**CodeMark™**
GM-CM30078-RevC

**Metalcraft**
Insulated Panel Systems

# METALCRAFT INSULATED PANEL SYSTEM SPECIFICATION

www.metalcraftgroup.co.nz

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**Metalcraft**
**Insulated Panel Systems**

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## 1. GENERAL

This section relates to the fabrication, supply and installation of Metalcraft EPS Insulated Panels (ThermoSpan and ThermoPanel), pre-painted steel wall and roof panels.

## 2. DOCUMENTS

Documents referred to:

- Performance clauses of NZBC.

- **Clause B1 STRUCTURE:** Performance B1.3.3, B1.3.2, B1.3.4 (b), (c), (d) and (e) for the relevant physical conditions of B1.3.3 (a), (b), (e), (f), (h) and (j).

- **Clause B2 DURABILITY:** Performance B2.3.1(a).

- **Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE:** C3.4(a) where a material group 1.

- **Clause E2 EXTERNAL MOISTURE:** Performance E2.3.2, E2.3.2, E2.3.3, E2.3.7 (b) and (c).

- **Clause E3 INTERNAL MOISTURE:** Performance E3.3.1, E3.3.4, E3.3.5 and E3.3.6.

- **Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1.

- **Clause G3 FOOD PREPARATION & PREVENTION OF CONTAMINATION:** Performance G3.3.2 (a) and (b).

- **Clause H1 THERMAL EFFICIENCY:** Performance H1.3.1 (a) and (b), H1.3.2E for the relevant physical conditions of H1.3.3 (c) and (e).

## 3. 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

## 4. MANUFACTURER'S DOCUMENTS

Metalcraft Insulated Panels:

- CodeMark certificate: GM-CM30078 (RevC)
- CodeMark Declaration
- **pass™** - Product Assurance Supplier Statement
- Care and Maintenance Guide
- Warranty General, Terms and Conditions
- Design and Installation Guide

ThermoSpan and ThermoPanel  data and specification sheets that are related to the work:

- ThermoSpan- Commercial Roofing Guide (CREPS / 14/12/2018)
- ThermoSpan- Residential Roofing Guide (RREPS / 2016)
- ThermoPanel EPS- Controlled Environment Guide (TPEPS / 14/12/2018)
- ThermoPanel EPS- Wall Details (TPWD / 14/12/2018)
- Metalcraft ThermoSpan & ThermoPanel - Data and Span Tables
- Engineering Reviews and Detailing
- Insulated Panel Industry Guides

### Metalcraft Insulated Panel Systems
http://www.metalcraftgroup.co.nz/products/
metal-insulated-sandwich-panels/
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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 maintaining Metalcraft panel products.

## 5. WARRANTY

Refer to Metalcraft Insulated panels:

- Warranty General Terms and Conditions (v1/ May 2017)
- Contractors/installer - Installation workmanship warranty
- NZ Steel - Material extended warranty

## 6. PERFORMANCE

### Fixings for wind and EQ

- Design and use the fixings appropriate for the wind loads on various elements as given by AS/NZS 1170.2.
- Use fixings and methods capable of sustaining the loads appropriate to the area as required by NZS 1170.5. Minimum pull out rib fixing of 1.8kN.
- This clause might only apply where the method of fixing the panels is required, by design or regulation, to comply with the earthquake requirements of NZS 1170.

### External cladding system (roof and wall)
Metalcraft Insulated panels comply with B2/AS1 provided they are maintained in accordance with Metalcraft and NZ Steel Care and Maintenance requirements.

### Thermal
Metalcraft Insulated Panels 100mm thick EPS will provide a thermal resistance R Value 2.63 (at 6 degrees C). Thermal transmittance 0.38 (U value – W/m2k°).

### Air leakage
The double tongue and groove joint assembly of the Metalcraft Insulated Panel allows air leakage of less than $0.52m^3/hr/m^2$.

## 7. PRODUCTS

### Metalcraft roof, ceiling and wall insulated panels
### Comprising of:
Class S Standard EPS fire resistant, insulated core, sandwiched between flat or profiled NZ Steel 0.59 mm CP & CPX Grade, Z275 steel with a zinc/aluminium alloy coating of ZINCALUME to AS 1397. Finish coat of 25

microns of COLORSTEEL®, PermaGuard and Microban antibacterial.

The panels range is manufactured in thicknesses of 50 mm - 300 mm. The double tongue and groove joint on each edge provides a positive weathertight seal with no thermal bridging.

## Assembly components

- 40 x 40 x 1.6 mm aluminium angles
- Rivets 4.8 x 14.3 mm (ASM63.66) blind aluminium rivets
- 12 mm hold down base bolts
- 70 x 50 x 5 mm plate washers
- 10 mm mushroom bolts
- 14 gauge self-drilling screws with 25 mm steel washers
- Galvanised steel self-drilling self-tapping screws for locating support brackets and girts
- Steel bolts supplied by Metalcraft
- Flashings (custom made to suit the application) compatible with the panel selection
- Silicon sealant (Acrylic Holdfast) supplied by Metalcraft

## Accessory components

- 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 Panel Systems. All attachments and fasteners to be compatible with the other elements of the panel system.

## 8. EXECUTION

### General installation

All building work must be carried out by competent, experienced installers. The installers must have knowledge of the Metalcraft Panel System construction methods and have access to all relevant/recent Metalcraft Insulated Panel System technical information. All/any ambiguities should be in the first instance referred to the designer.

### Metal finishes

All metal finishes applied by applicators must be currently approved in writing by the coating manufacturer.

### Touching up

On-site touch up of factory-applied finishes is not to be permitted unless a trial repair is subsequently approved in writing. All other panels with a damaged finish should be replaced.

### Delivery, storage and handling

Take delivery, unload and handle pre-finished panels and materials in accordance with the Metalcraft Insulated Panel Systems stated requirements. 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.

### 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.

### Do not use

Do not use adhesive tape, film, papers, or 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.

## 9. APPLICATION

### Installing panels

Install panels in accordance with the drawings, stated design parameters, reviewed and approved shop drawings, approved prototypes and installation details. Co-ordinate with work of other sections. 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 Panel Systems Z-Lock provides male/female joints to allow rapid and accurate panel installation. Apply neutral cure sealant to all roof panel joints < 6° to Metalcraft Insulated Panel Systems construction details.

### 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

Form penetrations to Metalcraft Insulated Panel Systems details. Use neoprene, silicone rubber, EPDM, aluminium or soft zinc to form flashing around penetration.

### Door installation

Install door into formed opening to Metalcraft Insulated Panel Systems details. Connect heated door sill cables to electrical connection.

### Window installation

Install windows into formed opening to Metalcraft Insulated Panel Systems details. Provide and fit flashings to NZBC E2/AS1.

## 10. COMPLETION

### Protection

Protect all surfaces and finishes from damage as long as practicable, including the retention of all or any protective coatings provided by the panel manufacturer. Remove protective coatings, using only the methods required by the panel manufacturer.

### 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.

## 11. INSULATED WALL & ROOF PANELS

**Type**

- ThermoSpan Insulated Roof Panel
- ThermoPanel  Insulated Wall Panel

**Insulated core**
Class S Standard EPS fire resistant

**Width**
1100 mm (cover panel)

**Thickness**
50 - 300 mm

**R Value**
100 mm thick panel (R-2.63)

**External/internal cladding skin**
0.5 mm G300S Z275

**External surface profile**
Various ribbed profiles

**Internal surface profile**
Various flat/baby corrugated profiles

**Exterior panel colour**
COLORSTEEL® colour range on zinc/ aluminium alloy coating

**Interior panel colour**
COLORSTEEL® colour range on zinc/ aluminium alloy coating.

Standard colour ranges are likely to be restricted, but special colours may be available for larger orders.

## 12. USEFUL LINKS

- Information to help with the Design & Installation of the Metalcraft Insulated Panel System:
  **Design & Installation Guide**

- For compliance information on Metalcraft Insulated Panel System:
  **pass™**

  **CodeMark: GM-CM30078 (RevC)**

- Information on the maintenance of Metalcraft Insulated Panel System refer to:
  **Maintenance**
  **Environmental categories**

- Our warranty for Metalcraft Insulated Panel System refer to:
  **Warranty**

**More information:**
**www.metalcraftgroup.co.nz**

# Metalcraft
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