

## 0436P LYSAGHT CLADDING – IN PROFILED AND SEAMED SHEET METAL

### Branded worksection

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### Worksection abstract

This branded worksection *Template* is applicable to lightweight external wall cladding of LYSAGHT profiled and seamed 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](http://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 for subframing.*
- *0382 Light timber framing for subframing.*
- *0423p LYSAGHT roofing – in profiled sheet metal.*
- *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 barriers.*
- *0511 Lining for internal lightweight lining.*
- *0531 Suspended ceilings – combined for suspended soffits.*

### Material not provided by LYSAGHT

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.
- For flush jointed fibre cement soffit lining, import the relevant material from *0511 Lining*.
- Document the structural support system to your office documentation policy.

If required, state the minimum added thermal resistance (R-Value) (m<sup>2</sup> 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.
- Check lead time for imported selections and consider adding a requirement, in **SUBMISSIONS**, for the builder to confirm availability.

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](http://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**

LYSAGHT has a proven track record supplying quality steel roofing, walling, rainwater, fencing, home improvement and structural products. Made from 100% Australian steel, our products are extensively performance-tested, come with a BlueScope warranty, and offer our customers confidence and peace of mind.

Our quality products are only part of our unique offer - our commitment to genuine, helpful customer service, and unmatched technical support and expertise has helped us become the trusted experience in steel.

**1.1 RESPONSIBILITIES****General**

Requirement: Provide LYSAGHT lightweight external wall cladding and associated work, as documented.

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

**Location exposure severity**

Exposure severity determines the grade of Colorbond® steel and Zinalume® steel. Refer to BlueScope TB-01B guide on selecting steel cladding products. Delete if not using profiled steel cladding.

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

**1.2 COMPANY CONTACTS****LYSAGHT technical contacts**

Website: [professionals.lysaght.com/contact-us](https://professionals.lysaght.com/contact-us)

**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: [professionals.lysaght.com/resources/manuals](https://professionals.lysaght.com/resources/manuals)

## 1.5 TOLERANCES

### Permitted deviations

Profiled metal sheet cladding: 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 pressure.
- Metal roofing in cyclonic regions to AS/NZS 1170.2: Cladding and fastenings to AS 1562.1 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**.

### 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

General: Submit names and contact details of proposed suppliers and installers.

Evidence of experience: [complete/delete]

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

Seamed sheet metal cladding: Submit evidence of experience with non-ferrous cladding installation.

Check conditions of warranty.

### Warranties

Requirement: Submit the following:

- [complete/delete]

Describe the requirements of warranties in **PRODUCTS** or **EXECUTION**, as appropriate, and list the submissions required here. e.g. Interlocking warranty for sealant type and application.

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 products: Conform to **PRODUCTS, GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* 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 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 cladding material.

**Components**

Flashings: To AS/NZS 2904.

Coordinate with 0421 Roofing – combined.

**LYSAGHT fasteners**

Type, size, corrosion resistance class and spacing: To LYSAGHT recommendations.

Refer to LYSAGHT® Roofing and walling installation manual and BlueScope TB-16 guide on selecting fasteners for roofing and walling.

**Permalite fasteners**

Type, size, corrosion resistance class and spacing: To Permalite recommendations.

Refer to Permalite® Aluminium Roofing Solutions manual. For work in cyclone areas of the Northern Territory conformance with the *NT Deemed to comply manual* will be required. Cyclone washers must be used unless evidence is produced to prove they are not required.

**2.2 LYSAGHT PROFILED SHEET METAL****General**

Proprietary steel cladding: LYSAGHT steel cladding.

Proprietary aluminium cladding: Permalite aluminium 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 **LYSAGHT profiled steel cladding schedule** and **Permalite profiled aluminium cladding schedule**.

**2.3 SEAMED SHEET METAL****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.

**Underlayer**

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

**Separation layer**

Requirement: 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: Provide starter clips, fixing clips and fastenings as recommended by the cladding system supplier.

### 3 EXECUTION

#### 3.1 PREPARATION

##### Substrates or framing

Requirement: 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, or as documented.

Corner flashing for profiled and seamed metal sheets: 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.

#### 3.3 PROFILED SHEET METAL CLADDING

##### Installation

LYSAGHT steel roofing: To the manufacturer's recommendations.

Refer to the LYSAGHT Roofing and walling installation manual.

Permalite aluminium roofing: To the manufacturer's recommendations.

Refer to the Permalite Aluminium roofing solutions manual.

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 and locate centrally over framing members.

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

Fixing: 300 mm centres to each support:

- Timber: 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.

Detail the assembly to provide a 25 mm air gap between the plywood and insulation.

#### **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 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 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 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, 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.bluescopesteel.com.au/warranties](http://www.bluescopesteel.com.au/warranties) for steel products or [permalite.com.au/tools/warranty-estimation](http://permalite.com.au/tools/warranty-estimation) for aluminium products.

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**

#### **LYSAGHT profiled steel cladding schedule**

<b>Property</b>	<b>A</b>	<b>B</b>	<b>C</b>
Profile			
Material type			
Thickness (mm)			
Colour			
Trims			
Control joints			
Flashings 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 from the following for concealed fixed cladding:

- LYSAGHT Klip-Lok® 406.
- LYSAGHT Klip-Lok® 700 Hi-strength.
- LYSAGHT Klip-Lok® Classic 700.
- LYSAGHT Longline 305®.
- LYSAGHT Easyclad®.

Select from the following for screw crest fixed cladding:

- LYSAGHT Custom Orb®.
- LYSAGHT Custom Orb Blue®.
- LYSAGHT Custom Orb Accent® 21.
- LYSAGHT Custom Orb Accent® 35.
- LYSAGHT Integrity® 820.
- LYSAGHT Spandek®.
- LYSAGHT Spanrib®.
- LYSAGHT Trimdek®.

Select from the following for screw pan/valley fixed cladding:

- LYSAGHT Mini Orb®.
- LYSAGHT Multiclad®.
- LYSAGHT Panelrib®.
- LYSAGHT Trimwall®.
- LYSAGHT Wallclad®.

Material type: Refer to BlueScope TB-01B guide on selecting steel roofing products. Select from the following:

- COLORBOND® steel.
- COLORBOND® Coolmax steel.
- COLORBOND® Metallic steel.
- COLORBOND® Ultra steel.
- COLORBOND® Stainless steel.
- ZINCALUME® steel.

Thickness (mm): Refer to LYSAGHT product brochures. Select from the following:

- Generally: 0.42 or 0.48.
- Custom Orb Blue®: 0.60 or 0.80.
- Klip-Lok® 700 Hi-strength: 0.42, 0.48 or 0.60.
- Longline 305®: 0.70.
- Multiclad® and Panelrib®: 0.35 or 0.42.
- Trimwall® and Wallclad®: 0.35.

Colour: Consult the BlueScope COLORBOND® Colour Chart.

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

Flashings and cappings: e.g. Prefinished steel to match cladding colour. Coordinate with the 0421 Roofing – combined worksection.

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

#### Permalite profiled aluminium cladding schedule

Property	A	B	C
Profile			
Thickness (mm)			
Finish			
Colour			
Trims			
Control joints			

Property	A	B	C
Flashings 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 from the following:

- Permalite V-rib®.
- Permalite Alspan®.
- Permalite Waveline®.
- Permalite LT7®.

Thickness (mm): Refer to Permalite product brochures. Select from the following:

- Generally: 0.70, 0.90 or 1.20.
- Waveline®: 0.70 or 0.90.

Finish: Refer to Permalite product brochures. Select from the following:

- Mill finish.
- Stucco finish.
- Paint finish.

Colour: Consult the Permalite Colour Chart.

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

Flashings and cappings: e.g. Prefinished aluminium to match cladding colour. Coordinate with the 0421 Roofing – combined worksection.

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

#### Seamed sheet metal cladding schedule

Property	A	B	C
Product			
Material			
Minimum thickness (mm)			
Width between seams			
Colour			
Finish			
Trims			
Control joints			
Flashings 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.

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 cappings: e.g. Prefinished sheet metal to match cladding colour. Coordinate with the *0421 Roofing – combined* worksection.

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

#### 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-16	2013	Fasteners for Roofing and Walling Products - Selection Guide
BlueScope TB-01B	2013	Steel walling products - Selection guide
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