Section C	2022	Fire resistance
ABCB Fire performance	2020	Fire performance of external walls and cladding advisory note
BlueScope TB-01A	2023	Steel roofing products - Selection guide
BlueScope TB-01B	2022	Steel walling products - Selection guide

BlueScope TB-02	2022	Overpainting and restoration of exterior BlueScope coated steel products
GBCA Buildings	2021	Green Star Buildings
NATSPEC DES 004		Air, moisture and condensation
NATSPEC DES 010		Atmospheric corrosivity categories for ferrous products
NATSPEC DES 011		Rainwater harvesting
NATSPEC DES 018		Bushfire protection
NATSPEC DES 026		Living walls and roofs
NATSPEC DES 031		Specifying R-Values
NATSPEC GEN 006		Product specifying and substitution
NATSPEC GEN 024		Using NATSPEC selections schedules
NATSPEC TR 01		Specifying ESD