

0428P DELTA PANELS INSULATED ROOFING SYSTEMS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide DELTA PANELS insulated panel roofing systems and associated work, as documented.

Ambient climatic conditions

Design rainfall intensity (mm/h) to the NCC cited AS/NZS 3500.3 (2021): [complete/delete]

Corrosion resistance

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

Distance from marine influence: [complete/delete]

Roof access

Requirement: To 0193 Building access safety systems.

1.2 COMPANY CONTACTS**DELTA PANELS technical contacts**

Website: www.deltapanel.com.au/contact

1.3 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.
- 0193 Building access safety systems.

1.4 MANUFACTURER'S DOCUMENTS**Technical manuals**

Roofing panel and system product range: www.deltapanel.com.au/architectural-panels

Resource centre: www.deltapanel.com.au/engineering

Technical services: www.deltapanel.com.au/handling-installation

1.5 INTERPRETATION**Abbreviations**

General: For the purposes of this worksection, the following abbreviations apply:

- EPS: Expanded polystyrene.
- EPS-FR: Expanded polystyrene with fire retardant.
- FM: Factory Mutual.
- MW: Mineral wool.
- TPC: Thermosetting phenolic composite.

1.6 TOLERANCES**Permitted deviations**

Requirement: To DELTA PANELS' recommendations.

Structural steelwork for DELTA PANELS roofing system: ± 5 mm between bearing planes of adjacent supports.

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

1.7 SUBMISSIONS**Fire performance**

Fire hazard properties: Submit evidence of conformity to **FIRE PERFORMANCE, Fire hazard properties**.

Operation and maintenance manuals

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

Products and materials

Thermal insulation performance: Submit evidence of performance to AS/NZS 4859.1 (2018) and AS/NZS 4859.2 (2018).

Type tests: Submit test results for the following:

- Insulated panel systems: To PRODUCTS, **DELTA PANELS INSULATED ROOFING SYSTEMS, Tests**.

Samples

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

Shop drawings

General: Submit shop drawings to a scale that best describes the detail, showing the following:

- [complete/delete]

Subcontractors

General: Submit names and contact details of proposed DELTA PANELS' approved installer.

Warranties

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

1.8 INSPECTION**Notice**

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

- Roof supports.
- Glazing products before they are installed.
- The parts of the roofing and roof plumbing installation before covering up or concealing.

2 PRODUCTS**2.1 GENERAL****Product substitution**

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

Samples

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

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

Storage and handling

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

- Keep clean, dry and unexposed to weather.
- Protect materials including edges and surfaces from damage.
- Do not drag metal sheets or panels across each other or over other materials.
- Store off the ground, in sealed unopened packaging on a slightly sloped surface to prevent ponding on panel faces.

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.

2.2 FIRE PERFORMANCE

Fire hazard properties

Insulation materials: Tested to AS/NZS 1530.3 (1999). Fire hazard indices as follows:

- Spread-of-Flame Index: ≤ 9 .
- Smoke-Developed Index: ≤ 8 if Spread-of-Flame Index is more than 5.

Materials with reflective facing: Test to AS/NZS 1530.3 (1999) and the recommendations of Appendix A6.

2.3 DELTA PANELS ANCILLARIES

DeltaTrim

Receiver channel:

- Folded steel channel sized to suit panel profile and thickness.

Apron flashing:

- Folded steel flashing to suit adjoining angled roofs.

Barge capping:

- Folded steel barge capping with or without drip guard, sized to suit panel profile and thickness.

Rear barge:

- Folded steel rear barge capping.

Fascia flashing:

- Folded steel flashing for gutter.

Ridge cap:

- Folded steel ridge cap.

DELTA PANELS skylight

Profiled translucent PVC extrusion: 200 mm wide.

Highline gutter

Gutter brackets: Match roof profile.

Profiled fillers

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

Location: Provide profiled fillers, under flashings and to close off corrugation cavities from the inside and outside of the building, to the following:

- Ridges.
- Eaves.
- Steps in roof panelling.

Colour: Black.

2.4 DELTA PANELS INSULATED ROOFING SYSTEMS

Standards

Design, installation and materials: To AS 1562.1 (2018).

DeltaCorroCorro-EPS-FR

Description: A screw fixed, interlocking panel system of pre-finished corrugated steel sheets with a fire retardant EPS insulation core.

DeltaCorroCorro-TPC

Description: A screw fixed, interlocking panel system of pre-finished corrugated steel sheets with a thermosetting phenolic composite insulation core.

DeltaOrb-EPS-FR

Description: A screw fixed, interlocking panel system of pre-finished corrugated and flat steel sheets with a fire retardant EPS insulation core.

DeltaOrb-TPC

Description: A screw fixed, interlocking panel system of pre-finished corrugated and flat steel sheets with a thermosetting phenolic composite insulation core.

DeltaTrimCorro-EPS-FR

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal and corrugated steel sheets with a fire retardant EPS insulation core.

DeltaTrimCorro-TPC

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal and corrugated steel sheets with a thermosetting phenolic composite insulation core.

DeltaTrim-EPS-FR

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal and flat steel sheets with a fire retardant EPS insulation core.

DeltaTrim-TPC

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal and flat steel sheets with a thermosetting phenolic composite insulation core.

DeltaTrim-MW

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal and flat steel sheets with a mineral wool insulation core.

DeltaTrimTrim-EPS-FR

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal steel sheets with a fire retardant EPS insulation core.

DeltaTrimTrim-TPC

Description: A screw fixed, interlocking panel system of pre-finished trapezoidal steel sheets with a thermosetting phenolic composite insulation core.

Tests

Resistance to concentrated loads: To AS 1562.1 (2018) clause 5.4.

Resistance to wind pressures:

- Non-cyclonic wind regions: To AS 1562.1 (2018) clause 5.5.
- Cyclonic wind regions: To AS 1562.1 (2018) clause 5.6.

2.5 ROOF PLUMBING**General**

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

Standards

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

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

PVC-U rainwater goods and accessories: To the NCC cited AS/NZS 3500.3 (2021).

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

Flashings and cappings

Flashing and capping types: DELTA PANELS' external prefabricated flashings to match insulated panel coating.

Material and colour: Match roof panel top sheeting.

Ridge and barge cappings

Capping types: External prefabricated cappings and custom to match insulated panel coating.

Material and colour: Match roof panel top sheeting.

Gutters

Eaves gutter: Highline gutter.

- Colour: Match roof panelling.

Valley and parapet gutters: As documented.

Box gutters laid to falls: As documented.

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.

3 EXECUTION

3.1 GENERAL

Preparation

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

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 film during installation.

Thermal movement

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

Metal separation

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

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

3.3 DELTA PANELS INSULATED ROOFING SYSTEM

Installation

Requirement: To DELTA PANELS' recommendations using DELTA PANELS' approved installers for installation, including the following:

- Fasteners, laps, sealants and fillers: Install, as documented.
- Site cut panels:
 - . Provide accurate, true lines with no distortion.
 - . Cut with a suitable metal cutting circular type saw and treat exposed edges with a suitable edge protection lacquer.
 - . Cut openings to the minimum size necessary.
 - . Penetrations larger than 300 x 250 mm: Provide additional structural support.

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

Accessories: Provide material with the same finish as roofing sheets.

3.4 BUILDING ELEMENTS

Ridges and eaves

Sheet ends: Treat as follows:

- Project panel ends with a 60 mm cut back at the eaves.
- Close off ridges with purpose-made ridge fillers of closed cell polyethylene foam.

Ridges and barge

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

Flashings (non-cyclonic)

Fixing: Fix at 450 mm centres.

Overlapping: Overlap top sheets.

Profiled fillers

Sealing: Seal the top, bottom and sides of each profile filler with a single line of non-setting gun-grade sealant.

Fixing: Provide a tight fit, without gaps.

Fasteners

DELTA PANELS roof panels:

- Standard applications: Locate fasteners through every crown of the profile.
- Additional fastenings: Locate in the valley of the panel.

3.5 ROOF PLUMBING

External downpipes

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

3.6 ROOF WINDOWS

Installation

Standard: To AS 4285 (2019).

Fixing method: [complete/delete]

3.7 COMPLETION

Reinstatement

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

Touch up: To DELTA PANELS' recommendations.

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

Cleaning

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

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

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

DELTA PANELS roof panels: Clean surfaces to the manufacturer's recommendations.

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

Operation and maintenance manuals

On completion: Submit a manual of recommendations from DELTA PANELS for annual maintenance of the roofing system, including recommended methods of access, inspection, cleaning, repair and replacement.

Warranties

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

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

4 SELECTIONS

4.1 PRODUCT

DELTA PANELS insulated roofing system schedule

	A	B	C
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	A	B	C
Product			
Profile			
Roof pitch			
Internal environment			
Panel width (mm)			
Panel length (m)			
Top sheet thickness (mm)			
Bottom sheet thickness (mm)			
Top sheet: Colour			
Bottom sheet: Colour			
R-Value (m ² .K/W)			
Thickness (mm)			
Solar absorptance			
Light Reflectance Value (LRV)			