TECHNICAL NOTE
March 2014

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SHADOWCLAD® STRUCTURAL Natural GROOVE | SHADOWCLAD® STRUCTURAL Natural TEXTURE | SHADOWCLAD® STRUCTURAL Ultra GROOVE | SHADOWCLAD® STRUCTURAL Ultra TEXTURE | SHADOWCLAD® FLASHINGS

SHADOWCLAD® INSTALLATION TO STEEL FRAME

The below specifications relate to the installation of Shadowclad® exterior cladding onto steel frame. Steel frame specifications should be read in conjunction with the Shadowclad Specification & Installation Guide.

Further specification advice should be sought from Carter Holt Harvey® Woodproducts or the applicable steel frame manufacturer.

FRAMING

Steel framing can be designed either in accordance with NZS 3404 'Steel Framing Buildings', a steel framing guidance document published by the National Association of Steel Housing (NASH) or by specific design.

Steel frame specification documents can be downloaded at www.nashnz.org.nz

STEEL FRAME LAYOUT

- Studs must not exceed 600 mm centres
- Nogs must be provided at 800 mm centres maximum
- Minimum framing width for fixing Shadowclad® to steel framing is 89 mm x 39 mm x 0.75 mm

Steel framing must meet the durability requirements of clause B2 and all other applicable NZ Building Code standards.

Note: H3.2 CCA treated timber must not be in direct contact with steel framing and must be isolated by using a material such as an E2/AS1 compliant building wrap.

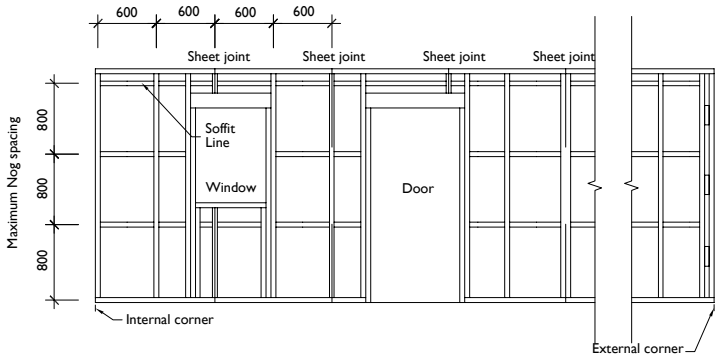
THERMAL BREAKS

Thermal breaks are required to be fixed to exterior steel framing to comply with E3 and H1 of the NZ Building Code.

To avoid thermal bridging use a thermal break with a minimum R-value of ≥ 0.25 m² C/W.

Thermal break materials must be suitable for use with H3.1 LOSP preservative treated Shadowclad.

Typical Framing Setout



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Information provided should only be considered a general guide and is specific to the CHH Woodproducts range of plywood products and cannot be used with any other plywood products no matter how similar they may appear.

For further information contact customer services or the applicable steel frame manufacturer.

0800 326 759
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Thermal breaks must be fixed over the entire surface of the steel framing.

For further guidance around thermal breaks and suitable materials refer to NASH document N-10 Thermal Break and Cavity Construction.

BUILDING WRAP & RIGID AIR BARRIERS

E2/AS1 requires buildings to have barriers to air flow.

The use of E2/AS1 compliant building wrap or Ecoply® Barrier rigid air barrier must be provided over steel framing prior to cladding installation.

Where Ecoply Barrier rigid air barrier is used on steel frame refer to Ecoply Barrier Installation to Steel Frame Technical Note.

Barriers to air flow are required regardless of direct or cavity construction.

PREPARATION – CAVITY FIX CONSTRUCTION

A cavity base closure must be installed at the bottom of all walls and above window heads.

This provides vermin proofing to ventilation openings. The holes in the cavity base closure must be kept clear to enable ongoing drainage and ventilation of the cavity.

Check with the supplier of the cavity base closure to ensure it is compatible for contact with H3.1 LOSP treated Shadowclad and galvanised steel framing.

The Shadowclad® flashing range is suitable for use with steel framing provided flashings are isolated using a material such as an E2/AS1 compliant building wrap or Ecoply Barrier rigid air barrier placed between the steel frame and flashing.

Cavity Battens

Cavity battens provide an air space between the frame and the sheet and are considered a "packer" when installed in accordance with Acceptable Solution E2/AS1.

The battens must be fixed over the building wrap or Ecoply Barrier rigid air barrier.

All timber battens must be nominal 20 mm thick (between limits of 18 mm and 25 mm in thickness) and at least the same width as the stud and minimum H3.1 treated in accordance with NZS 3640.

DO NOT use polystyrene battens which may melt in contact with solvents from H3.1 LOSP treated Shadowclad.

Battens must be fixed over the building wrap or Ecoply Barrier to all studs, as follows:

If studs are at 600 mm centres:

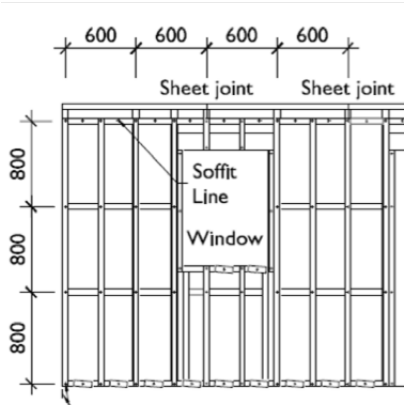
- Battens must be fixed at 300 mm centres vertically (i.e. a batten on studs and one in between the two studs fixed to top and bottom plates and nogs)
- Battens fixed between studs are to restrain the building wrap and insulation from bulging into the drained cavity
- The Shadowclad must not be fixed to these cavity battens where there is no framing behind them

If studs are at 400 mm centres battens are to be fixed on studs only.

Horizontal battens should be used at the top of the wall to block the top of the cavity from venting into the roof space.

Cavity spacers (i.e. short pieces of cavity batten) may be used to support the bottom sheet edge (or provide intermediate support where required e.g. above window openings) but must allow water drainage to the outside. The cavity spacers must be fixed at a 5° minimum slope with a 50 mm minimum air gap at either side.

Cavity Fix – Typical Frame Layout (with Battens)



STRUCTURAL WALL BRACING

Shadowclad has not been tested for structural wall bracing on steel framing.

EXTERIOR FLASHINGS & WALL OPENINGS

Wall openings, penetrations and sheet connections must be flashed to ensure weather tightness is achieved.

Refer to the Shadowclad Specification & Installation Guide for CAD Details and flashing specifications.

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All windows and doors may be detailed as per the requirements of Acceptable Solution E2/AS1 of the Approved Document for NZBC Clause E2 "External Moisture".

An Alternative Solution for detailing windows and doors is outlined in the WANZ WIS (Window Installation System) document available as a PDF download at www.wanz.org.nz

Refer also to the joinery provider.

SHEET LAYOUT

- Sheet edges must be supported by the framing
- Sheets are designed to be vertically fixed. **Do not fix sheets horizontally**
- When laying up on to framing, start at framing corners and work across the wall
- All treated Shadowclad® panels are envelope preservative treated. Where sheets are cut, edges must be coated with a brush on timber preservative such as Holdfast Metalex End Seal (Clear)
- Cut edges should be placed at the top of the sheet to avoid rain drips soaking in to cut end grains
- Priming or pre coating of bottom edges and sheet rears to a depth of 150 mm is required for sheets which will be in close proximity to moisture such as sheets overhanging building framing close to ground and apron flashings on roofs

FIXINGS – FASTENER DURABILITY FOR SHADOWCLAD®

Refer to NASH for specification advice on the compatibility of stainless steel fasteners and galvanised steel framing.

For zone D (sea spray areas) refer to NASH for specification advice as to the suitability of steel framing in these locations.

TABLE 1: FASTENER DURABILITY FOR SHADOWCLAD®

Exposure Zone	Fastener Durability
B & C	Hot Dipped Galvanised
D (sea spray areas)[1]	Stainless Steel

[1]Shadowclad used in zone D (sea spray areas) requires the use of stainless steel fasteners to avoid corrosion of fasteners exposed directly to natural environmental conditions.

TABLE 2: FASTENER SIZE AND LAYOUT

Application Frame: 89 mm x 45 mm x 0.75 mm	Fastener Length
Direct Fix	Screw 10g x 50 mm Self Tapping Wing[2]
Cavity Fix (using building wrap)	Screw 10g x 60 mm Self Tapping Wing[2]
Cavity Fix (using Ecoply Barrier)	Screw 10g x 65 mm Self Tapping Wing[2]

[2] CHH Woodproducts recommends the use of Hylton Parker Fasteners for use in steel framing

FIXINGS – FASTENER SIZE & LAYOUT

Standard Shadowclad panel fixing pattern:

- Fasten panel around perimeter at 150 mm centres
- Within panel body fasten on all supports at 300 mm centres

When fixing over a ventilated cavity do not fix to battens that are not installed over studs as the screws will puncture the building wrap.

Fasten no closer than 7 mm to sheet edges except on edge with top lap (weather groove lap), do not screw through top lap.

Fastener shiplap joints independently to ensure natural sheet expansion is not restricted.

Screw flush to panel surface and do not over drive fasteners past the first veneer layer of the Shadowclad.

Do not screw through the grooves in Shadowclad Groove panels.

LIMITATIONS

The information contained in this document is current as at March 2014 and is based on data available to CHH Woodproducts at the time of going to print.

CHH Woodproducts reserves the right to change the information contained in this document without prior notice. It is important that you visit www.chhwoodproducts.co.nz or call 0800 326 759 to confirm that you have the most up to date information available.

CHH Woodproducts has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document and, to the extent permitted by law, will not be liable for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information.

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