



NON FLAMMABLE



ENVIRONMENT FRIENDLY



ECONOMIC



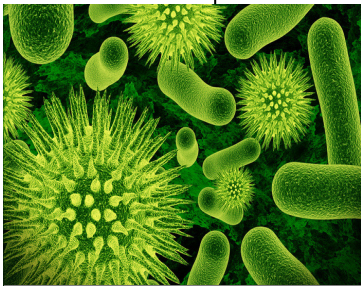
PROVIDES HIGH SOUND & HEAT INSULATION



NOT AFFECTED BY WATER AND MOISTURE

ResCom[®]

Building Products



DOES NOT HOUSE BACTERIA AND PESTS



HIGHLY RESISTANT TO STORMS AND HURRICANES



IMPACT RESISTANT



LIGHTWEIGHT



Application Areas of ResCom® (CMC) Magnesia Cement Panels

ResCom® (CMC) panels are construction, insulation and decoration panels that can be used in every detail of interior and exterior surfaces of all buildings.

ResCom® (CMC) panels can be shaped in any size or with joints.

ResCom® (CMC) panels can be used to obtain construction elements for differing purposes by combining with various insulation materials. Can be used with insulating materials such as ESP, XPS, rock wool, fibre glass and polyurethane foam that provide high heat, sound, and fire insulation for partition walls and sandwich panels.

- It can be used as interior and exterior facing in all kinds of construction,
- In heat insulation as an exterior side coating,
- In partition wall systems in interior locations (6, 8, 10, 12, 16mm)
- Where fire insulation is required (for any thickness)
- For places where water and moisture resistance is required (for any thickness)
- For places where high level of sound insulation is required (for thickness of 8mm and above)
- In construction of suspended ceilings (6, 8, 10, 12mm)
- Raised floor construction (for thickness of 16, 18, 20mm)
- It is completely compatible with new fire regulations
- Used as roof sheathing panels (10, 12, 16mm)
- In construction of interior and exterior walls, floor and ceiling of light steel prefabricated buildings
- Fire protection of heavy steel buildings
- In construction of schools, hospitals, hotels, residences, military structures, and earthquake and war shelters.
- In construction of interior and exterior walls, floors, and ceiling of building site offices, hangars, mess, sleeping quarters and such
- In cold storages
- In furniture manufacturing (fireproof door, counter, cupboard, etc)
- As supporting element under flooring, over ground concrete (screed application is not required)



Superior Properties of ResCom® (CMC) Magnesia Cement Panels

- It is resistant to impact
- It is lightweight, can be carried easily. It lightens the load of your building (10mm panel weights 13kg/m²)
- Made completely of natural materials and is environment and nature friendly. It does not include any materials such as asbestos, toxic materials and heavy metals that are hazardous to human health.
- It is not affected by ultraviolet rays.
- It does not need special treatment.
- It is highly resistant to external factors.
- It is not affected by pests and does not house pests.
- Due to its structure, it can be painted, rendered, textured, tiled, CNC, profiled
- Since it is not affected by water and fire, it can be used in construction of all furniture and decoration.
- It is a protective composition panel against fire and sea in shipping and yacht building sectors.
- It is the most suitable panel against fire and moisture that can be used as protective material in highway and railroad tunnels.
- It can be easily processed and assembled with convenient hand tools.
- It provides material and labour savings in painting, side coating, insulation, and thin putty up to 50 to 60%
- It is highly resistant against chemicals.
- It is a breathing material.
- It accommodated to various insulation materials.
- It can be used as sandwich panels for various purposes.
- It adds value to buildings with its unique superior properties.

WARNING: The above information is ONLY relevant to ResCom® (CMC) Building Products. These results are not a reflection of the performances of other Common MgO products.

ALL ALTERNATE MgO PRODUCTS SHOULD BE INDEPENDANTLY ACCESSED

GENERAL PHYSICAL CHARACTERISTICS

Flexural modulus	1.093 × 106psi	ASTM D6109
Flexural strength	1295psi	ASTM D6109
Compressive strength	3000psi	ASTM C684
Shear strength	391psi	ASTM D6109
Flame spread	0	ASTM E84
Smoke developed	0	ASTM E84
Smoke density	None	ASTM E662 not req
Moisture content	8%	
Impact resistance	1.65 ft/lb-in of notch	
Punch Through	1.75"pin @ 1,133kg	
Thermal insulation U-value 12mm	0.3947	
Fungus/mould	Non-nutrient	ASTM G21
Smoke	Nontoxic	ASTM E662

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IMPACT TESTING

(ASTM D5628)

Drop height	Unclamped edges	Clamped edges
305 mm	Hairline cracking	Hairline cracking
152 mm	Superficial cracking	Superficial
cracking		

DESIGN RECOMMENDATIONS

Panel	L/305 (305mm)	L/305 (406mm)	L/305 (610mm)	L/240 (305mm)	L/240 (406mm)	L/240 (610mm)
12 mm	458.94ksm	195.29ksm	58.59ksm	693.30ksm	292.94ksm	92.76ksm
14mm	1225.49ksm	517.53ksm	156.24ksm	1845.56ksm	781.19ksm	229.47ksm

LOAD FOR MAXIMUM ALLOWABLE STRESS

Panel	305 mm oc	406 mm oc	610 mm oc
12 mm	6669.39ksm	3666.70ksm	1640.49ksm
14 mm	12738.25ksm	7177.17ksm	3193.11ksm

Above recommendations based on a maximum allowable flexural stress of 1000 psi.

PANEL SHEAR

12 mm panel	140.51/meter
15mm panel	196.90/meter

Above recommendations based on a safety factor of 4. The use of a T-shaped spline 12.7 mm high with 25.4 mm wings on both sides is recommended for panels 15 mm thick, or heavier, used for subflooring.

METHODS

ResCom® (CMC) panels may be scored and snapped, cut, trimmed, drilled or shaped using ordinary power or hand tools. ResCom® (CMC) panels may be fastened to supporting joists using self-drilling, self countersinking, corrosion protected cement board screws.

Fasteners should be spaced at 305 mm intervals along edges. Spacing may be increased to 457 mm at intermediate joists.

There are several ways to cut ResCom® (CMC) panels products during the installation process:

- A Jigsaw, Sawzall or a low RPM circular saw (Makita 3-5/8" battery operated circular saw works well) - either of which will help to reduce dust.
- A standard circular saw will also work (it is advised to use a dust collection bag and mask) using a standard blade (the blade will dull slightly faster compared to cutting wood).
- Use a T-square and a backer board knife to score the panel, then lay the panel on a 3/8" piece of rebar or dowel and snap like drywall.
- Use a Roto-Zip tool to cut electric outlet holes.
- It is recommended that 2 people move the panels as often as possible to keep it in the best condition. The panel weight is such that with only 1 person moving it too much pressure in the wrong spot can cause it to break.
- Use self-drilling, self-countersinking screws rather than standard drywall screws.
- ITWBuildex.com "Rock On"
- Senco "Duraspin"
- Grabber "Durock"
- Space screws at 305mm along edges and 450mm along intermediate joists.
- Use any standard joint compound and drywall tape. Fibreglass tape is recommended but not a necessity.
- Use any ASTM & BCA approved fire caulk for fire separation applications.

ResCom® (CMC) Panels is a structured / ridged board that can be installed vertically or horizontal along walls with confidence.

ResCom® (CMC) can be back blocked between studs / mid spans by applying a 150mm wide off cut of the sheathing thickness being used, apply appropriate adhesive glue to the face of the fearing strip and apply to the back of the sheet, hold firm against the back of the front sheet and nail or screw fix together.

Apply next sheet over the fearing strip repeating the above method either butt jointing each panel or leave a 2mm jointing gap that will be filled and sanded with appropriate fibre cement jointing compound for the requested application and sand smooth.

The smooth side of the ResCom® (CMC) is suitable for painting or wallpapering with no further preparation, and the rough side is suitable for application of ceramic tile.

Either solvent-based oil paint or water based latex paint can be used. If the panels are to be directly exposed to rain and weather, apply a prime coat of acrylic-siloxane waterproofing sealer, followed by oil-based paint.

Where ResCom® (CMC) is to be used as a mounting surface for ceramic tile, such as in a bath or shower enclosure, a solvent-based tile mastic is recommended.

ResCom® (CMC) recommended assemblies consist of exterior wall, interior wall, shaftwall, steel column, staircase, ceiling/floor and roofing.

***WHEN INSTALLING ResCom® (CMC) FLOORING, ALWAYS INSTALL SMOOTH SIDE UP.**
When floor joists are installed on greater than 406mm centres, contact MgO Corp Board technical services for installation guidance.

There are many floor design options that can be utilized with ResCom® (CMC) to deliver varying degrees of sound and rigid robust performances.

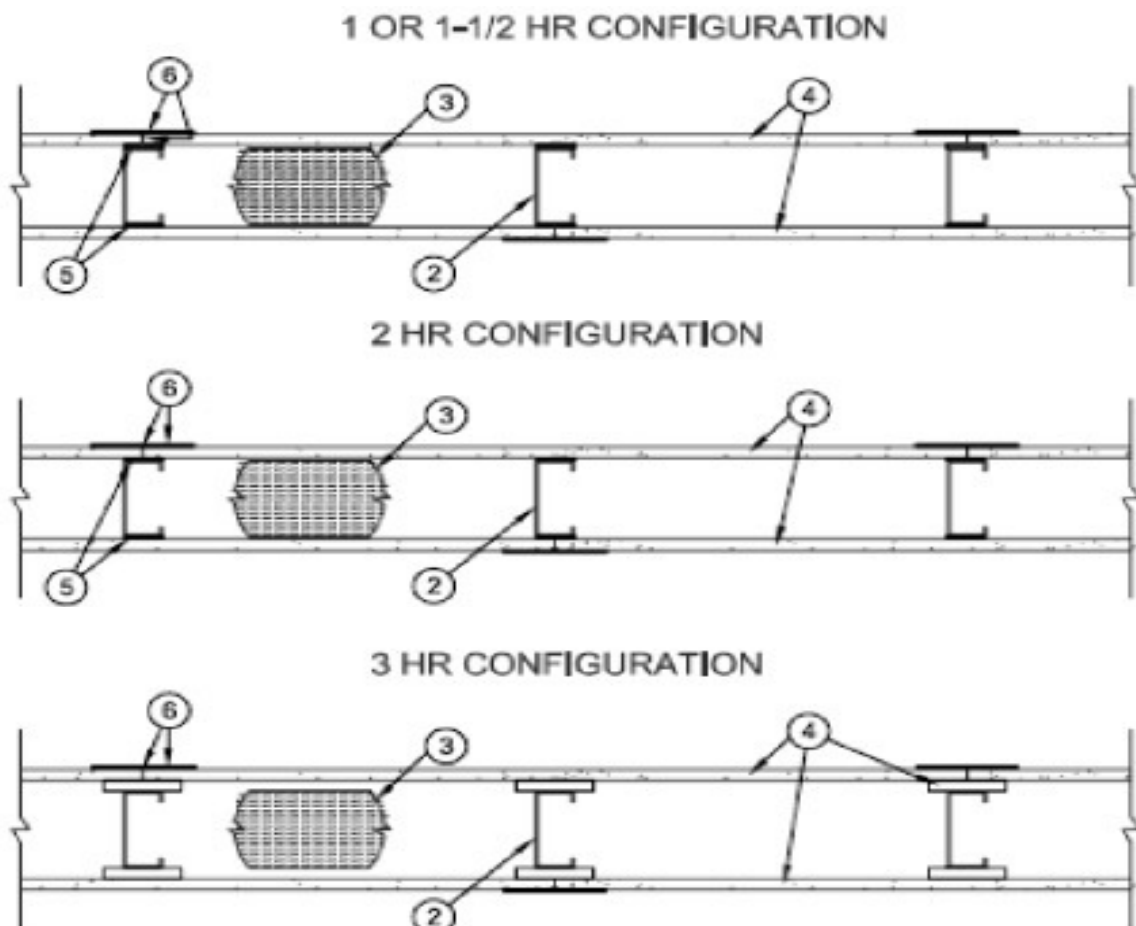
PRECAUTIONS

- Avoid handling ResCom® (CMC) panels when wet. Allow to dry before applying joint finishing materials.
- Use appropriate setting compounds during cold weather or when slow drying.
- ResCom® (CMC) does not contain any known cancer-causing materials. Use of a dust mask is recommended during cutting and sanding operations.
- Use of gloves is suggested to reduce the possibility of abrasion injuries.
- Fasteners should not be closer than 51 mm from a corner, with the adjoining screw not less than 102 mm from the same corner.
- Do not install screws on 45-degree angles at corners.
- Board ends must be supported by joists in flooring and ceiling applications.
- Fasteners must always be installed over supporting structure.
- Do not install surface coverings by driving screw fasteners, except over supporting structure.
- Cantilever overhangs are not recommended.
- Fasteners should not be closer than 20 mm from any edge.

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

Non-Load Bearing Wall Ratings



The min stud depth and thickness of insulation for the 1 hr, 1-1/2 hr, 2 hr and 3 hr ratings are as follows:

Rating, Hr	Min Stud Depth, in.(Item 2) of Insulation	Min Thickness (Item 3)	Min Density of Insulation (Item 3)
<u>1 or 1-1/2</u>	3-5/8	3 in.	5.7 pcf
<u>2</u>	3-5/8	4 in.	6.1 pcf
<u>3</u>	4	4 in.	6.1 pcf

FIRE RATING PERFORMANCE (SINGEL DIRECTION)

FR SHEATHING **FIRE SIDE OF FRAME**

(No Insulation in cavity)

- 10mm delivers a -/60/- for non-load bearing walls, floors, and ceiling on a single sheet application.
- 12mm delivers a -/90/- for non-load bearing walls, floors, and ceilings on a single sheet application.
- 16mm delivers a -/120/- for non-load bearing walls, floors, and ceilings on a single sheet application.
- 20mm delivers a -/180/- for non-load bearing walls, floors and ceilings on a single sheet application.

FIRE RATING PERFORMANCE (BI-DIRECTIONAL)

FR SHEATHING **BOTH SIDES OF FRAME**

(Insulation Required in Cavity. **Call Technical support for guidelines of thickness and density**)

(Optional: Address Thermal Breach - Trim Plate / Mastic tape applied to metal substrates)

- 8mm + 3mm ResCom[®] Trim Plate to the face of a (metal) stud + minimum R2.5 Earthwool Insulation will deliver a -/60/60 for non load bearing walls, floors and ceiling on a single sheet application.
- 10mm + 3mm ResCom[®] Trim Plate to the face of a (metal) stud + minimum 50kg/m³ rigid rockwool insulation will deliver a -/90/90 for non-load bearing walls, floors and ceilings on a single sheet application.
- 12mm + 3mm ResCom[®] Trim Plate to the face of a (metal) stud + minimum 80kg/m³ rigid rockwool insulation will deliver a -/120/120 for non-load bearing walls, floors and ceilings on a single sheet application.
- 16mm + 3mm ResCom[®] Trim Plate to the face of a (metal) stud + minimum 140kg/m³ rigid rockwool insulation will deliver a -/180/180 for non load bearing walls, floors and ceilings on a single sheet application.

Thermal Break Gasket Tape

Foam isolator tape with foiled backing, 1-1/4 in. wide by 1/8 in. thick, with pressure-sensitive adhesive on one side.

Fill, Void or Cavity Materials

All vertical and horizontal joints of building unit panels covered with a 4in wide, min 1/8 in. thick layer of fill material. Screw heads covered with fill material.

PASSIVE FIRE PROTECTION PARTNERS

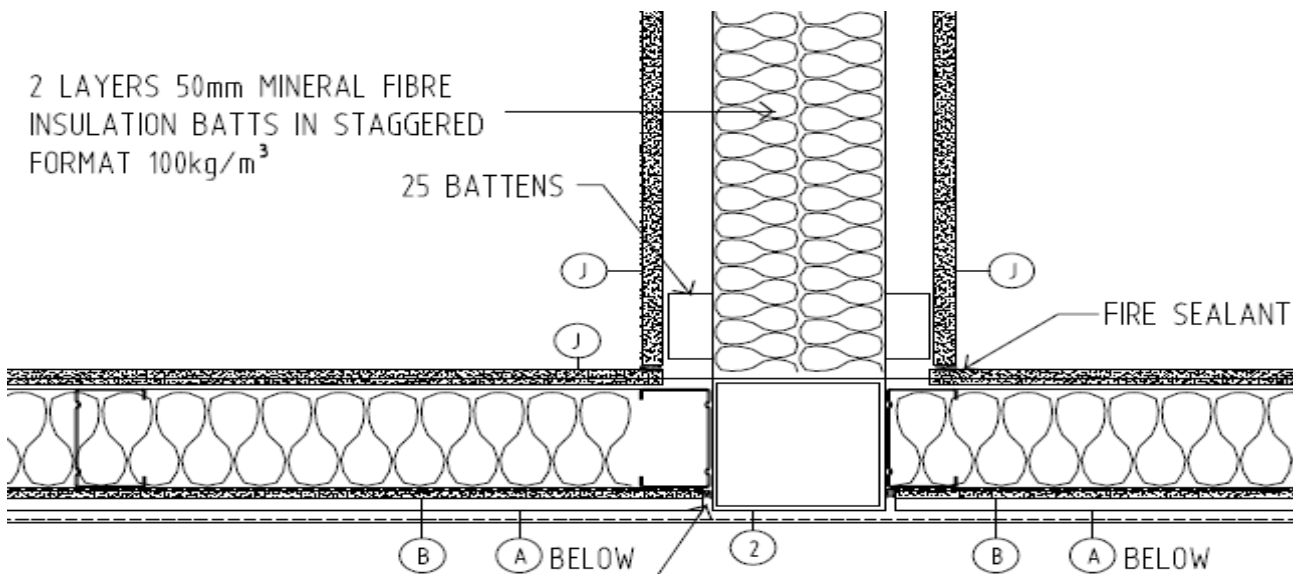
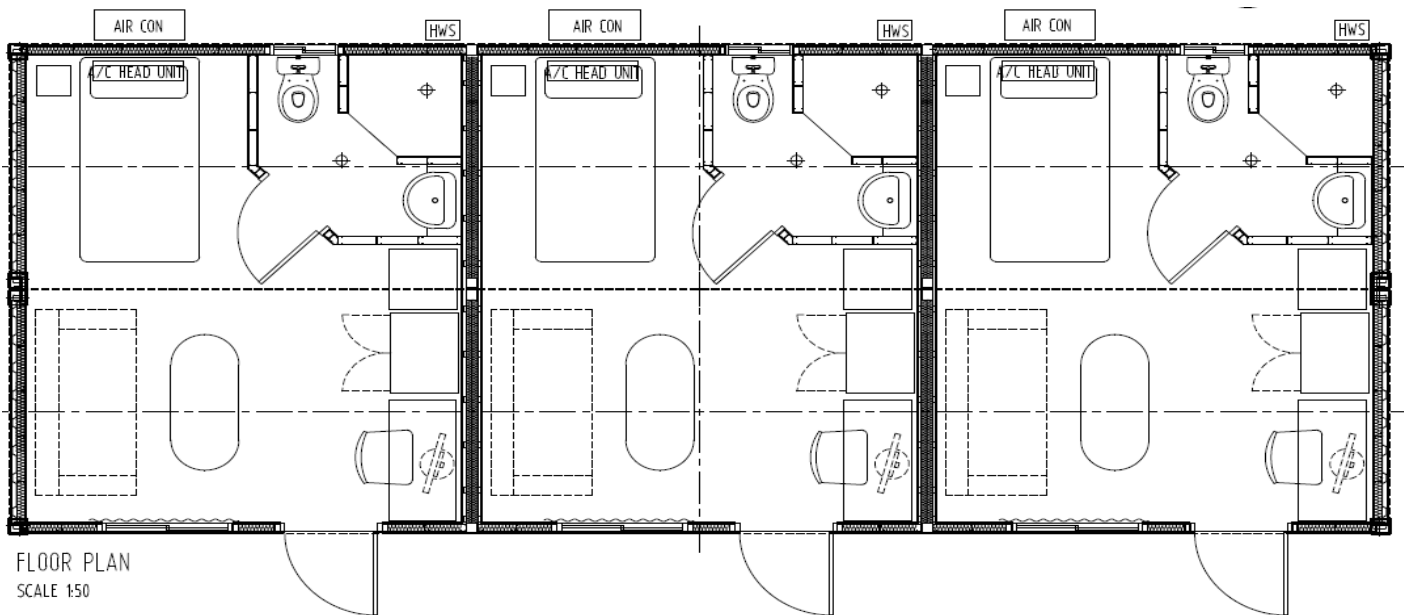
INTEX: Fire and Acoustic Rated Sealant

WARNING: The above information is ONLY relevant to ResCom® (CMC) ISO:8336 Certified and Compliant Building Products and Systems.

These results are not a reflection of the performances of other Assumed ALTERNATIVE DTS MgO products.

ALL ALTERNATE PRODUCTS SHOULD BE INDEPENDANTLY ACCESSED & CERTIFIED

PARTY WALL: -/120/120 with Rw54 on a Double Stud System

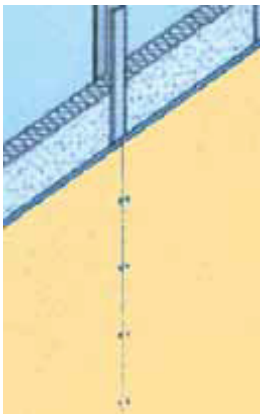


FINISHES LEGEND:

- Exterior Lysaght 0.47 Colorbond Custom-Orb Cladding batten fixed to
- 10mm 'SHP' Joint ResCom® (CMC) Exterior Sheathing / Rapid Air Barrier Panel
- FR rated Vapour Barrier
- Minimum 50mm thickness of 100kg/m³ Insulation
- Internal Walls Single Layer of 12mm ResCom® (CMC) General Purpose Lining
- Ceilings Single Layer of 12mm ResCom® (CMC) General Purpose Lining
- Wet Area Walls Single Layer of 12mm ResCom® (CMC) PS5 Lining
- 28mm Structural Plywood Floor with 12mm ResCom® (CMC) Flooring Overlay
- Floor covering 3mm Sheet Vinyl Floor Lining

FIXING

Wall and ceiling joints made with ResCom® (CMC) sheathing boards can be quickly finished by applying joint tape and interior-exterior putty.



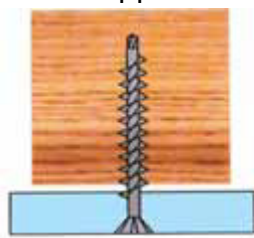
Screwing: Class 4 to 5 (Non-Corrosive Screws & Nails at All Times)

When assembling ResCom® (CMC) panels, non-corrosive galvanised countersunk, and or marine grade stainless steel self-drilling countersunk pointed screws, nails or mechanical fixings should be used. Screws should be driven at 1.5 to 2cm from the edge of the panels. Screw lengths should be between 2.5cm to 3.5cm.

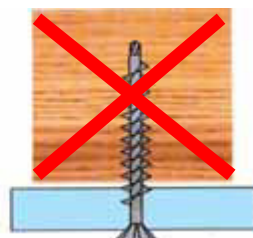
Screws should be driven at 1.5 to 2cm from the edge of the panels.



Screws should be applied to the panels as shown below as RIGHT



RIGHT



WRONG

Paint Application

Since the surfaces of the boards are very smooth, they do not require plastering. Most Primers or paints can be directly applied over the panels.

ResCom® BP has APPROVED & TESTED INTERNAL & EXTERNAL COATING PARTNERS: Dulux, Bristol & Taubmans Paints, Corkspray, RockCote. Contact rescombp@rescombp.com for specification data.

CUTTING TOOLS

ResCom® (CMC) sheathing boards can be easily cut with a box cutter with the help of a template with thickness up to 10mm. Or can be cut with a portable power hand saw by piling plates.



Cutting Hand Tool

Portable Horizontal Saw



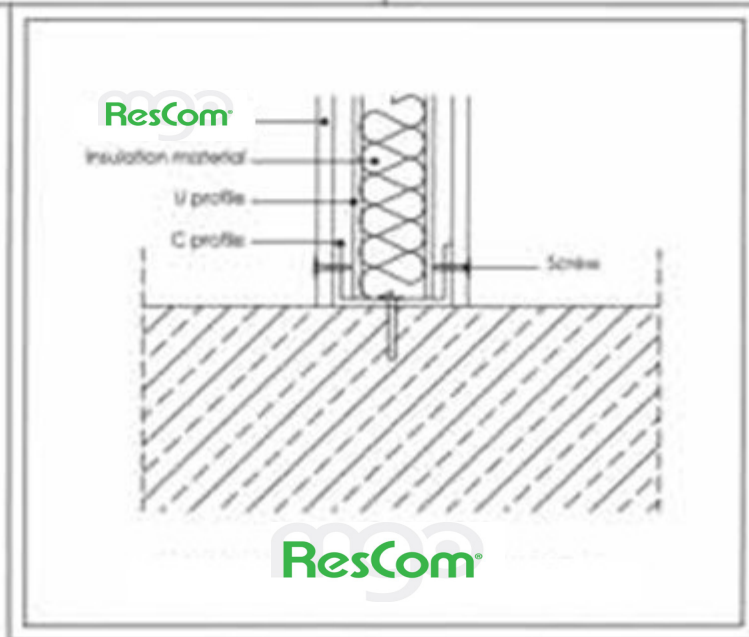
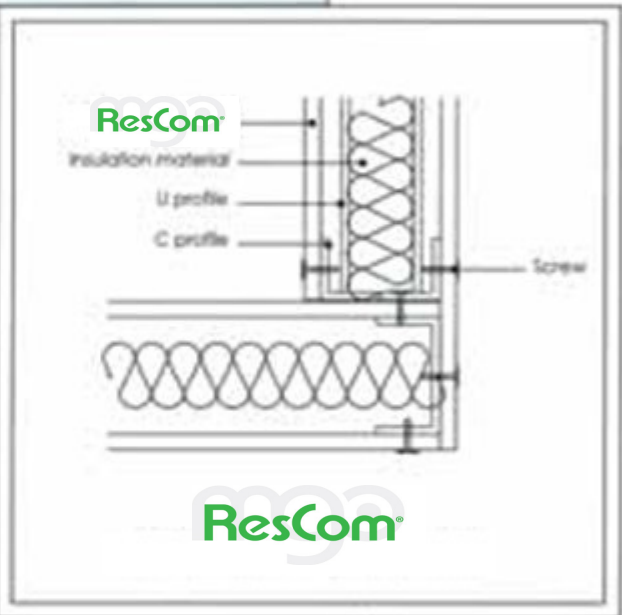
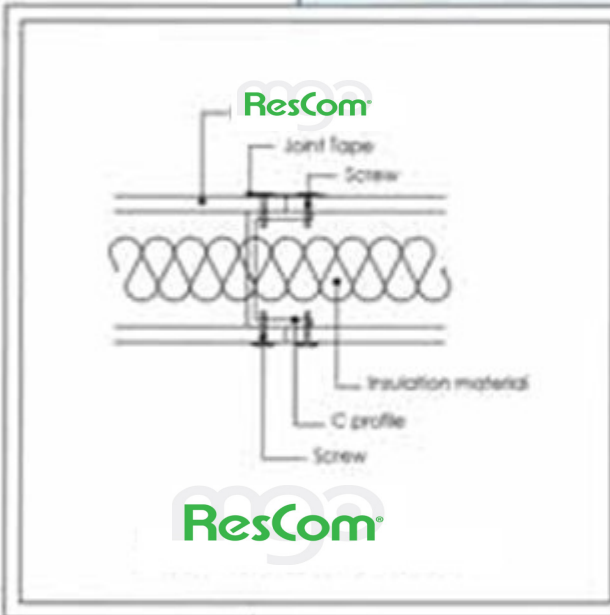
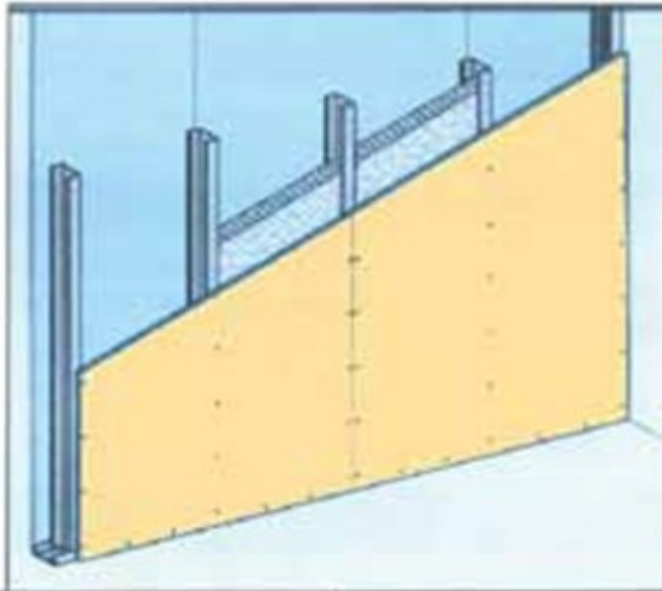
Portable Hand Saw

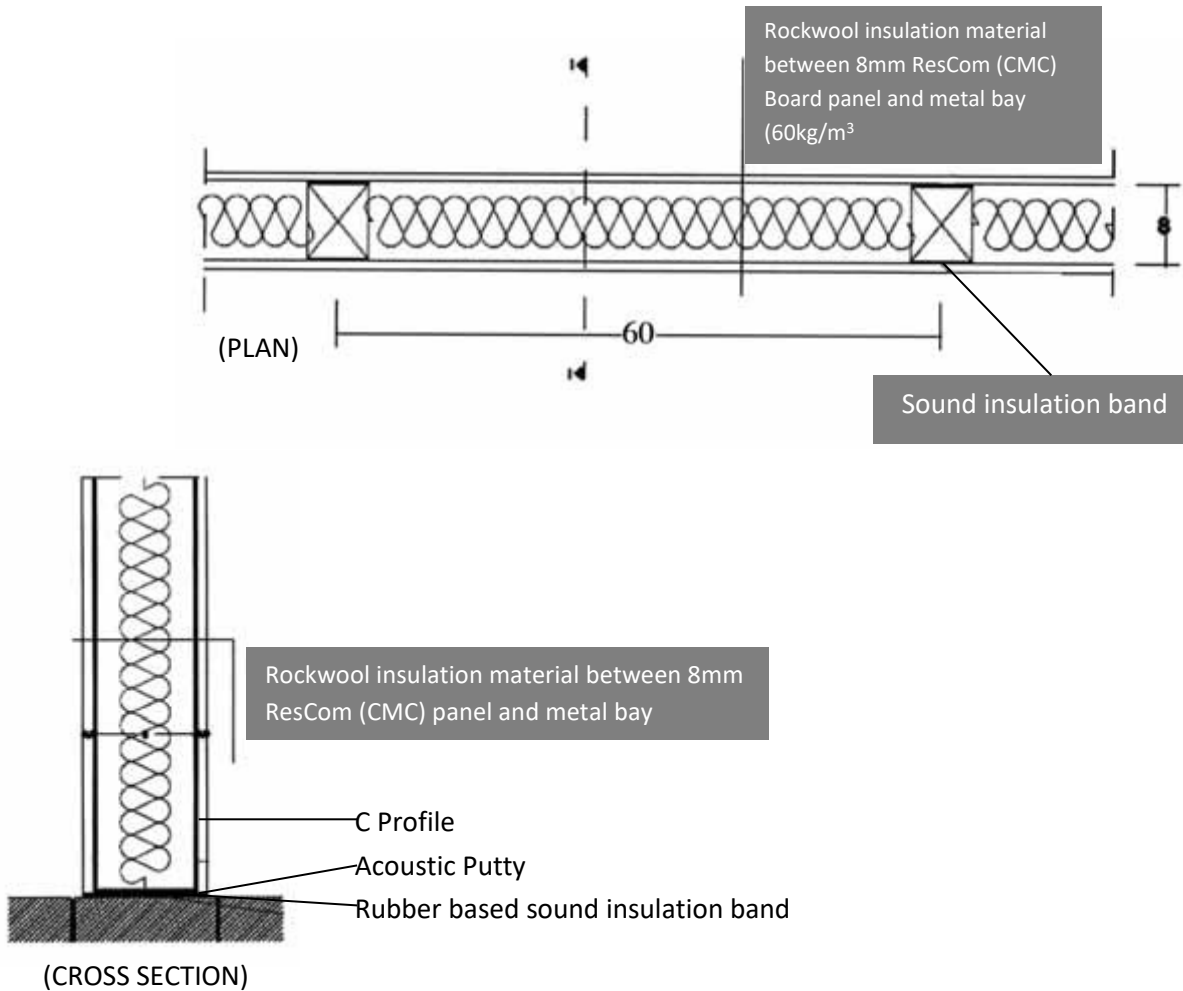
PARTITION WALL CONSTRUCTION

Construction is prepared using C, U, galvanised or box profiles. ResCom® (CMC) sheathing boards panels are fixed on both surfaces using countersunk head screws, using rockwool or earthwool insulation in the cavity, depending on the qualities or specifications of the walls, 8, 10, 12, 16 and 20mm panels are used.

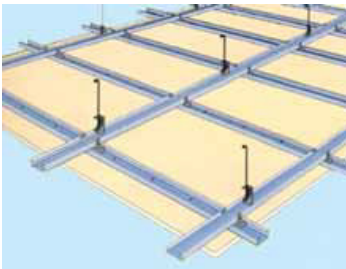
ResCom® (CMC) sheathing boards can add 56dB sound insulation, 100% fire insulation (A1) in partition walls made of 75 C profiles and heat insulation and resistance to water and moisture in environments where the partition wall is constructed.

ResCom® (CMC) sheathing boards enable 50% to 60% savings in paint, putty, labour, waste material, weight loadings over each floor level Wall details that can be formed with box profiles for 8mm, 10mm and 12mm are shown below and the same detail can be used with 15 or 100 C, U or M galvanised profiles. and increase the net floor area of the completed building.





SUSPENDED CEILING CONSTRUCTION



ResCom[®] (CMC) sheathing boards Panels are fixed to construction prepared by using C, U or M galvanised profile or iron profile by using either pointed or self screwing screws. In ceilings 8mm, 10mm, 12mm and 16mm ResCom[®] (CMC) sheathing boards are used.

In cases where ResCom[®] (CMC) sheathing boards are going to be used as raised floor, panels with 18mm and above thicknesses should be preferred. Raised floor is used with either iron profiles or ready-made fixed legged and belted raised floor systems. Panels which will be used by pasting to the floor are fixed by cutting in required dimensions and using suitable adhesives. These adhesives include ceramic adhesive mortar, flexmortel, polyurethane foam and acrylic mastic.



ResCom[®] (CMC) sheathing boards can be fixed to either a timber frame or a lightweight metal frame. The frame must comply with the local building regulations and the requirements of the brochure.

ResCom® (CMC) sheathing boards must be supported and fixed to the frame and must not be joined without fixing the frame.

Maximum frame centres for fixing sheets to the frame is 600mm centre to centre.

To provide sufficient support for screws or nails, a minimum stud width of 42mm (for timber) or 36mm (for a metal frame) is required.

Where this is not possible, an additional stud will be required to ensure fasteners can be fixed at a minimum distance of 12mm from the sheet edge.

ResCom® (CMC) sheathing boards recommend using Buildex(R) Fibre(R) Self-drilling screws.

Refer to Buildex brochure for fixing instructions.

The recommended screw/nail sizes are:

- Steel frames: 30mm screws
- Timber frames: 50mm screws or similar nails 50 – 60mm

The maximum stud spacing is:

- 600mm for 1200mm wide sheet
- 450mm for 900mm wide sheet

Sheet Layout

ResCom® (CMC) sheathing boards should be fixed to framing vertically. Planning the sheet layout before fixing is important in order to minimize the number of sheet joints and material wastage.

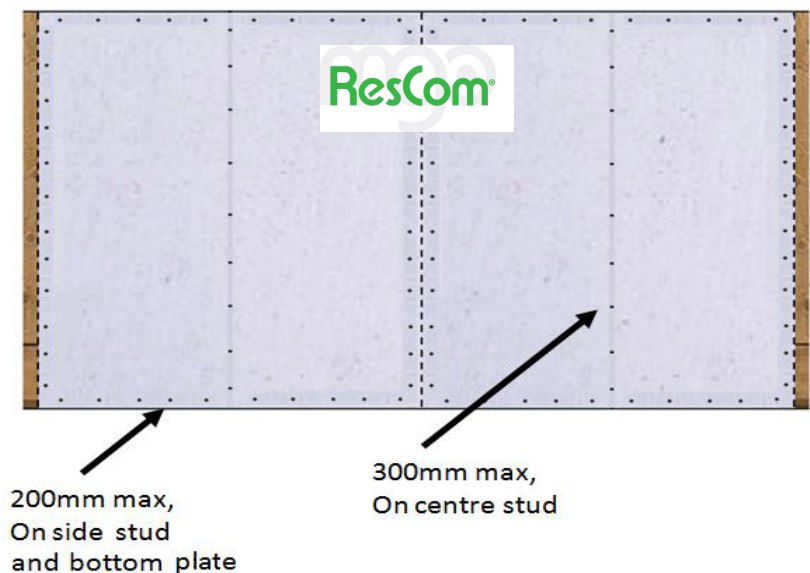
Avoid horizontal sheet layout where possible. Horizontal sheet layout is only recommended where the maximum depth of cladding is 1200mm or 900mm (one sheet width).

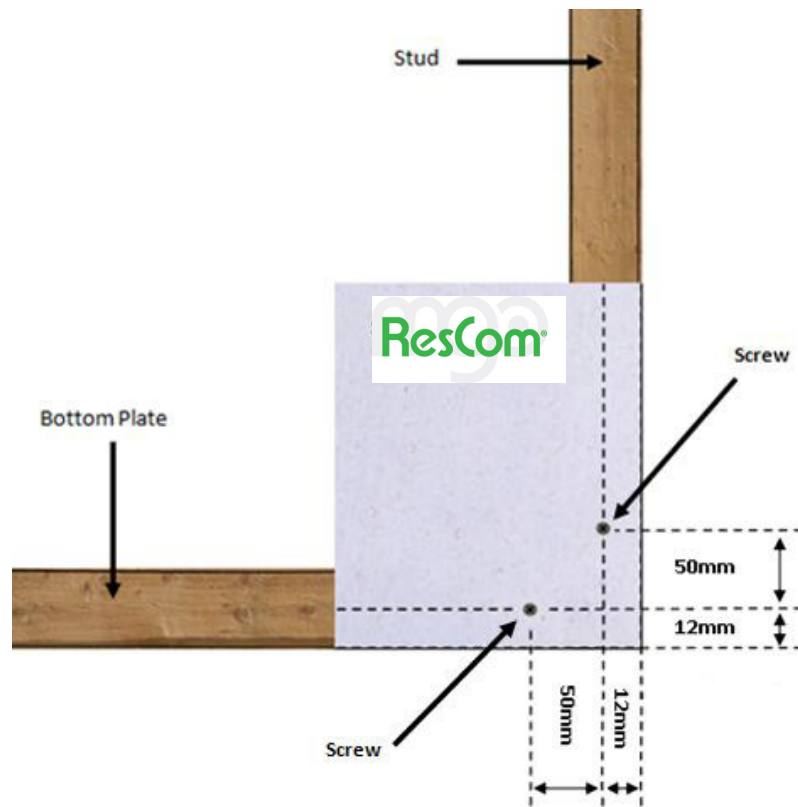
Horizontal sheet installation is more suitable for applications such as fascias, spandrels, parapets etc.

Sheet installation

Fasteners must be fixed at minimum of 12mm from the sheet edges and 50mm from the sheet corners.

Fasteners must be fixed along the edge of the sheet and the distance between the centres of the fasteners must not exceed 200mm.





Framing & Fixing

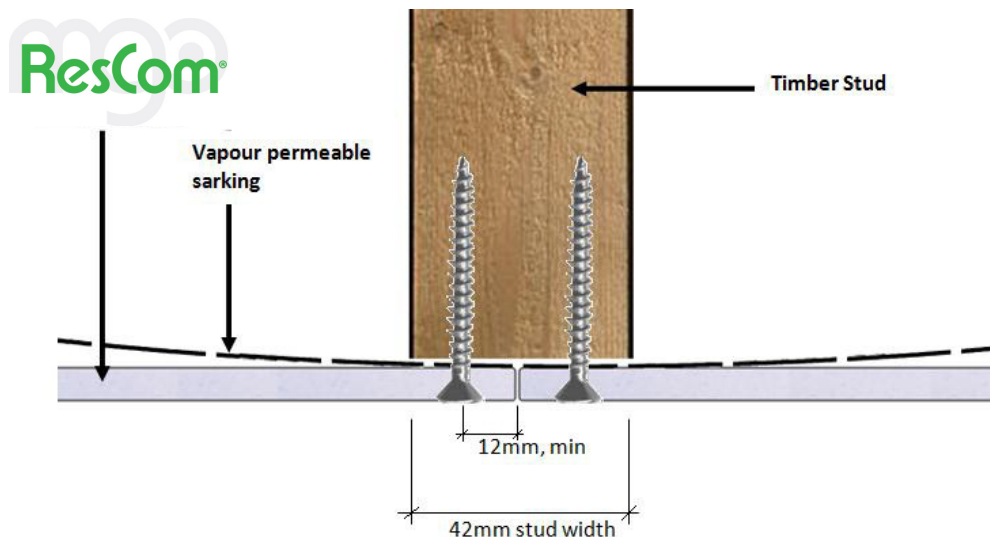
All studs and noggins must be checked with a log straight edge for line and face accuracy, to ensure the stud wall has a true and accurate outside face as any warping will be visible after paint or texture. A suggested tolerance should be less than 2mm per 500mm.

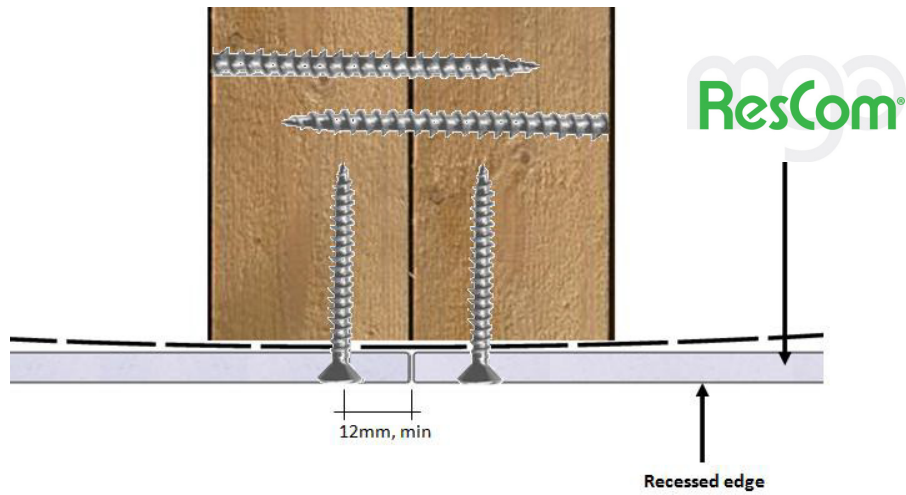
Timber

The timber used should comply with AS1684.2 "Residential Timber Framed Construction". The timber used for house construction must have the level of durability appropriate for the relevant climate and expected service life and condition.

Timber frame thickness (stud width) at sheet joints must have a minimum of 42mm. Timber with less than 42mm wide must not be used at any sheet joint because of insufficient sheet landing width and should provide double studs at sheet joints.

If there is a supporting frame in the middle of the sheet, the fasteners should be fixed in the body of the sheet, and the distance between the centres of the fasteners must not exceed 300mm. Control joints should be installed where there is a significant structural moment expected. In general, if a continuous run of sheeting exceeds at 5.4m and at flooring level, it must be broken with control joint.





Vertical control joints

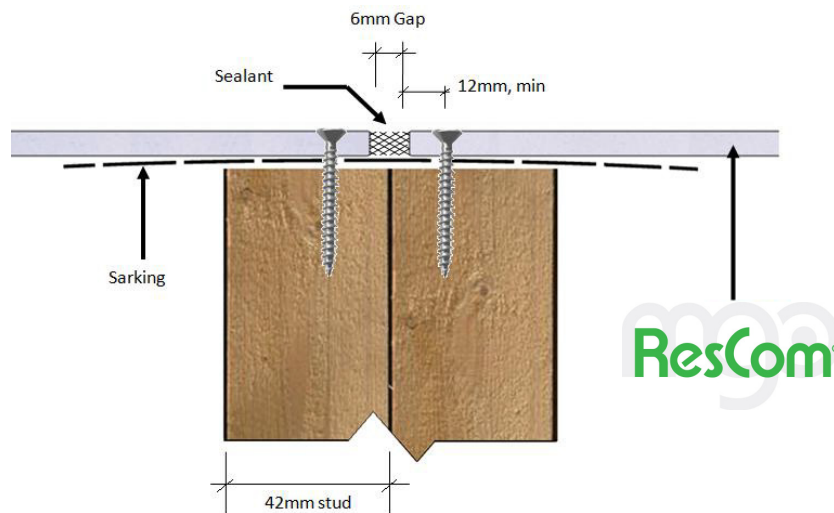
They must be installed in the wall run over 5.4m.

The control joints require a 6mm gap between sheets and the joint must be supported by double studs.

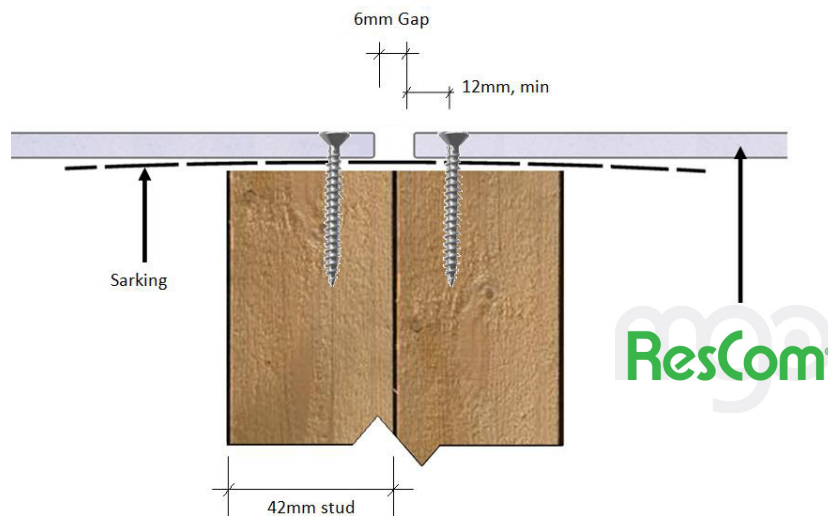
Horizontal control joints

They must be located in walls at 3.6m maximum centres.

They are also required at floor joint level and at garble ends.



NOTE: DO NOT TEXTURE COAT OVER SEALANT



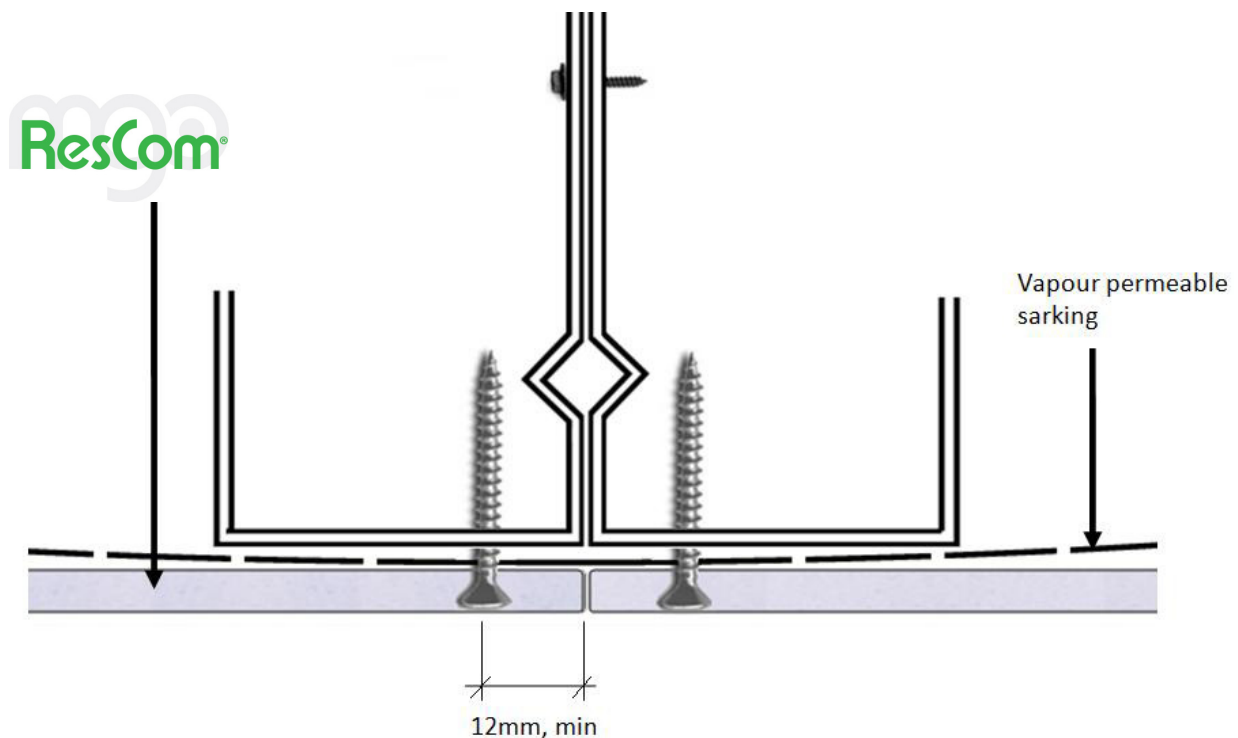
Metal

ResCom® (CMC) sheathing boards can be fixed directly to lightweight metal frame which complies with AS3623.

The metal frame must have a minimum flange width of 36mm per sheet joints, as this will provide adequate support for fixing two sheet edges. Where narrow sections are used, provide double studs at the sheet joints.

When fixing ResCom® (CMC) sheathing boards to a rigid framing, always batten out using timber or light steel prior to fixing. Battens supporting the sheet joints must have a minimum face width of 45mm.

Hot rolled steel structural sections must be batted out with timber or steel battens before sheets are fastened. The sheet must not fix directly to hot rolled steel frames.



Components

Screws

For light weight steel frames 0.75mm to 1.6mm thick



Nails

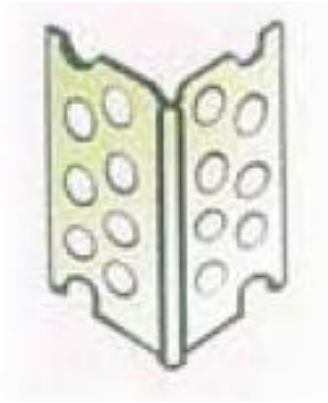
Galvanised; 2.0mm x 30mm for softwood and 2.0mm x 25mm for hardwood.



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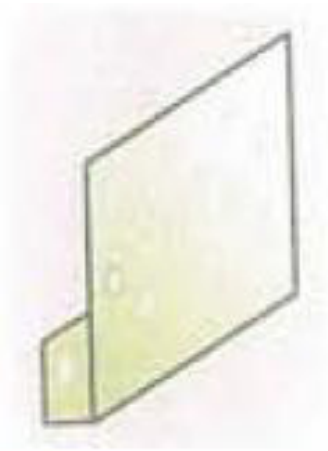
Corner Beads

Taped and Set corners – to satisfy coating manufacturer's specification.



Starter Strips

Starter Strip provides a straight edge to finish coating and protects sheet edges.



ResCom® (CMC) Floor System Installation

Timber Framing

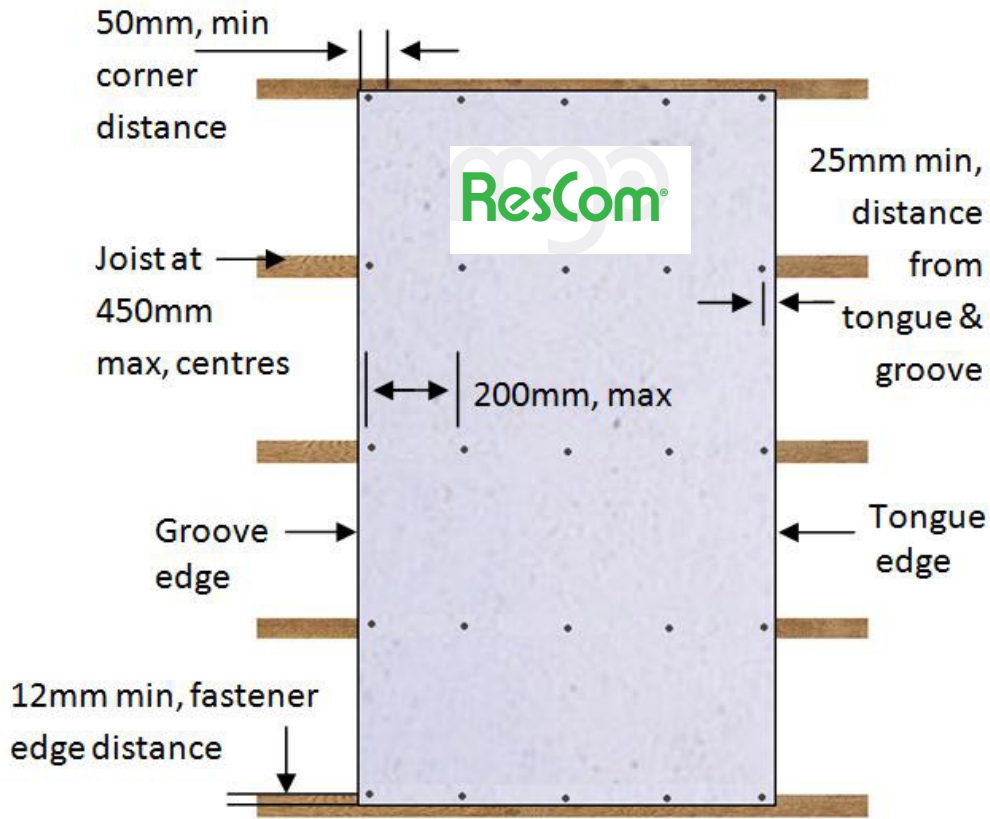
Use of timber framing must be in accordance with AS 1684 – “Residential timber-framed construction” and the framing manufacturer’s specifications.

Steel Framing

Use of steel framing must be in accordance with AS 3623 – “Domestic metal framing” and the framing manufacturer’s specifications.

Panel Layout

Panels must be laid across the joists and sheet end joints should be staggered.



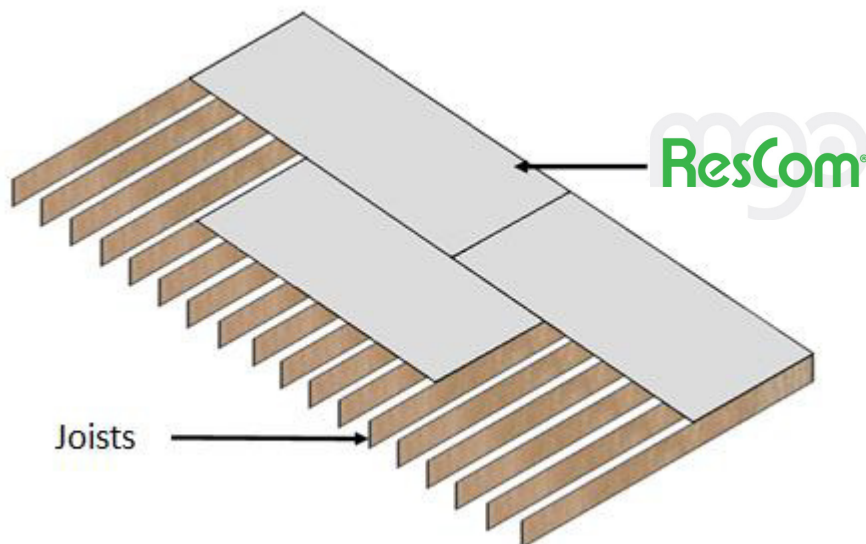
Fixing

Steel frames/ Timber frames:

ResCom® BP recommends using Buildex FibreZIPS Self-drilling screws.

Refer to Buildex brochure for fixing instructions.

The recommended screw size is 50mm galvanized screw.



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