Metalcraft Insulated Panels

DESIGN & INSTALL GUIDE

THERMOSPAN | THERMOPANEL
ASPIRESPAN® | ASPIREPANEL®

CodeMark CERTIFIED

VERSION 1.0 MAY 2025


RANGER

CONTENTS

GENERAL

This document is intended for designers and installers to ensure that products manufactured by Metalcraft Insulated Panels are specified and installed correctly.
This document is a guidance document only and relates to the fabrication, supply and installation of installation panels. It is important that all construction professionals have ready access to our up-to date technical documentation. We would urge all interested parties to access our website for all recent relevant technical information to avoid any potential issues with specifying, installing, handling or maintenance Metalcraft panel products.

SUPPORTING INFORMATION

This document must be read in conjunction with Metalcraft Insulated Panels product literature and all supporting engineering and testing documentation.

www.metalcraftinsulatedpanels.co.nz

RELATED DOCUMENTS

- AS/NZS 1170- Structural Design Actions
- NZS 3604: 2011 Timber Framed Buildings
- NZS 3404: 2009 Steel Structures Standard
- NZS 4211: 2008 Specification for performance windows
- AS 1397: Steel Sheet and strip-hot-dipped,zinc coated and aluminium/zinc-coated
- AS 3715: Metal Finishing - Thermoset powder coatings for Architectural applications
- BS EN 10326 Continuously hot-dip coated strip and sheet of structural steel

USE OF METALCRAFT INSULATED PANELS

Metal faced insulated core panels are manufactured for use as finished roof and wall cladding systems.

The Metalcraft Insulated Panel System may be used as a structural panel system or non-load bearing system where it is fixed to a primary structural frame. When used as a structural panel system the Designer, Architect, Engineer must design in accordance with the Engineering Documentation, this is available for download from:

www.metalcraftinsulatedpanels.co.nz

The Metalcraft Insulated Panel System must be installed using ancillary products supplied with the system.

The Metalcraft Insulated Panels are branded as:

- ThermoPanel (EPS)
- ThermoSpan (EPS)
- AspirePanel® (PIR)
- AspireSpan®(PIR)

COMPLIANCE WITH THE NEW ZEALAND BUILDING CODE (NZBC)

Where the Metalcraft Insulated Panel System is designed, installed and maintained in accordance with the conditions of CodeMark Certificate:

- CodeMark (GM-CM30078) for ThermoSpan and ThermoPanel Insulated EPS Panels.
- CodeMark (CMNZ30150) for AspireSpan and AspirePanel Insulated PIR Panels.

The panel system will comply or contribute to compliance with the NZ Building Code.

METALCRAFT CODEMARK EXPLAINED

Metalcraft Insulated Panels is the certificate holder of:

- CodeMark (GM-CM30078) for ThermoSpan and ThermoPanel Insulated EPS Panels.
- CodeMark (CMNZ30150) for AspireSpan® and AspirePanel® Insulated PIR Panels.

CodeMark is a third party certification, allowed for under the Building Act 2004. This means that under law, a Building Consent Authority must accept the specification of the above mentioned, Metalcraft Insulated Panels (the panel and the installation details) as complying with the NZ Building Code, providing that all conditions of the certificate have been met.

Achieving CodeMark also focuses on the manufacturing quality of Metalcraft Insulated Panels and the competence of the support provided by Metalcraft Insulated Panels. This means that designers and installers can use Metalcraft Insulated Panels products with confidence that, providing all instructions are followed, will result in building work complying with the NZ Building Code.

Refer - MBIE, Product Performance
https://www.building.govt.nz/building-code compliance/product-assurance-and multiproof/

SCOPE OF USE

Metalcraft Insulated Panels, panel systems are certified for use as a fully finished internal/ external wall system within the following scope:

- The Metalcraft Insulated Panel System must be specified and designed in accordance with all Metalcraft Insulated Panel System technical documentation and supporting engineering and testing documentation and as per cited on the Codemark Certificates. Refer on-line www.metalcraftinsulatedpanels.co.nz for current versions.
- In new buildings and where the Metalcraft Insulated Panel Systems are to be load bearing.
- In new buildings and where Metalcraft Insulated Panel Systems are to be used as non-load bearing.
- Sub-floor and flooring structure (concrete, steel or timber) that comply with the NZ Building Code.
- A timber or steel framed structure that complies with the NZ Building Code.
- Existing buildings where the designer and installer are satisfied that the existing building is adequate for the intended building work.
- Joinery that complies with NZS4211:2008.
- A maximum building height of 10 m no closer than 1.0m to the relevant boundary.

LIMITATIONS

SITE CONDITIONS

1. The designer must consider the location regarding corrosion and environmental zones. The correct surface coating selection must be specified by the designer to ensure the long term performance of the Metalcraft Insulated Panel Systems. The designer may refer to Metalcraft Insulated Panels for technical assistance.
2. The designer must consider the roofing profile in relation to roof slope to ensure that water can shed and allowance is made for snow loads in alpine conditions.
3. Metalcraft Insulated Panels can be used in wind zones up to and including extra high as defined in NZS 3604: 2011, section 5 and in SED zones up to the limitations of the span tables and supporting engineering documentation.
4. For wall cladding Metalcraft Insulated Panels have been tested to a wind pressure of 2.5kPa ULS where the design parameters exceed 2.5kPa specific design calculations in support of the proposed design will be required.
5. The designer must consider building location, proximity to relevant boundary and spread of flame. Refer to relevant Branz fire test reports for specific installation requirements and to establish scope and limitations of use with regards to fire performance. A Fire Engineer should sign off the use of Metalcraft Insulated panels with regards to fire performance and location of use.
6. Where the Metalcraft Insulated Panel System is to be used in a micro climate (as defined in clause 4.2.2, NZS3604:2011) Metalcraft Insulated Panels must be consulted for technical advice.

APPLICATION OPTIONS

Metalcraft Insulated Panels are suitable for a broad range of application options. Not all of these options are specifically covered within this installation guide. Refer to Metalcraft Insulated Panels for guidance and scope and limitations of use for a specific application.

IMPORTANT
Always refer to the Project's Building Consent details to confirm the specified panel applications and any specific installation requirements which may vary from the information in this installation guide.

EXTERIOR WALLS

Installation Guidance Notes for exterior walls is included within this document and reference should be made to all relevant Metalcraft Insulated Panel technical product literature, Engineering documents and consented documentation.

INTERIOR WALLS (PARTITIONS)

The installation of the panels for the construction of interior walls or partitions is similar to the installation of exterior walls as shown in this guide, with exception of the base framing and flashing which may vary from the details in this guide.

CAUTION:
Because of the interference of interior overhead construction, the installation of interior walls may require different panel handling and lifting procedures than shown in this installation guide, Refer Metalcraft Insulated Panels.

VERTICAL PANELS

The wall panels may be specified to be vertically oriented. Vertical oriented wall panels are set standing up on one end and joined side-by-side to construct the wall. The vertical panels are attached to horizontal framing members. The information in this installation guide and Installation Details provides guidance on how panels are installed in a vertical orientation.

ARCHITECTURAL FLAT PANELS

For architectural wall applications, the panels may be specified with a flat (no profile) exterior face. The installation of Architectural Flat wall panels is the same as the installation of exterior walls as shown in the guide, with the exception that the wall framing tolerances and panel handling requirements are more critical to avoid visible distortion of the panel face.

Insulated Panels can be supplied with different finish types, please refer to:

www.metalcraftinsulatedpanels.co.nz

PARAPET WALLS

The installation of panels which are extended to provide a parapet is similar to the installation of exterior walls as shown in this installation guide, with the exception that different head framing and flashing may be required. Refer to Installation Details and Building Consent documentation.

COLD STORAGE

The installation of panels for cold storage applications is generally similar to that for non-cold storage applications. However, cold storage installations may require different perimeter flashing assemblies to ensure more effective vapour control and continuous insulation.

This guide provides examples of typical flashing assemblies used in both cold storage and non-cold storage installations.

NOTE: The details that relate to cold room construction are specific to this form of construction.

STRUCTURAL PANEL WALL BRACING

Metalcraft Insulated Panels can be used as a structural bracing panel in most forms of construction. Bracing values can be assigned to the panels and reference should be made to Engineering supporting information, available to download from:

www.metalcraftinsulatedpanels.co.nz.

DESIGN REQUIREMENTS

RESTRICTED BUILDING WORK

In some applications Restricted Building Work (RBW) provisions will apply. It is the responsibility of the Designer and Installer to ensure that they have met their obligations under these provisions.

DESIGNER/INSTALLER SKILL

Where Metalcraft Insulated Panels are specified and /or installed the Designer/ Installer should have the appropriate skills, knowledge of the product and access to all Metalcraft Insulated Panels technical information, downloadable from:

www.metalcraftinsulatedpanels.co.nz

Where a Codemark Certificate is to be submitted with a Building Consent application, a signed declaration that the building work falls within the scope of this certificate and that all conditions of the certificate have been met must be submitted.
The person signing this declaration must either have the appropriate Licensed Building Practitioner design license class for the building that is the subject of the building consent or be a Registered Architect or a Chartered Professional Engineer.
They must also have ready access to all applicable and the latest technical documentation, downloadable from:

www.metalcraftinsulatedpanels.co.nz

FINISHING & ADVICE

Metalcraft Insulated Panels are dispatched from the factory with a plastic protective film. Once removed no additional surface finishing is required.

The surface coating applied to Metalcraft Insulated Panels by NZ Steel is a high quality durable surface coating that provided the coating is not scratched or damaged, will require no additional work.

It is recommended that all/any flashings required for weatherproofing or finishing should be specified at the time of design. Flashing material in accordance with E2/AS1 and /or the NZMRM Code of Practice.

MINIMUM PITCH

Roof pitches will vary depending on the site conditions, loads, purpose, configuration, snow loading and span requirements.
Buildings designed with widely spaced purlins and portal frames may require a frame pitch increase of 1 or 2 degrees.

Min. roof slope of 3 degree applies

WARRANTY AND MAINTENANCE

All colours are warranted except for Ebony.

REFER
Metalcraft Insulated Panels, Warranty General Terms and Conditions

www.metalcraftinsulatedpanels.co.nz

COLORSTEEL®

DESIGN REQUIREMENTS

WINDOW AND DOORS

DOORS
Insulated doors fitted with food safe composite plastic hinges and handles (supplied by Metalcraft).

WINDOWS
Aluminium windows and doors complying with NZS4211 & NZS 3504. Use only accessories approved and supplied by Metalcraft Insulated Panels.
All attachments and fasteners to be compatible with the other elements of the panel system.

SURFACE CONDITIONS

Insulated panels should not be specified where the service temperatures exceed 80°C.
If the temperatures exceed this, the structural integrity of the panel can rapidly deteriorate.
To reduce thermal bowing movement Metalcraft Insulated Panels recommends the use of light to medium colours on walls and roofs exposed to direct sunlight. The use of dark colours in these situations is not recommended.

LOADSPAN GRAPHS

In New Zealand, one of the key considerations in the structural design of commercial walling systems is wind pressure, which acts both inward and outward on building surfaces. The intensity of this pressure depends on factors such as the building's location, prevailing wind direction, and the geometry and permeability of the structure.

Typically, external walls are subject to significantly higher wind loads compared to internal walls. Wind loads on commercial buildings in New Zealand are determined in accordance with NZS 1170.2, which factors in Wind Zone classification, Terrain Category, building height, shielding from surrounding structures, topographic effects, orientation, and aerodynamic shape.

Depending on the location and building use, additional loading conditions such as seismic, snow, and dynamic loads may also need to be considered.

Both Serviceability Limit State (SLS) and Ultimate Limit State (ULS) requirements must be addressed, with the specific criteria depending on the Importance Level of the structure and the serviceability expectations of its intended use.

Refer: Metalcraft Insulated Panels, Loadspan Tables and Product Information for scope and limitations of use.
www.metalcraftinsulatedpanels.co.nz

THERMAL REQUIREMENTS

To ensure compliance with New Zealand's H1 Energy Efficiency requirements under the NZ Building Code (NZBC), both residential and commercial buildings must be designed with thermal performance in mind from the early stages of project development. By applying proven principles of energy-efficient design and selecting the appropriate combination of panel thickness, steel facer colour, insulation core material, span range, and panel length, long-term energy savings can be optimised to meet or exceed the NZBC H1 performance criteria across all climate zones.

For buildings that include wall-glazing systems, the Total System R-value must comply with the minimum requirements set out in Clause H1 Energy Efficiency of the NZ Building Code, as detailed in the Acceptable Solutions H1/AS1 (for housing, communal residential, and communal non-residential buildings) and H1/AS2 (for commercial buildings).

Refer: Metalcraft Insulated Panels, Loadspan Tables and Product Guide for thermal performance.

www.metalcraftinsulatedpanels.co.nz

THERMAL BREAKS

If thermal breaks are required these can be cut into the panel on site. The Designer must ensure that the thermal cuts are in accordance with Metalcraft Insulated Panels Installation details.

NOTE:
When using thermal breaks with a cantilevered roof panel, the max length of the cantilever is 800mm max. and staggered fixings are required in accordance with Metalcraft Installation Details.

www.metalcraftinsulatedpanels.co.nz

SUSPENDED CEILING

Suspended ceilings can be incorporated within the scope and limitation of the Redco Engineering Report, which is downloadable from:

www.metalcraftinsulatedpanels.co.nz

DESIGN REQUIREMENTS

CUTBACKS

Metalcraft Insulated Panels can have cutbacks of a minimum of 50mm and then at 25mm increments, to a maximum cutback of 225mm.

CANTILEVERS

For information on maximum cantilevers refer to loadspan tables.

NOTE:
When using thermal breaks with a cantilevered roof panel, the max. length of the cantilever is 800mm max. and staggered fixings are required in accordance with Metalcraft Installation Details.

www.metalcraftinsulatedpanels.co.nz

LOAD SPREADING WASHERS

Metalcraft Insulated Panels are installed using load spreading washers.

LOAD SPREADING WASHER TYPE:
BP9082 for ThermosSpan and AspireSpan
LT07 for MetecnoSpan.

Please consult Metalcraft Insulated Panels for more information.

FIRE PERFORMANCE

In New Zealand, all buildings must comply with the NZ Building Code (NZBC), with Clause C3 specifically addressing protection from fire spreading beyond its source. The level of fire resistance required depends on the building's use, risk group, and number of storeys.

For buildings using insulated wall panels like those from Metalcraft Insulated Panels, key compliance considerations under Clause C3 include:

INTERNAL LININGS:
Panels must meet Group Number classifications based on their contribution to fire growth under ISO 9705 testing. Refer to Branz test reports for classification.

EXTERNAL CLADDING:
Panels must meet external spread-of-fire requirements, with testing to AS 5113 or ISO 5660 where relevant.

LARGE SCALE FIRE TESTING:
Large-scale fire testing in New Zealand is vital for assessing how building materials and systems perform under realistic fire conditions. Refer to Branz test reports for classification.

Refer to Metalcraft Insulated Panels and the relevant Branz test reports in conjunction with MBIE's NZBC Clause C3 resources.

INSTALLATION GUIDE

INSTALLATION GENERAL

INSTALLING PANELS

All building work must be carried out by competent, experienced installers. The installers must have knowledge of the Metalcraft Insulated Panel systems, construction methods.

Install panels in accordance with the consent drawings, stated design parameters and Metalcraft product Literature.

Consult and coordinate as necessary with installers of adjoining work, including door installations. Installation of the panel system must comply with NZBC E2/AS1.

PANEL JOINT

Metalcraft Insulated Panels, comprise of male/female joints facilitating rapid and accurate panel installation. The joint accepts butyl tape and sealants applied internally, refer to Metalcraft Insulated Panels installation details.

When fire performance is required then specific joint details are required, refer to Metalcraft Insulated Panels and the relevant Branz fire test reports and installation details.

When a vapour barrier is required, typically for chillers and freezer applications, the internal joints can also have sealant applied.

TOLERANCES

- Thickness ±1mm
- Width ±1mm
- Length ± 5mm

SEALING

Do not use metal implements for applying or tooling sealant. Extrude sealant into the joint, ensuring that all air is excluded.

Tool the surface and remove any excess.
All sealant joints to finish flush or slightly concave.

PENETRATIONS

Penetrations to be in accordance with Metalcraft Insulated Panels installation details.

TOUCH UP PAINT

New Zealand Steel does not recommend the use of touch-up paint on any of its COLORSTEEL® products.

Minor surface scratches are best left alone. They become less noticeable as the coating weathers and do not affect the corrosion inhibiting properties of the material. Consult Metalcraft Insulated Panels.

PROTECTION

Avoid distortion of panels or assembly components and accessory components during transit, handling and storage.

Prevent pre-finished surfaces from rubbing together. Prevent contact with mud, plaster and cement, or with dissimilar metals.

If panels are to be stored on site for extended period of time cover the packs to protect from weather.

ADHESIVE TAPES

Do not use adhesive tape, film, paper, sprayed protective coatings or masking tape, which might become bonded after exposure to sun or weather.

Remove any temporary protection after installation. Remove any protective coating residues immediately.

GALVANIC CORROSION

Avoid run-off from any copper or brass systems or unpainted lead flashings.

Electrically isolate any large areas of stainless steel from the panel surface. Where dissimilar materials might be in contact, provide a separation barrier.

INSTALLATION GENERAL

SEALANTS

Only neutral cure sealants approved by Metalcraft Insulated Panels shall be used. All contact surfaces must be clean, dry and free from dust, oil or other contaminants prior to application.

Sealants shall be applied strictly in accordance with the sealant manufacturer's instructions and must be fully compatible with COLORSTEEL® and other adjoining materials.

Sealant application must only occur after all panels and trims have been accurately positioned and prepared for installation.

Sealants are required where specified in the Metalcraft Insulated Panels Installation Details. Additional sealant application may be necessary where the sealant functions as a vapour barrier or is required to achieve specific fire performance criteria.

Excess sealant must be removed immediately to ensure a clean and functional finish.

FIXINGS

Consideration should be given to the proper selection of fasteners with respect to the anticipated application and working environment.
Aluminium rivets should be used dependant on project specifications.
Fasteners to be checked and adjusted if necessary, to ensure they are weather tight and external panel facing is not distorted.
For more information, refer to Metalcraft Insulated Panels.

FLASHINGS

Flashings used with insulated panels may be manufactured from either aluminium or steel, depending on the specific application and performance requirements.

Where fire performance is a requirement, steel flashings must be used in conjunction with specified fixings and fixing centres appropriate to the fire rating criteria.

For detailed guidance, refer to Metalcraft Insulated Panels documentation, relevant BRANZ fire test reports, and associated installation details.

SWARF

Swarf consists of steel debris generated during the cutting, drilling or fastening of external steel skins, flashings, angles, supports, rivets, screws, washers or nuts. If not removed, swarf particles can oxidise and lead to corrosion, resulting in rust staining on the surface of the panels.

NOTE:
It is the responsibility of the installer to ensure all swarf is promptly and thoroughly removed to prevent surface damage and staining.

For additional information, refer to Metalcraft Insulated Panels.

CLEAN UP AND MAINTENANCE

Ensure all metal filings (swarf) are swept off and disposed of into bins as you install each sheet. These filings can leave unsightly stains on the surface of the sheet and also on floor tiles/pavers, etc, in the near vicinity.

Intermittent cleaning of all surfaces not washed by regular rainfall will prolong the life of the products and keep them looking their best. A mild detergent solution is recommended ensuring the surfaces are always wiped off with clean water afterwards. Hosing of the ceiling is to be avoided as it will cause water to sit inside panel joins and flashings leading to possible corrosion.

- Future maintenance is recommended Roof check once a year.
- Wash if prone to lichen growth.
- 6 Monthly washing of unwashed areas like soffits and gutters.

For more information on care and maintenance, refer to Care and Maintenance Guide on:
www.metalcraftinsualatedpanels.co.nz

INSTALLATION GENERAL

CUTTING PANELS

CORNER TYPE
Refer to the installation drawings for the type of corner condition (mitered or lapped).

CORNER PANEL WIDTH
Determine the corner panel width.

CORNER PANEL LAYOUT
Lay the panel on appropriate blocking or saw horses with the interior face turned up and the panel edges correctly oriented to the panel's intended position on the building.

On the panel's interior face, lay out the panel's cut width. Mark the cut line with a chalk line.

CAUTION: Be sure to allow for the extra panel width required for the bevel or lapped corner conditions.

CUTTING THE CORNER PANEL:
Set the saw blade angle for the required square cut or miter cut and cut the panel along the chalk line.

FREEZERS AND CHILLERS

Freezers and commercial chillers must be constructed with Consented Drawing, which must be strictly followed throughout the installation process. Key elements such as heated underflooring, ventilation and the design of windows and doors are critical to ensuring the efficient operation of these systems.

Care should be given on sealing all external joints, base and the tops of all panels. The external vapour seal is very important part of the chiller / freezer built up system. Use only approved fixings (screws, bolts and rivets), sealants when installing Insulated panels.

Due to the complexity and technical requirements involved, only approved installers with extensive experience and expertise in this type of installation should undertake the work.

THERMAL BREAKS

For cold storage applications, a thermal break cut may be required along the vertical edge of the corner panel and a thermal break cut may be required along the bottom edge of all the panels. Refer to Metalcraft Insulated Panels for Thermal cuts.

THERMAL BREAK LAYOUT
Lay out the thermal break location on the panel's interior face and mark the cut line with a chalk line.

CUTTING THE THERMAL BREAKS
Set the saw for a 20mm cut depth and saw the cut along the chalk line mark.
Extreme care must be taken when handling the panel after the thermal break is created as the end of the panel is weakened.

TOOLS & EQUIPMENT

PERSONAL PROTECTIVE EQUIPMENT

- Long sleeves & pants
- Cut resistance level 5 gloves
- Eye protection
- Hearing Protection
- Enclosed footwear

GENERAL TOOLS

- Saw Horse Stools (Padded)
- Rivet gun
- Multi-purpose step ladders
- RH & LH Hand Tin snips
- Spirit Level
- Chalk Line
- Roof Screw Gun with Hex Head Adapters 5/32" R 14g Tek Adaptor
- Turn-Up/Down Tool (See Metalcraft Insulated Panels®)
- Plastic Paint Scraper
- Measuring Tape
- Towels or blankets to cover patio beams
- Shears to remove overlap (first sheet only)
- Drill
- Square

COMPONENTS

- Structure
- Roofing Panel
- Barge / Fascia / Ridge / Valley / Apron Gutter Flashings
- 5mm diameter rivet sealed
- 14g class 4 metal/timber roof screws with Profile / EPDM Washers
- Profile vermin protection and EPS-FR rib infill strip
- Butyl Tape
- Roofers neutral cure silicone

CLEAN UP

- Broom for cleaning swarf from roof
- Blower/Vacuum
- Swarf off

PACKING & DELIVERY

PACKING FOR SHIPMENT

Metalcraft Insulated Panels are packed to a maximum pack height of 1.2m with the number of panels per pack dependant on panel thickness, length and overall pack weight. The panels are manufactured with a protective film applied to the ceiling skin. The panels can be marked externally on the insulated core with the panel number and/or length, on request.

DELIVERY TO SITE

Panel packs should be secured using cargo straps spaced approximately every 2m with 600mm plastic cargo angles under the straps (refer to Figure 1A).

Long 600mm angles must be placed on top and bottom of panel pack to protect from straps. Do not overtighten straps, no depression in panel should be seen, back off on strap tension, panel skin should be flat (refer to Figure 1B).
Unloading remains the client's responsibility. For lifting panels greater than 8m in length, use of a spreader bar is recommended (refer to Figures 1C & D).

Refer to Figures 1E & 1F for recommended steps to unload panels of less than and greater than 8m in length. Panels should always be kept dry and if placed on site, stored off the ground, slightly inclined, allowing adequate drainage and ventilation of the panel pack. Allow for a laydown area on site.

TAKING DELIVERY

- Unload and handle the panels and materials in accordance with Metalcraft Insulated Panels instructions.
- Use only polystyrene or other soft packing when stacking panels.
- Store on site so that no damage will be done to the forms, materials, or finishes.
- Reject and replace goods that are damaged or will not provide the required finish.

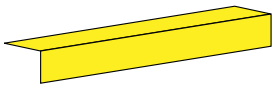


FIGURE 1A

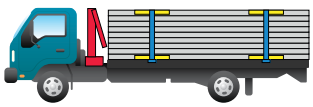


FIGURE 1B

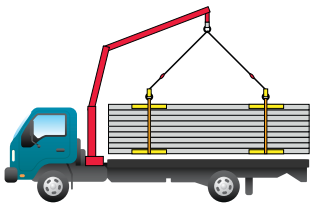


FIGURE 1C

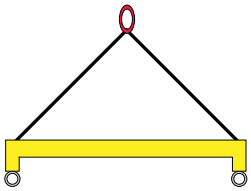


FIGURE 1D

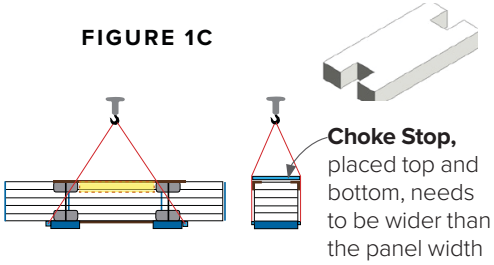


FIGURE 1E

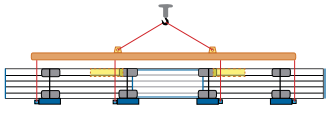


FIGURE 1F

HANDLING AND DELIVERY

SAFE PANEL HANDLING

Assess the weight of panels and ascertain if they can be handled manually.

- Use lifting equipment wherever possible for example crane, forklift, trolleys, pallet jacks, lifter & suction handling grips.
- Ensure operators are trained, competent & where applicable, licensed for operating lifting equipment.
- Always use gloves when handling panels to avoid cuts.
- Ensure adequate space is available to safely move panels and that everyone in the area is aware of all relevant safety requirements.

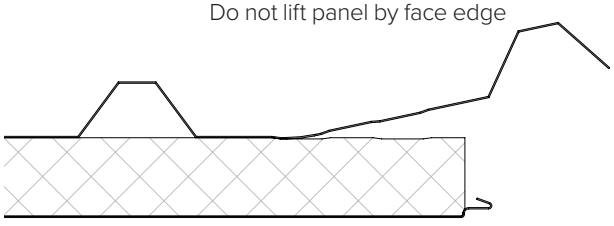
SITE STORAGE

Panels should always be kept dry and if placed on site, stored off the ground, slightly inclined, allowing adequate drainage and ventilation of the panel pack. It is also highly recommended to minimise panels being exposed to excessive weather ie. sun exposure to the protective coating especially for extended periods of time. To minimise exposure relocate or provide additional cover.

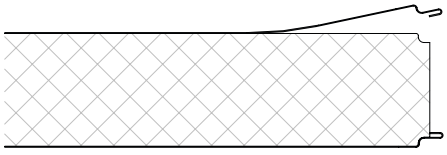
FACE SEPARATION

Do not lift the panel by the edges of the topside face. This will cause the panel's face to separate from the core. The workers must lift only on the bottom face of the panel.

Do not lift panel by face edge



Do not lift panel by face edge



SAFE PANEL HANDLING CARRYING, POSITIONING, ERECTING

CONTRACTOR'S RESPONSIBILITY

Improper handling of the panels can be hazardous to the workers and can cause damage to the panels and adjacent materials. It is recommended that the panels are always handled with appropriate lifting equipment. However when it is necessary to manually handle panels, it is the contractor's responsibility to provide adequate manpower to safely lift and carry the panels.

CAUTION:

Do not attempt to tilt up panels that are longer or heavier than the capability of the available manpower.

MANUAL HANDLING OF PANELS – SAFE WORK PRACTICES

Before lifting or installing panels, ensure a safe working environment is established and all personnel are equipped with the required personal protective equipment (PPE), including safety footwear, cut-resistant gloves, and arm guards.

Assess the panel's weight and dimensions to determine the number of trained workers needed—ideally of similar height and build—positioned evenly along each edge to lift in unison and prevent sagging or twisting.

Always keep the load close to the body, maintain a straight back, bend the knees and lift using leg muscles, avoiding twisting by moving the feet and maintaining stable footing.

Where feasible, use mechanical lifting aids such as cranes, forklifts, trolleys, pallet jacks, or suction lifters, ensuring all operators are licensed and competent.

Designate a team leader to coordinate team lifts and maintain clear communication. Ensure the travel path is clear of obstructions, and once the panel is in position, confirm it is stable and secure. Follow safe practices when using powered tools.

HANDLING AND DELIVERY

MECHANICAL LIFTING AIDS

Mechanical lifting aids should be used to prevent damage/breakage of long panels. Where multiple vertical panels are to be installed in a band, the bottom row of panels should be installed first, horizontal joints should be located at the supporting sub-structure.
Check the installation sequence and which way the male/female joint will be orientated, then determine where the first panel will be located. Ensure all required supports, accessories and flashing elements such as base & top channels, internal corner flashings and shelf angles have been installed. Measure the required dimensions of the first panel, including required rebates & corner mitres or rebates, cut to suit. It is recommended to tape foam to the top of the trestle to reduce the risk of scratches. Use appropriate tool as specified.

PROTECTIVE FILM

The protective film on the internal side of the panel must be fully removed before installation. On the external side, the film should be partially removed along the panel edges and joints prior to installation, as these areas will be difficult to access afterward. The remaining film may be left in place during installation to provide additional protection but must be completely removed once installation is complete.

REPARATION GENERAL PRECAUTIONS

When working with insulated panels and accessories, always use appropriate dust extraction equipment during cutting to minimize airborne particles. Ensure you wear suitable personal protective equipment, including hearing, eye, and respiratory protection.
To maintain a clean and safe work area, use a broom to remove swarf from the roof, and consider using a blower or vacuum for more effective debris removal.

COMPLETION

ROUTINE CLEANING
Carry out routine cleaning, including periodic removal all debris, unused and temporary materials and elements from the site.
Clean panel surfaces with soft, clean cloths and clean water and in accordance with the panel manufacturer's stated requirements.
Finish with a clean squeegee. Do not use abrasive or alkaline materials, other than a mild abrasive cream used with a soft cloth to remove minor surface marking.

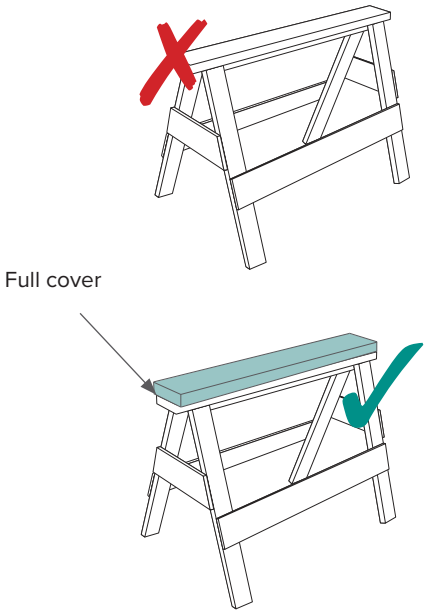
ON COMPLETION
Trade clean all panel surfaces to remove all marks, dust and dirt to enable a visual inspection of all surfaces at completion of the installation and again at contract completion.

ROOFING INSTALLATION
INSTRUCTIONS

Installation shall be carried out or supervised by someone who is experienced in installing insulated panels.
This example shows a typical installation and the insulated panel renders are indicative.
Installation renders used in this document are indicative only. For exact profile options refer to Metalcraft Insulated Panels Product and Installation guides.
www.metalcraftinsulatedpanels.co.nz

HANDY TIPS:
Prepare your carpenter's trestles (or similar work platform) by taping soft material or foam to the top of the trestles.

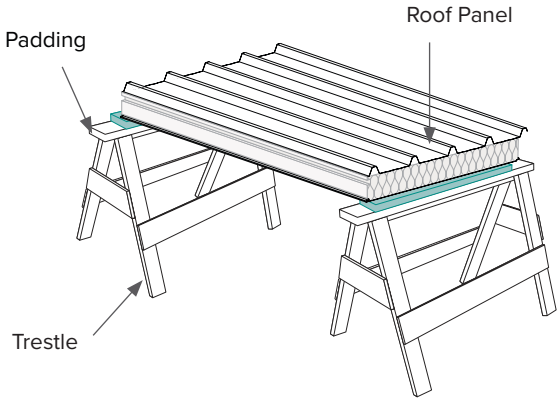
STRESS CUTS & THERMAL CUTS
Stress cuts / thermal cuts must be checked if required and cut prior to installation.



PANEL PREPARATION

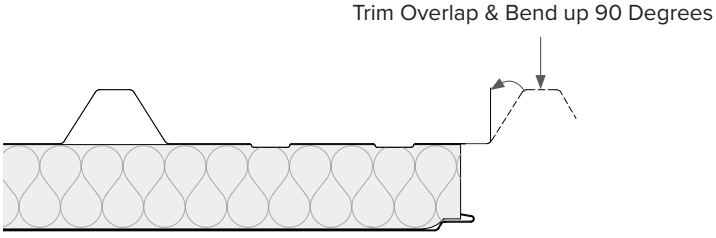
Place roofing panel on the trestles (avoid dragging the panel to eliminate damage).

TIP:
Predrill as much as possible so swarf remains on the ground and not on the roofing profile.



TRIM OVERLAP AND BEND 90°

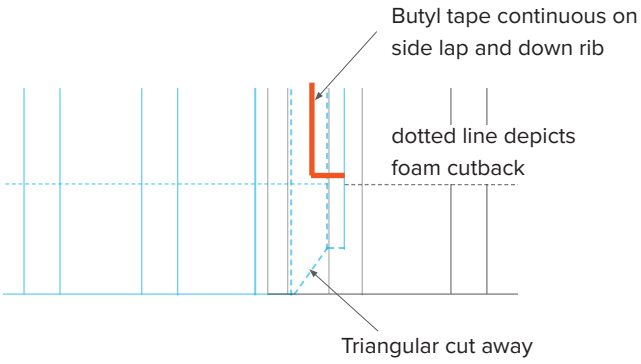
FIRST PANEL ONLY.
The first overlay rib on the first panel acts as waterproofing under the side barge/apron and should be trimmed using sheers and bend up 90 degrees as shown below.

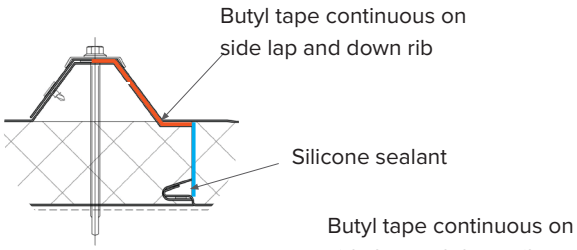


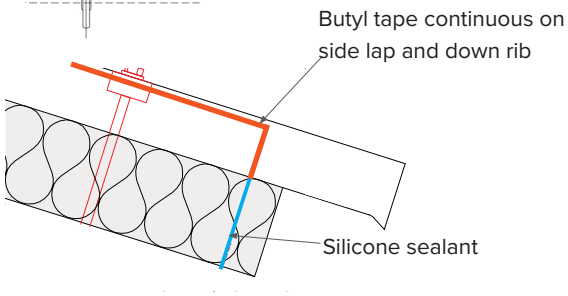
ROOFING INSTALLATION
INSTRUCTIONS

CUTBACK UNDERSHEET

Trim the overlay rib to avoid interfering with the upturned pan of the adjacent panel.

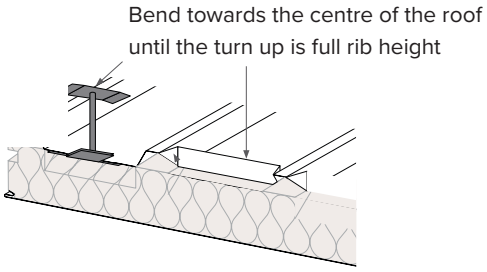






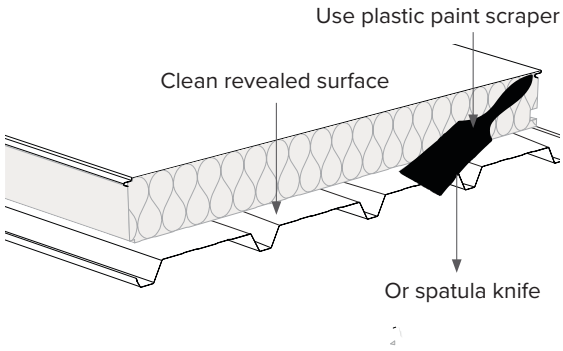
TURN UP PANS FASCIA END

Roofing panels should always have the roof pans at the top (ridge or high point of roofing panel) or house end (eaves) turned up to full rib height. It is important to ensure the pan is turned up to the full rib height for the complete width of the pan so no 'low' points exists. The Turn-up/Turn-down tool is available from your Metalcraft distributor.



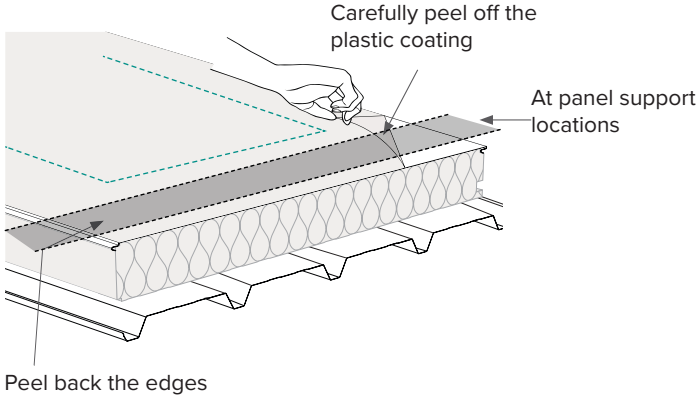
REMOVE FOAM FROM GUTTER CUTBACKS

Turn the panel over, with the external side facing down on the trestles. Remove core material from the gutter cutback end of the panel with a plastic paint scraper to ensure that the fascia flashing can be installed correctly.



PEEL BACK PLASTIC

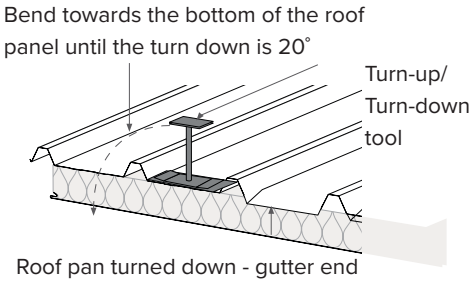
Peel back protective coating on all edges of the panel ensuring you are past the beam at the front of the patio.

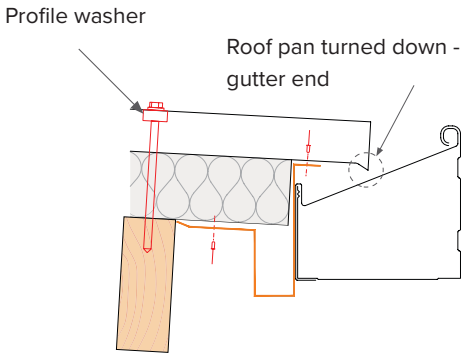


ROOFING INSTALLATION
INSTRUCTIONS

TURN UP AND TURN DOWN

Turn the panel back over and use the special Turn-down tool to turn each pan of the panel approx 20° into the gutter. Turn downs should be done while safely on the ground before installing into place. Turn up/down tools are available from Metalcraft Insulated Panels.

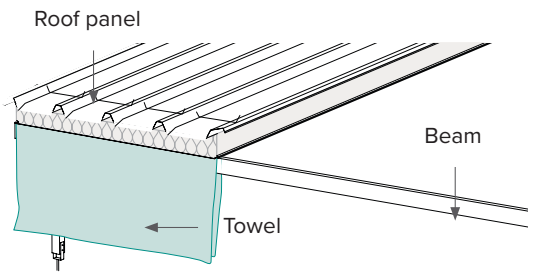




INSTALLING PANEL

Place a towel or blanket over the beams that the first panel will be in contact with. Place the cutback end (gutter or low end) on to the covered beam and then push the panel back into the rear receiver channel.

- Square off this first panel. Pin with a screw fixing in the top middle rib and with a rivet underneath receiver channel to hold it square and in place.
- Check butyl tape is on under rib

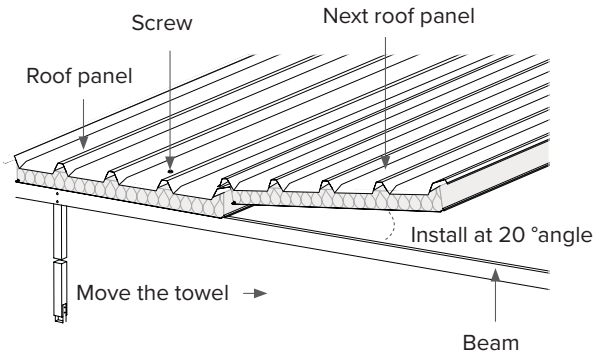


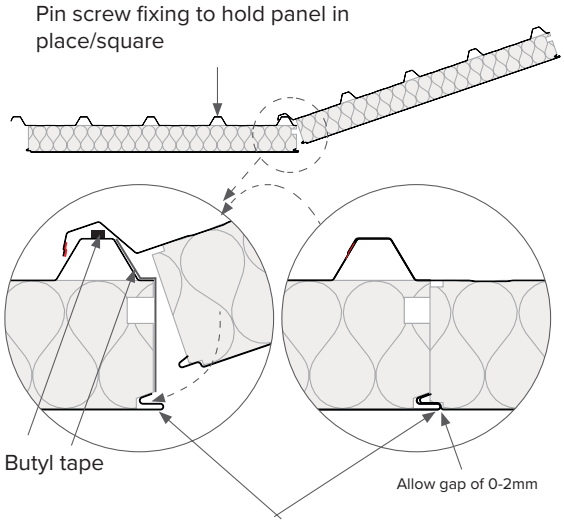
Check that the install against the building is square

INSTALLING PANEL

To install the second panel, place the overlay flap of the roof skin over the previously fitted panel and with the panel at approx 20° pull it down and engage the male interlock into the female interlock.

Check bottom skin is fully engaged before installing the next panel.



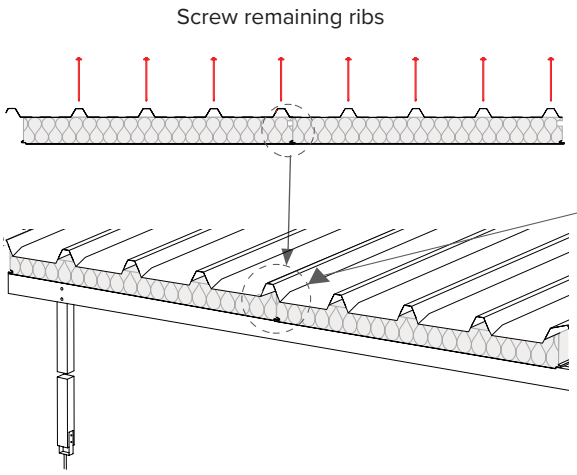


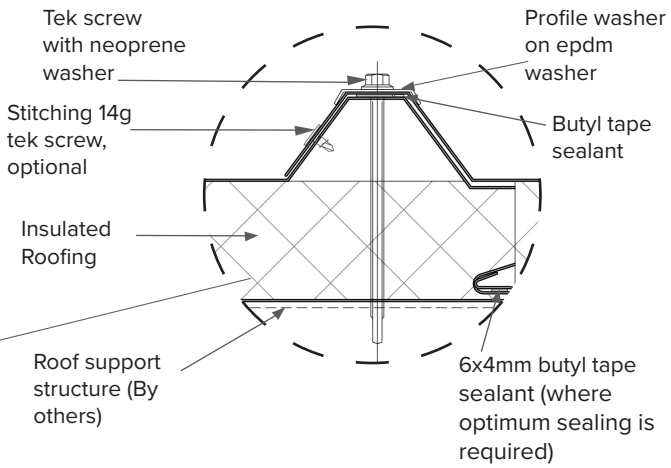
Pull it down and engage the male interlock into the female interlock of the ceiling side of the first pane.

ROOFING INSTALLATION
INSTRUCTIONS

SCREW DOWN REMAINING RIBS

Screw down the remaining ribs as per fixing recommendations





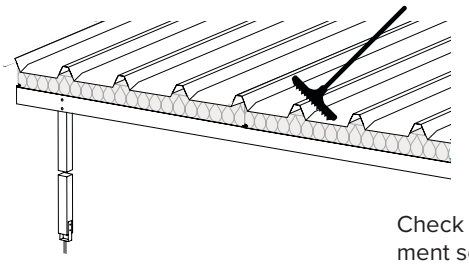
Timber fix - Type 17 14g screw MIN.40mm embedment into timber substrate.

Steel fix - 14g Steeltite screw minimum three full threads into steel structure.

CLEAN DOWN ROOF

Once roof fixings are installed use a soft broom to sweep swarf and debris off the roof surface before installing flashings.
Once flashings and gutter are installed, clean the flashings and roof using the same method. Ensure gutters are clear from swarf and debris to prevent corrosion.

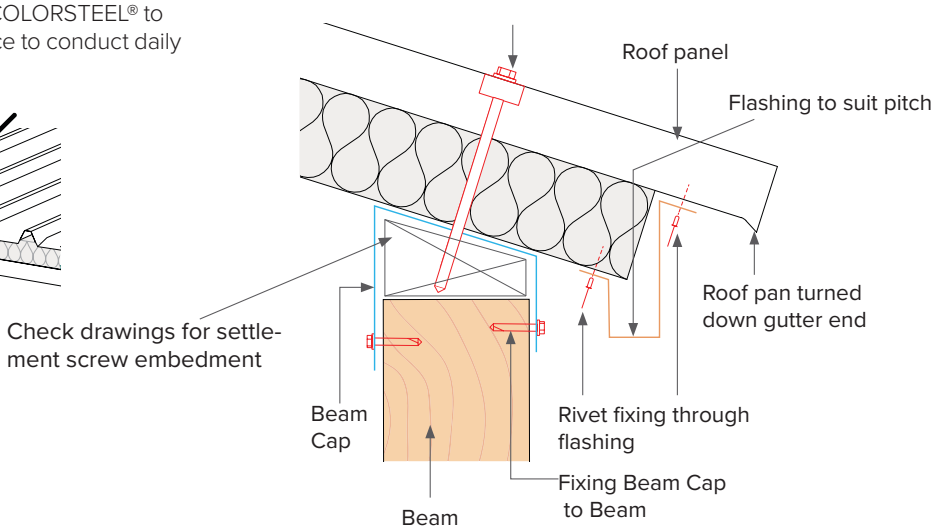
A wet microfiber cloth can be used on COLORSTEEL® to clean down any marks. It is good practice to conduct daily cleaning and washing of roof.



STEEPER PITCHES

For steeper pitches (> 7°) a beam cap will be required.

Roof screw fixing through panel into beam cap with Profile/Epdm washer



GUTTERS AND DOWNPIPES

Gutter and downpipe sizes should be selected in accordance with good plumbing practice to adequately service the requirements of the additional roof area, plus handle additional water for any gutters and downpipes that were removed from the existing house roof. Refer to installation details for more information on gutters and fixing and support of gutters.

WIRING & ELECTRICAL SERVICES
INSTRUCTIONS

WARNING:
Always consult your licensed electrician for advice on details for cable installation. Ensure all services are clear of the top wall plate centre cavity where roof fixing screws will penetrate.

Roofing panels have a services duct (at least 20mm x 20mm) on the female (under lap) joining edge which accommodates a standard size conduit for electrical cables for ceiling lights and fans.

MARK ENTRY

Mark the entry location of the feed wires on the underside of the panel.

MARK EXIT

Mark the exit location of the feed wires for fittings on the underside of the panel.

DRILL UNDERSIDE

Drill through the underside metal skin at the marked locations and remove the excess core.

FORM HOLE

Drill and form a hole through the services duct to the exit and entry hole on the underside.

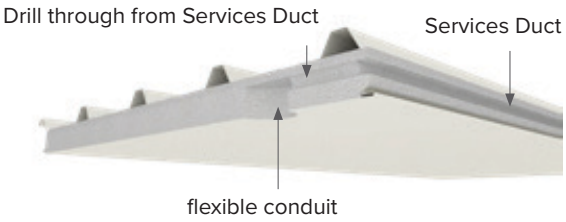
FEED CONDUIT

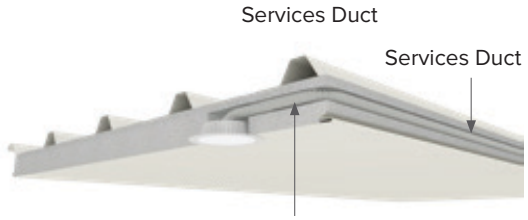
Lift the roofing panel into position. Feed the conduit or non migratory cable up from the wall panel into the entry hole on the roofing panel, along the services duct and out the exit hole.

SCREW OFF

Complete the final screw off, fixing through the panel ribs/ crests into the top wall plates or support beams.

HANDY TIP
Other options of electrical services are running above dropped ceilings or bulkheads or under slab.

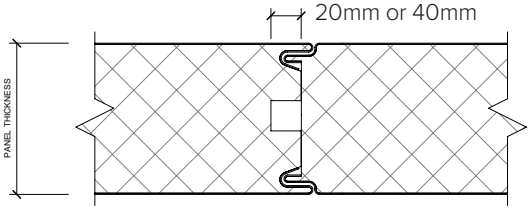


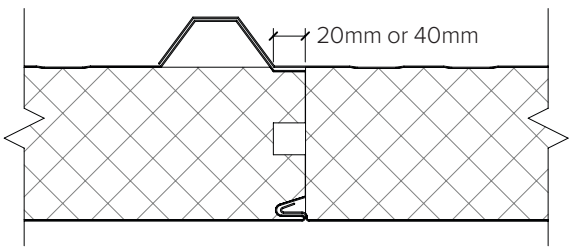


Feed electrical conduit through services duct.
Installation material left above duct / downlight

SERVICE DUCTS

Service ducts can be made on request





EXTERNAL WALL CLADDING
INSTALLATION GUIDANCE

FLAT PANEL INSTALLATION

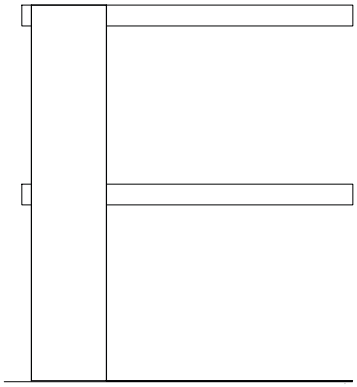
Installation shall be carried out or supervised by someone who is experienced in installing insulated panels.
The installation and cutting of these panels is similar to the roofing panels and should be installed in accordanace with Metalcraft Insulated Panels installation details and the Consented Drawings. The following guidance notes exclude load bearing and bracing wall elements, these need to be installed in accordance with the Consented Drawings and project specific Engineering report. The following is intended as a guide only.

For more information: www.metalcraftinsulatedpanels.co.nz

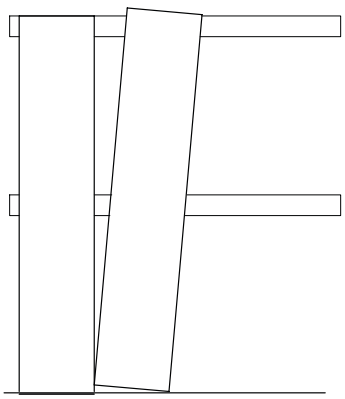
INSTALLING PANELS

- Before starting the wall panel installation, the interior Aluminium extrusion or support must be in place. For some applications interior extrusions may be omitted. Refer to the Consented Drawings and Metalcraft Installation details.
- Depending upon the specified head condition, an interior head flashing may be required to be fixed in place before the wall goes up.
- Once all base channels / angles are set in place to hold the panels then lift the first panel into place manual or mechanically. This should have been measured out prior to starting to work out where each section will finish.
- Set the first panel into place plumb and fix to the structure with the approved fixings, ie Rivets , screws , bolts , hidden fixings. Do not over tighten as this can cause external damage to the panels skin.
- Apply sealant to the external join , lift into place the next panel , slide into place with a good neat fit of the join.
- Apply sealant onto the interior lap (if required- refer installation details and or consented documentation) and connect the next panel. Panels should 'click' into each other when joined correctly.
- Always check that the inside join is engaged before installing the next panel.
- Corner joins can either be mitered or stepped to create continuous seal of the insulated Panel.
- At the wall corners and transitions to other wall construction etc., interior vertical flashing may be required. Refer to consented documentation and Metalcraft Insulated Panels -installation details.
- All Extrusions, flashings and joins internally to be sealed if a vapour seal is required for high humidity, controlled environments etc and as per the Consented Drawings.
- Window and door flashings in accordance with Metalcraft Insulate Panel details and as per the Consented Drawings.
- Fix The tops of the panels in accordance with Consented Drawings.
- Clean off any excess sealants as you install panels and flashings.

POSITION FIRST PANEL



INSTALL FOLLOWING PANELS




PORTER
ACCESS

QA CHECKLIST FOR PANEL & ROOF INSTALLATION

CLEAN SWARF FREE YES NO

Remedies Required

INSTALLED AS PER METALCRAFT DETAILS YES NO

Remedies Required

FIXINGS CORRECTLY TIGHTNED YES NO

Any damage to the panel noted here

PROFILE WASHERS YES NO

Fitted as per detail. List here

Butyl tape fitted YES NO

Flashings as per order details YES NO

Paint YES NO

List any scratches or issues:

Note: Metalcraft do not warranty the Installation, only the Panels. A Warranty Document will be produced for the Panel Only

Please Email to warranty@metpanels.co.nz
Any Questions Please consult Metalcraft Insulated Panels.

LBP Number:

Contact Details:


PORTER ACCESS
PORTERACCESS

BRANCH

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MEMBER OF ROOFING ASSOCIATION N.Z.

MRM
NZ METAL ROOFING MANUFACTURERS INC.

Metalcraft Insulated Panels

Metalcraft Insulated Panels are members of the Roofing Association, New Zealand and the New Zealand Metal Roofing Manufacturers Incorporated.

For more information on Metalcraft Insulated Panels visit: www.metalcraftgroup.co.nz.
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