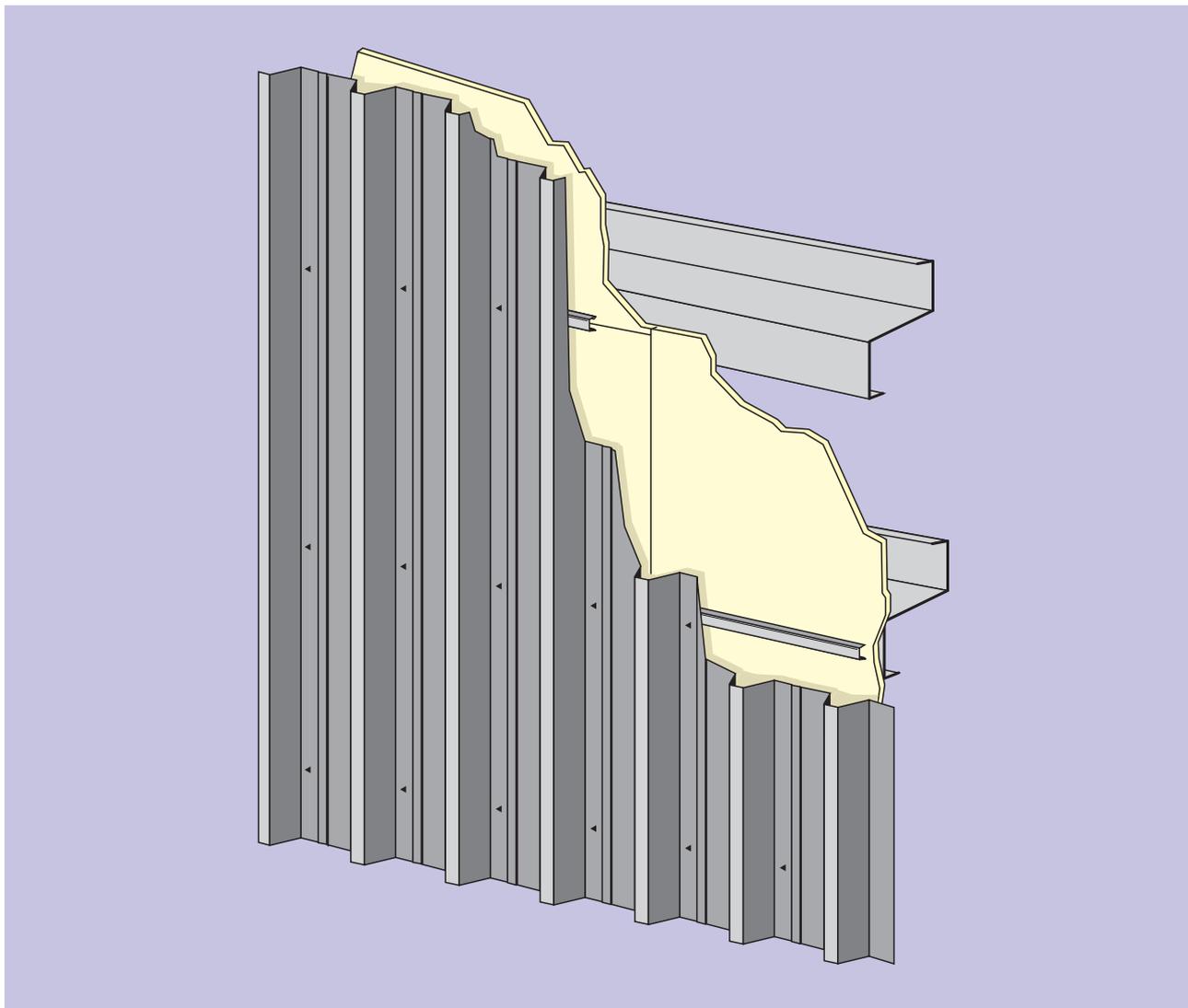# Stramit®

STRAMIT Uniguard™

FIRE-RESISTING WALL SYSTEM

p r o d u c t   t e c h n i c a l   m a n u a l

STRAMIT Uniguard™
FIRE-RESISTING WALL SYSTEM

The **Stramit Uniguard™ fire-resisting wall system** combines a single Promina®60 board with profiled steel wall cladding. The strength, simplicity and thermal insulation properties of the system make it an ideal boundary wall solution for industrial and commercial buildings.

Selection & Specification

System Description

The *Stramit Uniguard™ fire-resisting wall system* is a superior fire-rated wall cladding solution combining a single layer of specialist Promina®60 board with profiled steel wall cladding. The system offers a choice of *Stramit® Corrugated, Stramit Monoclad®* or *Stramit Longspan®* wall cladding.

The *Stramit Uniguard™ fire-resisting wall system* provides a simple, economical means of constructing fire-resisting walls on site boundaries, saving on installation time and costs and providing superior external fire protection.

The *Stramit Uniguard™ fire-resisting wall system* can easily be substituted for systems using multiple fireboards or other firewall systems. Contact Stramit Building Products for further information.

Stramit Uniguard™ fire-resisting wall system

- Steel girt
- Steel spacing batten
- Promina®60 board
- Profiled steel cladding (Stramit® Corrugated, Monoclad®, or Longspan® cladding)
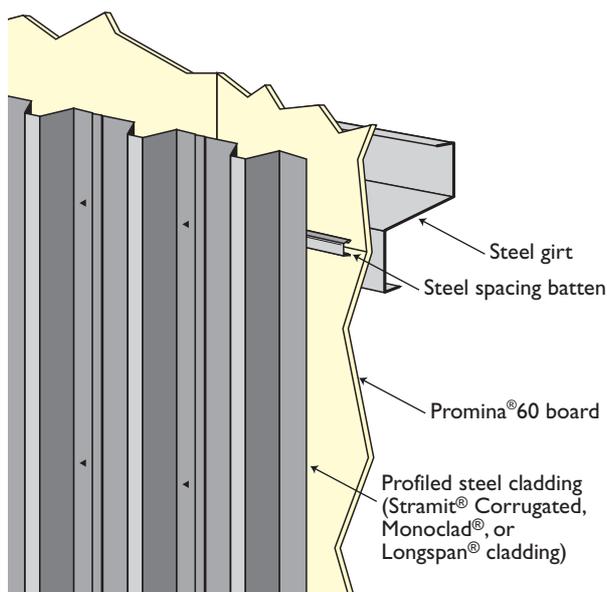
Features/Benefits

- Fire-resisting – Complies with the requirements of the Building Code of Australia (BCA2004).

- Low weight - Easy on-site transportation and installation.

- High-tensile steel frame – The strong, lightweight frame allows reduction in foundation size.

- Conventional construction – Low-cost, speedy construction, no need for specialist trades.

- Single layer lining board – Easy install, easy to inspect, giving confidence in the system.

- Durable – Water, fire and vermin resistant; no additional coatings required.

- Warranty – Wall cladding material warranties (COLORBOND® steel and ZINCALUME® steel).

- Widespread availability – Quick delivery across Australia; available through Stramit Building Products distribution network.

- Flexible design – Lining boards are only required close to boundary, allowing economical conventional construction for remaining walls.

- Versatile cladding options – Choice of Stramit® cladding profiles and rib orientation.

- Additional benefits – Acoustic insulation; uniform internal wall appearance; easily painted if required; all system components can be repaired or replaced if damaged by fire.

Applications

The combined strength and thermal protection properties of the *Stramit Uniguard™ fire-resisting wall system* make it the ideal boundary wall solution for industrial and commercial buildings. The simplicity of the system significantly reduces firewall building procedures and construction times.

The Promina®60 board is very durable and is resistant to fire, water and vermin.

The *Stramit Uniguard™ fire-resisting wall system* is to be used as an external wall system for single-storey Class 7b and 8 buildings of type C construction as defined in the Building Code of Australia (BCA2004).

The *Stramit Uniguard™ fire-resisting wall system* is suitable for use in both non-cyclonic and cyclonic regions. However be advised that in the event of a cyclone the system, as with all metal cladding systems may lose functionality and need replacement.

Note: The Stramit Uniguard™ fire-resisting wall system is intended only for commercial and industrial wall cladding applications. Do not use for any other purpose.

BCA Fire Resistance

The *Stramit Uniguard™ fire-resisting wall system* provides a solution to the BCA requirements for external walls of buildings with floor area less than 2000m^2 in Class 7b and Class 8 buildings (factories and warehouses) of type C construction. The system conforms to the BCA requirements for an 'alternative solution' (i.e. that can be demonstrated to be equivalent to the Deemed-to-Satisfy provisions). Testing has shown that the *Stramit Uniguard™* system can meet the radiant heat flux exposure limits of Verification Method CV1.

Full details of the testing, BCA alternative solution verification and system constraints and limitations are provided in Warrington Fire Research Report No. 40981B and subsequent appended opinions. Copies of the report are available from Stramit Building Products.

To meet BCA alternative solution requirements, it is essential that the details provided in this technical manual and the WFRA report are fully adhered to. It is recommended to submit the report to the relevant regulatory authorities to gain approval of the proposed alternative solution.

Care in Use

To preserve the fire resistance qualities of the Promina®60 board, no holes should be created in the boards with nails, poster pins, etc.

Materials

The Promina®60 board is manufactured from calcium silicate, which looks and feels like conventional fibrous cement board.

Promina®60 boards are supplied in a standard size of 2400 x 1200mm with a thickness of 15mm and a mass of approximately 41kg per board.

Stramit® wall cladding is manufactured from hi-tensile G550 COLORBOND® or ZINCALUME® steel. In some locations COLORBOND® Ultra steel may be available by arrangement or galvanised steel available for special service environments. COLORBOND® and COLORBOND® Ultra steel is in accordance with AS2728-Category 3 and, for the substrate, AS1397. ZINCALUME® AZ150 and galvanised Z450 steel conform to AS1397. Spacing battens are made from Z350 GALVASPAN® coated steel.

Stramit Building Products has a comprehensive range of COLORBOND® colours as standard. Refer to the COLORBOND® colour chart available from Stramit Building Products and refer to the nearest Stramit Building Products location for colour availability.

Adverse Conditions

Stramit Uniguard™ fire-resisting wall system is suitable for most non-coastal conditions; check external cladding technical manual for material selection.

Compatibility

All building products should be checked for compatibility with adjacent materials. Check for direct contact between materials, as well as where water runs from one material to another.

COLORBOND® and ZINCALUME® cladding must not be in contact with concrete surface and must have a free drip edge.

Note: Direct contact between the Promina®60 board and the steel cladding must be avoided by the use of spacing battens. See page 6 for details.

Testing

The *Stramit Uniguard™ fire-resisting wall system* has been tested by Warrington Fire Research, Victoria. Copies of the report can be obtained from Stramit Building Products.

Stramit cladding profiles have been comprehensively tested, including independent tests at the Cyclone Testing Station.

Architectural Specification

To ensure products of appropriate quality are used in construction of the firewall, use a specification similar to the following.

The walling shall be the *Stramit Uniguard™ fire-resisting wall system* where the external cladding is 0.42 or 0.48mm bmt Stramit® Corrugated, Monoclad® or Longspan® steel cladding. Design and installation must be in accordance with the manufacturer's published recommendations.

Specifications for all Stramit® cladding products can be found on the Stramit Building Products website and downloaded for insertion into documentation.

Acoustic Properties

While formal data is not currently available, the **Stramit Uniguard™** system has intrinsic acoustic properties that aid noise attenuation.

Water Tolerance

The Promina®60 board is water tolerant; if it becomes wet it will not rot, deteriorate or lose strength once dry.

Water Absorption

Absorption of water through the Promina®60 boards will not produce a detrimental effect to the boards themselves, however, items in contact with a damp board may react, cardboard boxes/fasteners/purlins and girts. The long performance of purlins and girts may be adversely affected if in contact with damp Promina®60 boards and any warranties previously granted by the supplier may be void. Hence, avoidance of water exposure to the boards is highly recommended.

Design

System Components

Wall girts (or Top hats) should be specified using the *Stramit® Purlins, Girts & Bridging Product Technical Manual* or the *Stramit® Purlin Design Member Moment Capacities – Product Technical Supplement.* Consideration should be given to the additional mass of the Promina®60 boards.

Promina®60 boards for the ***Stramit Uniguard™ fire-resisting wall system*** are a standard size design, therefore checks for performance are not required.

Spacing battens for the ***Stramit Uniguard™ fire-resisting wall system*** do not require additional design checks.

Wall cladding wind resistance should be checked using the Stramit Technical Manual for either *Stramit® Corrugated, Monoclad®* or *Longspan®* cladding.

Boundaries

The *Stramit Uniguard™* system allows external walls to be built right up to the boundary, if practical considerations allow. Allowance for gutters and downpipes must be made when considering the proximity of the wall to the boundary. Only the fire resisting wall sections need to be constructed using the *Stramit Uniguard™* system. The remaining walls except for the 3 metre setbacks may be constructed using a conventional Stramit® walling system, except for the setbacks.


Stramit cladding
Stramit Uniguard™ fire-resisting wall system
Setbacks (3 metres) using Stramit Uniguard™ system
Next building
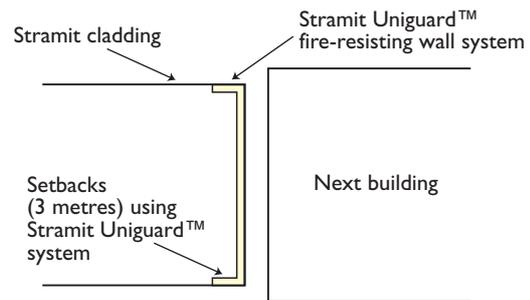
Wall integrity

Stramit Uniguard™ fire resisting walls must not be compromised by any penetrations or non fire resistant inclusions, such as windows/doors/piping/plumbing.

Orientation

The steel cladding of the ***Stramit Uniguard™ fire-resisting wall system*** may be fixed with a vertical or diagonal orientation. The steel cladding orientation is primarily aesthetic and does not affect system performance.


Vertical

Diagonal
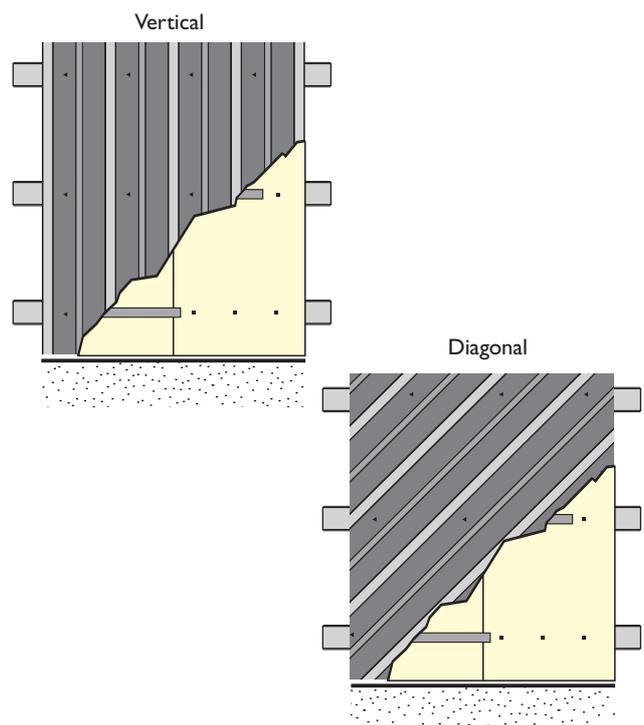
Spans

The **Stramit Uniguard™ fire-resisting wall system** is suitable for use in most categories (see pressure tables on page 7).

The system is limited to a maximum span of 1200mm, as shown in the diagram. This is also the preferred girt spacing for optimum support of the thermal board. The bottom row of girts must be no more than 100mm from the concrete slab.

Girt spacings must also take account of the fastener layout of the lining boards. Board cantilevers must not exceed 300mm.
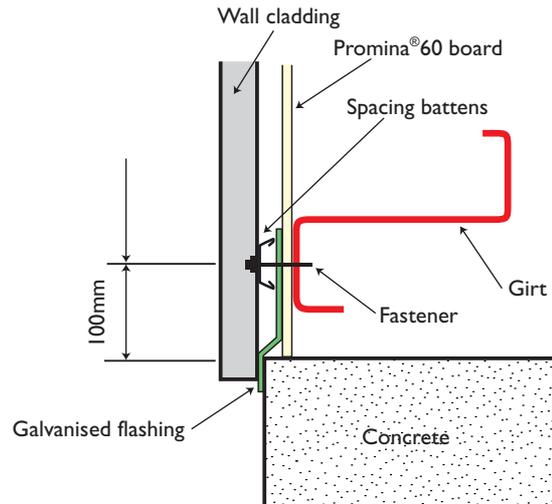
Horizontal joins between boards must also be supported by a girt, with both boards overlapping the flange.
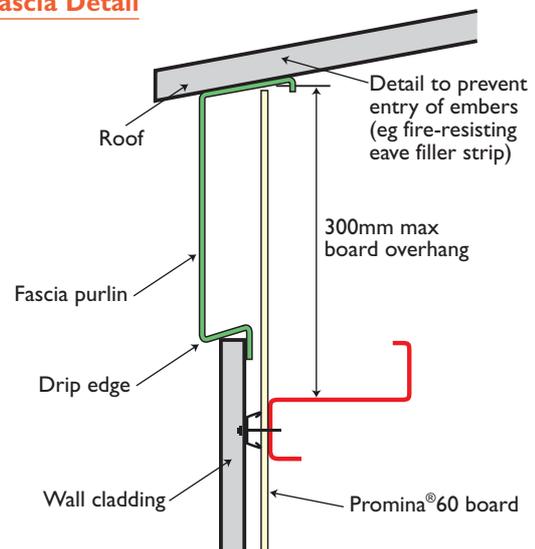
Note: Maximum girt deflection is L/150
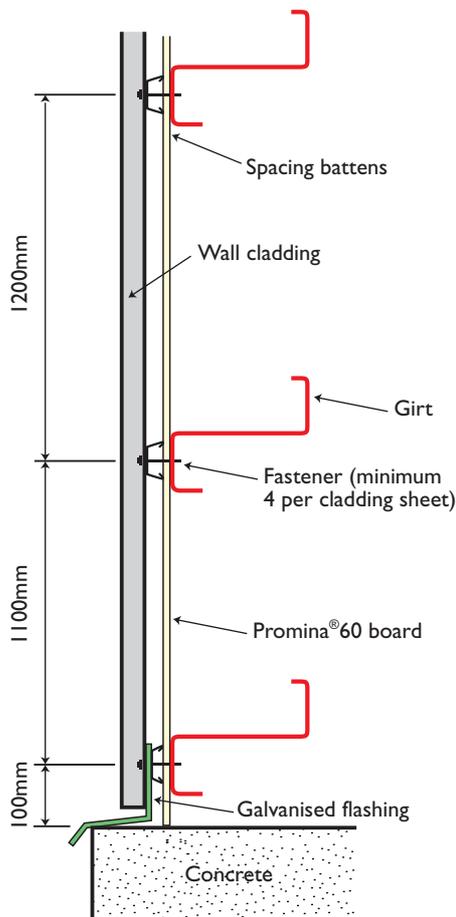
The gap between the concrete floor and the bottom row of boards should be no more than 5mm.

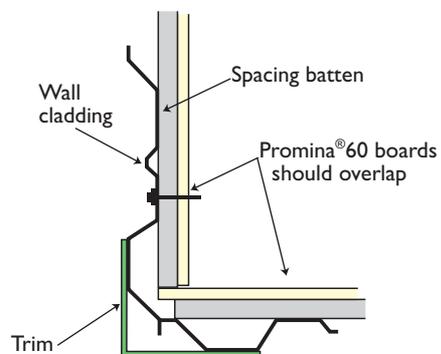Alternative flashing arrangement.

Fascia Detail

Corner Detail

Butt edges of the Promina®60 board tightly together Fill any gaps using *Promat Promaseal®* sealant.

See product technical manuals for *Stramit® Corrugated, Monoclad®* or *Longspan®* steel cladding, or the *Stramit® Roof & Wall Flashing Design Guide* for further flashing, trim and moulding options.

Note: Drawings not to scale.

Pressures

STRAMIT® WALL CLADDING – SERVICEABILITY LIMIT STATE CAPACITY			
Sheeting Profile	**thickness bmt (mm)**	**fasteners per sheet**	**kPa at 1200mm span**
Stramit Longspan®	0.42	4	3.78
	0.42	5	3.60
	0.48	4	4.88
	0.48	5	3.94
Stramit® Corrugated	0.42	5	2.54
	0.48	5	2.99
Stramit Monoclad®	0.42	4	2.34
	0.48	4	3.52

STRAMIT® WALL CLADDING – STRENGTH LIMIT STATE CAPACITY (Non-cyclonic)			
Sheeting Profile	**thickness bmt (mm)**	**fasteners per sheet**	**kPa at 1200mm span**
Stramit Longspan®	0.42	4	6.49
	0.42	5	8.11
	0.48	4	7.14
	0.48	5	8.76
Stramit® Corrugated	0.42	5	7.25
	0.48	5	9.30
Stramit Monoclad®	0.42	4	4.81
	0.48	4	7.46

Limit state pressures shown are applicable to equal, double and internal/end span combinations.

See product technical manuals for higher pressures, if required.

STRAMIT® CLADDING – STRENGTH LIMIT STATE CAPACITY (Cyclonic)				
Sheeting Profile	**thickness bmt (mm)**	**fasteners per sheet**	**kPa at 900mm* span**	**kPa at 1200mm span**
Stramit Monoclad®	0.42	4	3.75	2.98
Stramit® Corrugated	0.42	5	4.33	3.25

*Typically girt spacing has to be a decrement of 2400 (I.e 1200, 800 etc)

Pressure values based on a minimum girts thickness of 1.5mm.

Data for other profiles and thickness/fastener combinations not currently available.

Procurement

Prices

Product prices for the **Stramit Uniguard™ fire-resisting wall system** and its accessories can be obtained from Stramit Building Products or distributors of Stramit® products. Stramit Building Products does not provide an installation service; supply and fix price must be obtained from a tradesperson. Contact Stramit Building Products for the names of qualified tradespersons in your area.

When calculating the required quantity of the Promina®60 board, it is recommended that approximately 5% extra be ordered to allow for wastage and cutting during installation. Note that minimum order charges apply and there is a minimum order of five boards. Because the **Stramit Uniguard™** system is tested as a complete system, the Promina®60 boards are not sold separately.

Length

Standard Promina®60 board dimensions are 2400 x 1200mm. **Stramit Uniguard™ fire-resisting wall system** cladding is supplied cut-to-length. When designing or transporting long products, ensure the length is within the limit of the local transport authority regulations.

The manufacturing tolerance on the length of cladding product supplied is +0, -15mm.

Related products

Stramit® Flashing - A range of standard and custom flashing for covers and capping.

Promaseal® Acrylic Sealant - Acrylic fire sealant penetration gap sealant.

Spacing battens - The two Uniguard galvanised spacing battens shown below are recommended for the use in the **Stramit Uniguard™** system, however, it is also acceptable to use Stramit® ceiling battens. In all cases, battens between the Promina®60 board and the cladding must be galvanised or Colorbond® steel and between 12.5mm and 40mm deep. Do not use aluminium, Zincalume® or combustible materials.
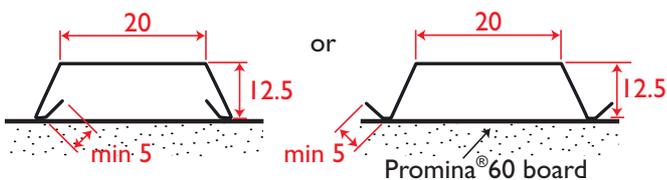
Ordering

Stramit Uniguard™ fire-resisting wall system can be ordered directly, through distributors, or supplied and fixed by a contractor.

Delivery/Unloading

Delivery can normally be made within 48 hours (subject to the delivery location, quantity and material availability) or at a prearranged date and time. Ensure that suitable arrangements are made for truck unloading, as this is the responsibility of the receiver.

Handling/Storage

Stramit Uniguard™ fire-resisting wall system components should be handled with care to avoid damage. Component packs should be kept dry at all times and the Promina®60 boards should be stored above ground while on site and kept covered until use.

Installation

Some states may need formal training for personnel installing fire-resisting system. Please contact your nearest Stramit location for details.

Site Induction

Consideration should be given to handling and installation issues as part of site induction safety procedures. Specific consideration should be given to pack handling, avoidance of cuts, trips, slips and falls, long sheet handling (particularly in windy conditions), sheet cutting procedures and surface temperature on sunny days. Personal protection equipment (PPE) should always be used.

Fasteners

All fastening screws must conform to AS3566-Class 3 or 4. Sheeting fasteners should be hexagon-headed and may be used with sealing washers.

For pan-fixing cladding to girts

– No.12x45mm hex head self-drilling and threading screws, (for use with 12.5mm spacing batten. For cyclonic areas use No. 14 screws)

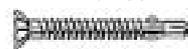– No. 12x55mm hex head self-drilling and threading screws, (for use with 25mm spacing batten)

– No. 12x65mm hex head self-drilling and threading screws, (for use with 40mm spacing batten)

(for cyclonic areas use No. 14 screws)

For fixing Promina®60 boards to girts

– No.10x35mm wing-tipped and rib-head screws

– No.12x35mm hex head self-drilling and threading screws may also be used.

Fastener quantities should allow for general wastage and loss of screws.

Installation

Installation of the **Stramit Uniguard™ fire-resisting wall system** is a straightforward procedure using the following recommended fixing sequence:

1. Ensure all girts are in line and correctly installed. (If alternative flashing arrangement is desired, point 6 should be used next).

2. Fix the full-length Promina®60 board through its centre to the girt using 3 fasteners keeping plumb. Fasteners must not be used within 100mm of board edge. The top of the board should rest against a girt, leaving enough of the girt so that the bottom of the next board overlaps the girt and is supported against inward movement. The joins do not need to be fastened at this stage because the boards will be held in place by the spacing battens and secured by the sheet fasteners.

Note: The gap between the concrete floor and the bottom row of boards should be no more than 5mm. Boards should also be fixed to the lowest girt with three recommended fasteners.

Promina®60 boards secured to girts

Steel girt

Bottom row of boards
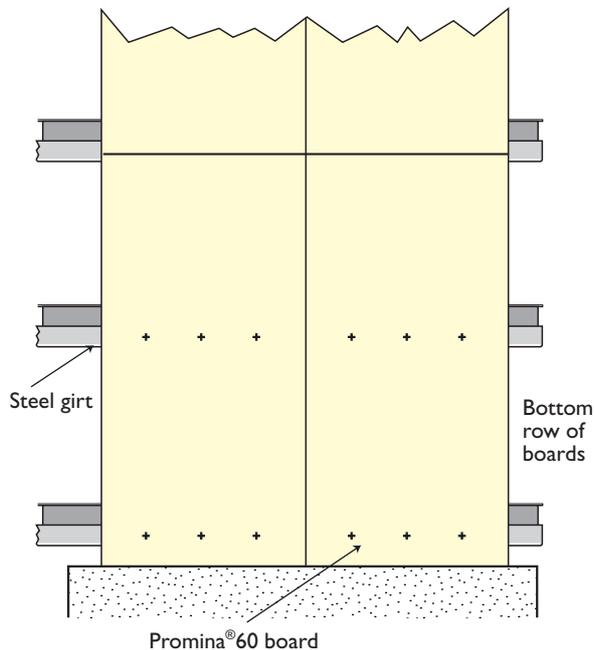
Promina®60 board

N.B for the two outer screws leave a minimum of 100mm gap from board edge.

It is also acceptable to stagger boards as shown below.
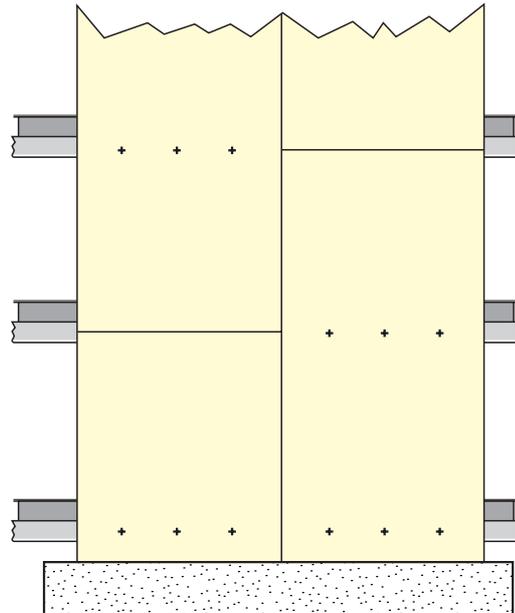
Note: Promina®60 boards have one side slightly more uniform than the other. It is preferable that this side be positioned facing into the building. This is an aesthetic issue only and not performance related.

3. Butt the next board tightly up against the already attached board and fix as before. Repeat for any higher rows of boards.

4. Line up spacing battens with the girts and fix temporarily with adhesive tape.

5. Position and fix bottom flashing.

6. Position and fix the first cladding sheet, ensuring correct sheet overhangs. Ensure screws are not over-tightened and are in line with girt and spacing batten. Use a minimum of 4 fasteners per sheet at each support.

7. Fix subsequent sheets, checking that sheet ends at the lower edge are exactly aligned. Ensure that cladding and flashing are fitted so that the Promina®60 board is not visible from the outside. Use a minimum of 4 fasteners per sheet at each support.

8. Position and fix edge trims.

Steel spacing batten
Steel girt
Promina®60 board
Stramit® wall cladding
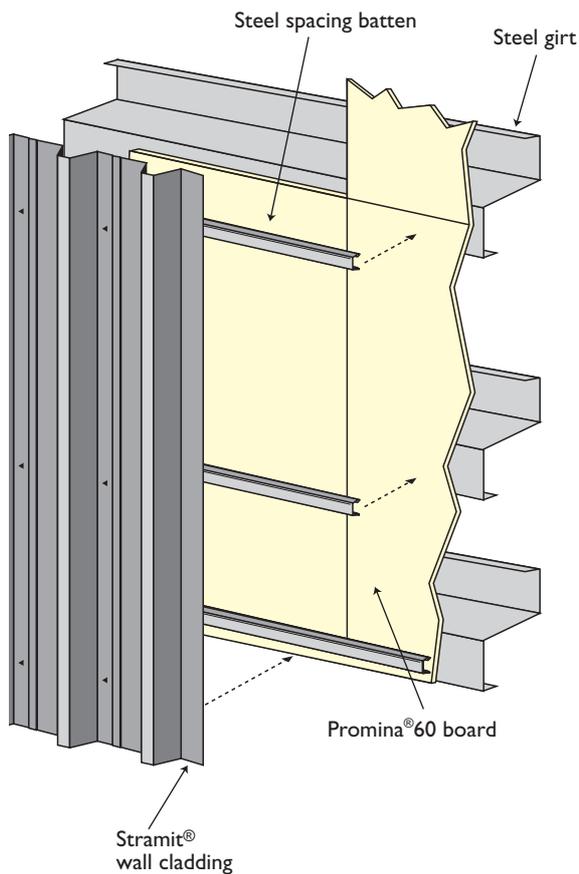
Contact a Stramit Technical Services representative for further installation details.

Tilt-up Frames

Tilt-up frames are possible, where the wall system is assembled on the ground and lifted into place. However, careful planning and execution are required to ensure the lift is even and the system does not suffer damage such as board cracking. If the Promina®60 boards are fixed flat, for tilt-up construction, walk only directly above the girts.
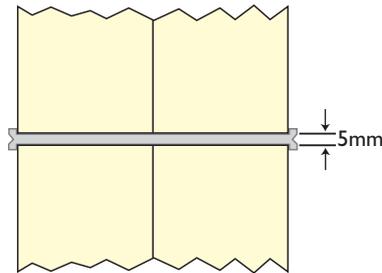
Gaps

Promina®60 boards are accurately cut at right angles, but it is possible that during installation small gaps may occur, mainly due to site irregularities. The following diagrams show the maximum gap allowance at various points of the system.
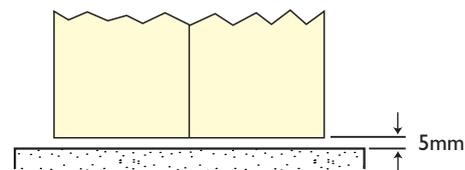
Air gap between boards (max. 2mm)

2mm
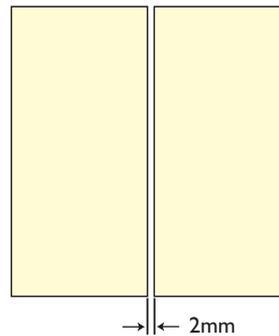
Gap between boards at girt (max. 5mm)

5mm

Gap between boards and floor slab (max. 5mm)

5mm

N.B Promat Promaseal® acrylic fire penetration sealant may be used to seal gaps that exceed these dimensions.

Good Practice

Stramit Building Products recommends that good trade practice be followed when using this system, such as described in Australian Standards Handbook HB39.

Handling

Promina®60 board
Use a Class P2 (particulate) respirator, wear leather or cotton gloves and dustproof goggles if previous cutting or sanding causes potential dust generation.

To reduce handling damage, the boards should be carried upright.

Steel Cladding
Wear safety glasses with side shields when cutting or trimming steel products. Cut-resistant or leather gloves should be worn when handling steel products. Foot protection should be worn when handling and transporting products.

Cutting

Stramit Uniguard™ fire-resisting wall system cladding components can be easily cut using a power saw with a steel cutting blade or tin snips. Avoid the use of abrasive discs as these can cause burred edges and coating damage. The Promina®60 board can be easily cut, where required, using conventional tools (tungsten-tipped saws, etc.).

Dust deposits created from cutting or screwing of board and any metallic off-cuts from cladding must be disposed of carefully. The use of a vacuum bay is recommended.

Painting

Promina®60 boards can be painted using an acrylic paint if desired.

The natural un-painted board colour is off-white.

Additional Information

Maintenance

Exterior surfaces of metal products unwashed by rain, such as walls beneath eaves or awnings, can benefit from occasional washing to remove build-up of corrosive salts. A simple visible inspection of the Promina®60 boards is recommended.

Repair

Minor repairs may be made by adhering small patches of board using Promaseal® acrylic sealant. Any boards damaged during building must be replaced. If boards are cracked during subsequent use they must be repaired. Small holes up to 50mm may be filled with Promat Promaseal® acrylic sealant. Contact Stramit Building Products for further details on repair.

Material Safety Data Sheet

A material safety data sheet (MSDS) is available for the Promina®60 board used in the system.

Further Information

In addition to the standard range of Technical Manuals, Installation Leaflets, Case Studies and other promotional literature, Stramit Building Products publishes a series of guides to aid design.

These include:

*   Roof Slope Guide
*   Foot Traffic Guide
*   Roof System Selection Guide
*   Concealed Fixed Decking
*   Bullnosing, Curving and Crimping
*   Acoustic Panels
*   Cyclonic Areas
*   Spring Curving Guide

Copies of these guides or other literature can be obtained from any Stramit Building Products branch or downloaded from *www.stramit.com.au*

Other Products

Other Stramit® cladding products may be used as part of the *Stramit Uniguard™ fire-resisting wall system*. Before specifying an alternative cladding product, contact Stramit Building Products for further information. Stramit Building Products offers a wide range of building products, including:

*   Purlins and girts
*   Formwork decking
*   Roof and wall sheeting
*   Lightweight structural sections
*   Truss components
*   Gutters and downpipes
*   Fascia
*   Custom flashing
*   Insulation products
*   Fasteners

References

In preparing this document reference has been made to:

*   Standards Australia Handbook – HB39 (Installation code for metal roof and wall cladding)
*   BlueScope Steel Technical Bulletins
*   Promat Australia Pty Ltd
*   Fire reports (Warrington Fire Research)

The Stramit web page can be found at:
www.stramit.com.au
Details of many *Stramit*® products can also be seen on the RAIA site 'Product Selector' at:
www.selector.com.au

Stramit
Building Products

contact numbers for information

		prices	availability — products coating colours	general — other	technical — advice product data
SYDNEY Cnr Erskine Park & Mamre Rd Erskine Park NSW 2759	phone fax		**(02) 9834 0909** (02) 9834 0988	**(02) 9834 0900** (02) 9834 0977	**(02) 9834 0900** (02) 9834 0977
CANBERRA 4 Bass Street, Queanbeyan NSW 2620	phone fax		**(02) 6297 3533** (02) 6297 8089		
COFFS HARBOUR 6 Mansbridge Drive, Coffs Harbour NSW 2450	phone fax		**(02) 6652 6333** (02) 6651 3395		
NEWCASTLE 17 Nelson Road, Cardiff NSW 2285	phone fax		**(02) 4954 5033** (02) 4954 5856		
ORANGE 51 Leewood Drive, Orange NSW 2800	phone fax		**(02) 6361 0444** (02) 6361 9814		
MELBOURNE - KILSYTH 180-186 Colchester Road, Kilsyth VIC 3137	phone fax		**(03) 9721 8333**	**(03) 9721 8333** (03) 9721 8347	**(03) 9484 0193** (03) 9484 5060
MELBOURNE - BAYSWATER 491 Mountain Highway, Bayswater VIC 3153	phone fax	**(03) 9722 5555** (03) 9722 5519	**(03) 9722 5500**		
MELBOURNE - PRESTON 219 Dundas Street, Preston VIC 3072	phone fax		**(03) 9484 0193** (03) 9484 5060		
MELBOURNE - MULGRAVE 2 Faigh Street, Mulgrave VIC 3170	phone fax		**(03) 9484 0193** (03) 9484 5060		
ALBURY 18 Ariel Drive, Albury NSW 2640	phone fax		**(02) 6041 7600** (02) 6041 7666		
BENDIGO Ramsay Court, Kangaroo Flat VIC 3555	phone fax		**(03) 5447 8455** (03) 5447 9677		
HOBART Farley Street, Derwent Park TAS 7010	phone fax		**(03) 6272 4500** (03) 6272 0967		
LAUNCESTON 9 Richard Street, Western Junction TAS 7212	phone fax		**(03) 6391 9293** (03) 6391 8774		
ADELAIDE 11 Stock Road, Cavan SA 5094	phone fax		**(08) 8262 4444** (08) 8262 6333		
BRISBANE 57-71 Platinum Street, Crestmead QLD 4132	phone fax		**(07) 3803 9999** (07) 3803 1499		**(07) 3803 9999** (07) 3803 1499
TOWNSVILLE 402-408 Bayswater Road, Garbutt QLD 4814	phone fax		**(07) 4779 0844** (07) 4775 7155		
CAIRNS Vickers Street, Edmonton QLD 4869	phone fax		**(07) 4045 3069** (07) 4045 4762		
MACKAY Brickworks Court, Glenella QLD 4740	phone fax		**(07) 4942 3488** (07) 4942 2343		
MARYBOROUGH 10 Activity St, Maryborough QLD 4650	phone fax		**(07) 4121 2433** (07) 4123 3139		
GLADSTONE 25 Beckinsale St, Gladstone QLD 4860	phone fax		**(07) 4972 8455** (07) 4972 8355		
ROCKHAMPTON 174-176 Alexandra St, Nth Rockhampton QLD 4701	phone fax		**(07) 4927 3855** (07) 4922 2857		
DARWIN 55 Albatross Street, Winnellie NT 0820	phone fax		**(08) 8947 0780** (08) 8947 1577		
PERTH 605-615 Bickley Road, Maddington WA 6109	phone fax		**(08) 9493 8800** (08) 9493 8899		
BUNBURY 25 Proffit Street, Bunbury WA 6230	phone fax		**(08) 9721 8046** (08) 9721 8017		

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