0436P COLORBOND® STEEL AND ZINCALUME® STEEL IN CLADDING

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to lightweight external wall cladding of COLORBOND® steel and ZINCALUME® steel profiled sheet metal products.

***Guidance* text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at www.natspec.com.au.

***Optional* style text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

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:

- *0342 Light steel framing*.
- *0382 Light timber framing*.
- *0432 Curtain walls .*
- *0433 Stone cladding*.
- *0434 Cladding – flat sheets and panels*.
- *0435 Cladding – planks and weatherboards*.
- *0471 Thermal insulation and pliable membranes* for wall insulation, thermal break strips and vapour permeable membranes.
- *0531 Suspended ceilings – combined* for suspended soffits.

Material not provided by BlueScope

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

- Seamed sheet metal cladding.

Documenting this and related work

You may document this and related work as follows:

- Check if your cladding is required to be non-combustible, refer to BCA Section C and ABCB Advisory Note 3. Consider adding a requirement in **SUBMISSIONS** for evidence of conformance from the contractor. If using a performance solution for facade cladding, type testing to AS 5113 may be used as the verification method for combustible external walls.
- Document the structural support system to your office documentation policy.
- For flush jointed fibre cement soffit lining, import the relevant material from *0434 Cladding – flat sheets and panels.*
- If required, state the minimum added thermal resistance (R-Value) (m^2 K/W). See NATSPEC TECHnote DES 031 for information on specifying R-Values.
- Document bushfire protection requirements to conform to AS 3959 and the BCA. See NATSPEC TECHnote DES 018 for information on bushfire protection.

The *Normal* style text of this worksection *Template* 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:

- Guarantees and warranties.

Specifying ESD

The following may be specified by including additional text:

- Metal cladding manufactured from recycled metal and/or is recyclable.

- Metal cladding finished with low VOC or non-VOC finish.
- Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

1 GENERAL

BlueScope is a leader in the provision of high quality metallic-coated and painted steel products for the building and construction sector in Australia. Our most notable brands are **COLORBOND**® steel and **ZINCALUME**® steel.

BlueScope products are now an integral part of both new and retrofit housing, commercial and industrial projects.

Steel Supply Channel Overview

BlueScope manufacture **COLORBOND**® steel and **ZINCALUME**® steel coils.

Rollformers take steel coils and use proprietary machinery to shape steel into different profiles and cut sheets to length.

Distributors break down steel coils into smaller coils and on sell these. Distributors also slit coils into various widths.

Installers take off material quantities, order and install often as subcontractors to the Builder.

1.1 RESPONSIBILITIES

General

Requirement: Provide and install COLORBOND® steel and ZINCALUME® steel cladding and associated work, as documented.

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

Location exposure severity

Exposure severity determines the grade of COLORBOND® steel and ZINCALUME® Refer to BlueScope TB-01B guide on selecting steel walling products.

Exposure severity category: [complete/delete]

Exposure severity category: The approximate distance from marine influence: Select from the following:

- Benign: > 1000 m from breaking surf/exposed marine or > 1000 m from calm marine.
- Moderate: 401 to 1000 m from breaking surf/exposed marine or 201 to 1000 m from calm marine.
- Marine: 201 to 400 m from breaking surf/exposed marine or 101 to 200 m from calm marine.
- Severe marine: 101 to 200 m from breaking surf/exposed marine or 0 to 100 m from calm marine.
- Very severe marine: 0 to 100 m from breaking surf/exposed marine.

For organic coating used in sheet steel, there are additional corrosivity categories. Add, if appropriate. They are:

- Tropical inland - North Queensland, Northern Territory, North-West Western Australia, Papua New Guinea and the Pacific Islands, except where affected by salinity, and
- Very high - offshore and beach front locations and aggressive industrial environments where pH may be less than 5.

Refer to the *0171 General requirements* worksection for the designation of the Exterior atmospheric corrosivity category of the project.

1.2 COMPANY CONTACTS

BlueScope technical contacts

Website: www.steel.com.au/support

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.steel.com.au/library.

1.5 TOLERANCES

Permitted deviations
Requirement: To AS 1562.1 clause 4.2.

1.6 SUBMISSIONS

Products and materials
Type tests: As appropriate for the project, submit evidence of conformance to the following:
- Metal cladding generally: Cladding and fastenings to AS 1562.1 clause 5.5 for resistance to wind pressures.
- Metal cladding in cyclonic regions to AS/NZS 1170.2: Cladding and fastenings to AS 1562.1 clause 5.6.

Type tests are carried out before the contract. 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 are retained on site and define the acceptable limits of colour and texture variation.

Finish: Submit samples of the cladding materials.

Subcontractors
Seamed sheet metal: Submit evidence of experience with non-ferrous cladding installation.
Evidence of experience: [complete/delete]

Check conditions of warranty for cladding selected. Delete if supplier/installer details are not required.

Warranties
Requirement: Submit the following:
- [complete/delete]

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

Cladding materials: Submit the manufacturer's published product warranties.

1.7 INSPECTION

Notice
Inspection: Give notice so that inspection may be made of the following:
- Framing, sarking, vapour barrier and insulation 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 cladding products: Conform to **PRODUCTS**, **GENERAL**, **Substitutions** in *0171 General requirements*.

The *0171 General requirements* worksection clause 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.
- Do not drag sheets or panels across each other or over other materials.
- 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 material.

Marking

Identification: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.
- Material composition and characteristics such as volatility, flash point, light fastness, colour and pattern.

2.2 COLORBOND® STEEL AND ZINCALUME® STEEL COMPONENTS

General

Flashing: To AS/NZS 2904.

Material and colour: To match the cladding material.

Rib notching: To match the cladding material.

Fasteners

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

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

Fasteners to timber battens**:** Provide fasteners long enough to penetrate the thickness of the batten without piercing the underside.

2.3 COLORBOND® STEEL AND ZINCALUME® STEEL

General

Requirement: COLORBOND® steel or ZINCALUME® steel profiled sheet metal cladding.

Design and installation: To AS 1562.1.

AS 1562.1 requires materials to conform to the following standards:

- Aluminium: AS/NZS 1734.
- Copper: AS 1566.
- Steel: AS 1397 for continuously hot-dip metallic-coated sheet and strip or AS/NZS 2728 for prepainted and organic film/metal laminate products.

Stainless steel: To ASTM A240/A240M.

AS 1449 cited in AS 1562.1 for stainless steel has been withdrawn.

Selection: To the **COLORBOND®steel and ZINCALUME®steel profiled sheet metal cladding schedule**.

2.4 SEAMED SHEET METAL SYSTEM

General

Requirement: Sheet metal roll formed into pan profiles, laid with seamed joints on flush finished continuous plywood sheeting over an underlayer and a separation layer.

Selection: To the **Seamed sheet metal cladding schedule**.

Plywood sheeting

Surface grade: DD to AS/NZS 2269.0.

AS/NZS 2269.0 defines five veneer qualities A, S, B, C and D, the lowest Grade.

Bond: Type A.

Thickness: 19 mm.

Plywood formaldehyde emission class to AS/NZS 2269.0: Class E_1.

Super E_0 and E_0 class may be available at additional cost and lead time. A formaldehyde emission class E_1 or less can improve indoor air quality.

Plywood sheet certification

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

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

Plywood sheeting

Grading: DD to AS/NZS 2269.0.

Bond: Type A.

AS/NZS 2269.0 defines five veneer qualities A, S, B, C and D the lowest Grade.

Thickness: 19 mm.

Plywood sheet certification

Identification: Panels labelled under the authority of a recognised certification program applicable to the product.

Certification program: Engineered Wood Products Association of Australia (EWPAA) Quality Control and Plywood and LVL Product Certification Scheme.

Underlayer

Description: Self-adhesive, rubberised asphalt/polyethylene waterproofing membrane.

Separation layer

Description: Fire-resisting mat of a nylon core of fused entangled filaments.

Accessories

Solder (tin/lead): 40/60 soft solder.

Flux: Z-04-S.

Sealant: 100% natural cure non-acid based silicone rubber to match cladding.

Fasteners: Starter clips, fixing clips and fastenings as recommended by the cladding system supplier.

3 EXECUTION

3.1 PREPARATION

Substrates or framing

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

Flexible underlay. Check that the underlay is restrained.

3.2 INSTALLATION

General

Requirement: Fix sheeting firmly against framing to the manufacturer's recommendations.

Fixing method: As documented or to one of the following fixing methods to manufacturer's recommendations:

- Steel framing: Screw.
- Timber framing: Nail or screw.
- Minimum penetration for profiled metal sheets: 30 mm for timber framing.

Accessories and trim

Requirement: Provide accessories and trim required to complete the installation with the same finish as the cladding sheets.

Corner flashing: Finish off at corners with purpose-made folded flashing strips.

Metal separation

Design for compatibility or detail separation.

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:

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

Incompatible metal fixings: Do not use.

Fixing eaves and soffit lining

Nailing: 150 mm centres to bearers at maximum 450 mm centres.

Louvre sunscreens

Installation: Fix sunscreen systems in accordance with the current written recommendations and instructions of the manufacturer or supplier.

Proprietary systems or products

Product fixing: Fix proprietary systems to the manufacturer's recommendations.

Document control joints, flashings at windows and abutments, and penetrations to the manufacturer's or supplier's recommendations.

3.3 COLORBOND® STEEL AND ZINCALUME® STEEL CLADDING

Installation

Fixing start location: [complete/delete]

Note the elevation that will allow fixing to proceed from leeward to the windward of prevailing wind.

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

Ground clearance: Maintain documented clearance.

Cutting sheets: Wherever possible, factory cut to length. Do not use an abrasion disc.

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

Expansion joints: [complete/delete]

Expansion joints should be provided every 35 m in sheet length for walls with concealed fixings and 24 m in sheet length for walls with exposed fixings.

3.4 SEAMED SHEET METAL CLADDING

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: Adhesive and nail.
- Steel: Metal coated self-drilling/tapping screws with the heads finishing below the surface.

Control joints: 12 mm gap at abutting building elements.

Fabrication

Requirement: Factory fabricate cladding trays.

Minimum bending radius: 1.75 mm.

Fixing

Requirement: Fix pans to the sheeting with concealed clips at 250 mm maximum centres or to the manufacturer's recommendations.

Seams

Walls: Single angle standing seams.

3.5 COMPLETION

Cleaning

Requirement: Remove excess debris, metal swarf, solder, sealants and unused materials.

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

Damaged materials: Replace materials that have been damaged or degraded.

Warranties

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

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

Use only where 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, require the signatures of both manufacturer and installer. BlueScope has an internet based system Warranty Estimator and Management System that allows access to warranty advice for BlueScope building products and pre-approved warranties at www.warranties.bluescopesteel.com.au/site/.

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

4 SELECTIONS

Schedules are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

4.1 PRODUCT SCHEDULES

COLORBOND® steel and ZINCALUME® steel profiled sheet metal cladding schedule

Property	A	B	C
Profile			
Material type			
Thickness (mm)			
Colour			
Trims			
Flashing and cappings			
Fasteners			

A, B, C: These designate each instance or type or location of the item scheduled.

Edit codes in the **Schedule** to match those on drawings.

Profile: Select cladding product manufactured from COLORBOND® steel and ZINCALUME® steel by visiting www.steel.com.au/products.

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

- Benign: COLORBOND® steel, COLORBOND® Metallic steel or ZINCALUME® steel.
- Moderate: COLORBOND® steel.
- Severe marine: COLORBOND® Ultra steel.
- Very severe marine: COLORBOND® Stainless steel.

This is a guide only. Contact BlueScope to determine the appropriate product for the project location. Please note that a different grade of COLORBOND® steel for walling applications within the same project may be required.

Thickness: Select from:

- COLORBOND® Stainless steel: 0.42.
- COLORBOND® Ultra steel: 0.42 or 0.48.
- COLORBOND® steel or ZINCALUME® steel: 0.35, 0.42 (economical/domestic/light industrial), 0.48 (commercial / industrial).
- COLORBOND® Metallic steel: 0.48.
- Pre curved sheeting: Contact FIELDERS. (The recommended thickness varies with the extent of curve.)

Colour: Consult the COLORBOND® Colour Charts.

Trims: e.g. Proprietary accessories for sills, reveals or corner returns.

Flashings and capping types: List here or delete and refer to details.

Fasteners: e.g. Concealed or Pierced: Crest or Valley to suit the profile.

Select flashing components by visiting www.steel.com.au/products/building-and-construction/products/roofing-accessories.

Seamed sheet metal cladding schedule

Property	A	B	C
Product			

Property	A	B	C
Material			
Minimum thickness (mm)			
Width between seams			
Colour			
Finish			
Trims			
Control joints			
Flashing and capping type			
Fasteners			

A, B, C: These designate each instance or type or location of the item scheduled.

Edit codes in the **Schedule** to match those on drawings.

Product: Seamed sheet metal or Flat lock tiles. Tiles and panels are an alternative to seamed sheeting.

Material: e.g. Soft temper copper to AS 1566 or Titanium zinc pre weathered by pickling process.

Minimum thickness:

- Copper: 0.7 mm.
- Zinc: 0.8 mm.

Width between seams:

- Copper: 500 mm.
- Zinc: 600 mm.

Finish: e.g. Polished, Sandblast, Varnish coated, Pre-weathered.

Trims: e.g. Proprietary accessories for sills, reveals or corner returns.

Flashings and capping types: List here or delete and refer to details.

Fasteners: e.g. Concealed or Pierced: Crest or Valley to suit the profile.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1170		Structural design actions
AS/NZS 1170.2	2011	Wind actions
AS 1562		Design and installation of sheet roof and wall cladding
AS 1562.1	1992	Metal
AS/NZS 2269		Plywood - Structural
AS/NZS 2269.0	2012	Specifications
AS/NZS 2904	1995	Damp-proof courses and flashings
ASTM A240/A240M	2016	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

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

AS 1397	2011	Continuous hot-dip metallic coated steel sheet and strip - Coatings of zinc and zinc alloyed with aluminium and magnesium
AS 1449	1994	Wrought alloy steels - Stainless and heat-resisting steel plate, sheet and strip
AS 1566	1997	Copper and copper alloys - Rolled flat products
AS/NZS 1734	1997	Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate
AS/NZS 2728	2013	Prefinished/prepainted sheet metal products for interior/exterior building applications - Performance requirements
AS 3959	2009	Construction of buildings in bushfire prone areas
AS 5113	2016	Fire propagation testing and classification of external walls of buildings
ABCB Advisory Note 3	2016	Fire performance of external walls and cladding
BCA Section C	2016	Fire Resistance
BlueScope TB-01B	2013	Steel walling products - Selection guide
NATSPEC DES 010	2009	Atmospheric corrosivity categories for ferrous products
NATSPEC DES 018	2008	Bushfire protection
NATSPEC DES 031	2014	Specifying R-Values
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2016	Specifying ESD