



Installation Guide

ComTex™ Facade Panel
and Fixing System

COMMERCIAL

Australia June 2020

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1 INTRODUCTION

1.1 APPLICATION

ComTex™ facade panel and fixing system is designed for commercial applications. It provides an economical method of constructing a monolithic texture-coated facade without the weight disadvantage associated with masonry. The system has three components:

- ComTex™ facade panel and fixing system
- ComTex accessories
- Texture coating system - supplied by others
(See Section 11, Components.)

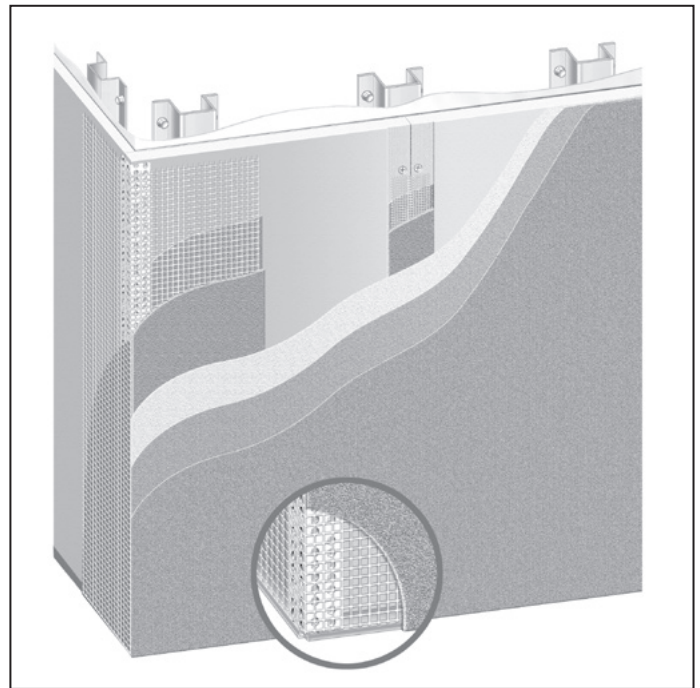


FIGURE 1 TYPICAL JOINTING AND COATING SYSTEM

The specifier or the party responsible for the project must ensure the details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope and specifications of this guide.

Component 1 - ComTex™ facade panel and fixing system

Component 1 is the specifically-designed 9.0mm thick ComTex™ facade panel and fixing system. These panels are recessed along their two longer sides to facilitate the construction of concealed joints. The panels can be fixed to light gauge steel or timber framing and provide a strong, impact-resistant substrate for Component 3, the texture system.

These panels are supplied pre-primed, ready for the application of the high-build acrylic texture system.

Component 2 - ComTex™ accessories

The following accessories are required for the successful installation of the ComTex™ facade panel and fixing system:

- ComTex™ top hat
 - Intermediate JH top hat
 - ComTex™ PVC starter strip
 - ComTex™ angle corner (supplied by texture coat company)
- For further details see Section 11, Components.

Component 3 - Texture system

ComTex™ facade panel and fixing system is site finished with a specialised high-build acrylic texture coating system that incorporates both reinforced jointing and texture coating. The texture system is supplied by a third party texture coating company.

Figure 1 illustrates a typical jointing and coating system.

The coating finish is available in a variety of textures, colours and gloss levels.

Both the jointing and coating system must be from the same manufacturer, and must form a complete system that is recommended by that manufacturer for application over ComTex™ facade panel and fixing system. This will ensure the final result is covered by the texture coat manufacturer's system warranties. We recommend that you contact the manufacturers to confirm these details before the job commences.

Coating systems applied to the ComTex™ facade panel and fixing system must be sufficiently flexible to accommodate stresses across sheet joints.

Where the texture coating is less than 2mm thick, a skimcoat will need to be applied first.

If ComTex™ facade panel and fixing system has been left uncoated for a considerable time, contact the texture coat manufacturer for advice on suitability of texture coat.

NOTE

In areas exposed to marine salt spray, James Hardie recommends that texture coatings be applied as soon as possible after sheet fixing to prevent salt build-up that could lead to fastener corrosion. For information on texture coats for use in marine environments, contact the texture coat manufacturer.

The texture system must be applied by an applicator approved and trained by the texture coat manufacturer. Both Dulux and Taubmans have recommended applicators operating in most areas.

The texture coating manufacturer will be responsible for providing the warranty for the coating and sheet joints. James Hardie will warrant only the ComTex™ facade panel and fixing system component of the system. For terms and conditions of warranty, refer to www.jameshardie.com.au.

For further information on suitable textured coating systems, please contact:

Dulux Customer Service

Toll free: 13 23 77

Fax: 1800 800 864

Taubmans Customer Service Centre

Toll Free 13 16 86

Fax 1800 676 746

Wattyl Hotline

Toll Free 13 21 01

Stoanz Australia Ltd

Tel +61 2 9560 9589

1.2 FACTORS TO BE CONSIDERED

The ComTex™ facade panel and fixing system is designed to provide a monolithic finish. The success of the system relies on a number of factors outside the control of James Hardie. We recommend that you work closely with one of the texture coat manufacturers and trained applicators, even before you specify or install the panels. Seeking the early advice of the texture coat manufacturer will ensure you select the most appropriate product for use with ComTex™ facade panel and fixing system. Involving the applicators early will help you achieve your particular texture coat requirements.

To get the best possible finish we recommend the following:

A straight frame:

The final finish depends on the straightness of the frame. The frame can be checked and straightened if it is out of tolerance. Refer to Clause 2.2.1 for the suggested frame straightness tolerances.

A minimum 2mm thick texture coat:

A high-build texture coat will help conceal joints. (See 1.3, Levels of Finish).

A low gloss finish:

A low gloss finish will help diffuse glancing light. For specialist advice contact the texture coat manufacturer.

Use of light coloured paints:

Avoid dark coloured coatings. For more information on levels of finish, refer to Clause 1.3.

1.3 LEVELS OF FINISH

Glancing light will result in some joint visibility. This is common in all monolithic texture coated facade systems. The extent of joint visibility is highly dependent on the quality of workmanship and the type of texture finish selected.

Higher build texture systems will give you the best finish. Vertical scratch coatings are best for disguising vertical joints. A trowel-on Tuscan finish gives a good smooth finish and, when applied well, can give an excellent quality finish. While high-build acrylic roll-on finishes are also acceptable, they are susceptible to joint show-through. When using these acrylic roll-on coatings, we recommend you use skimcoats under the applied texture to achieve a smooth monolithic finish.

In all cases, you must use the approved applicators and correct application techniques recommended by your chosen texture coating company.

The ComTex™ facade panel and fixing system must be texture coated within 90 days of installation.

Refer to your paint manufacturer representative for all texture coating advice.

James Hardie does not recommend tiling in an external application.

NOTE

The texture coat colour applied to the ComTex™ facade panel and fixing system, must have a Light Reflective Value (LRV) greater than 40%. Refer to the texture coat manufacturer for the coating's LRV.

1.4 FINISHES

To ensure the durability of James Hardie™ external cladding products the exterior surface **must** be finished with a suitable texture system in accordance with the coating manufacturer's written recommendations for fibre cement substrates.

2 FRAMING

2.1 GENERAL

James Hardie recommends that ComTex™ facade panel and fixing system be fixed to steel top hats (see Clause 2.2). ComTex™ facade panels may also be fixed to steel studs, (see Section 7), or to timber studs, (see Section 8).

2.2 TOP HAT FRAMING

2.2.1 Top Hat Sections

The normal method of fixing ComTex™ facade panel and fixing system is to use top hat sections as a subframe. Top hat sections are fixed vertically to the supporting structure.

A steel frame with a base metal thickness between 0.55mm and 1.6mm (BMT) must be used over a structural steel truss or girt because:

1. Fixing panels to trusses or girts is too rigid.
2. The fixing of the top hats can be included in the subcontract for panel fixing.
3. The panel fixer can pack the top hats to achieve a true plane, avoiding disputes regarding the regularity of the structural steel. A suggested tolerance is a maximum of 4mm in 3000mm.
4. Panels can be fixed quickly to the subframe using screws which require no pre-drilling of the steel (see Section 5).

2.2.2 Top hat layout

2.2.2.1 Straight facades

Typical framing is shown in Figure 2.

A light gauge metal angle (typically 0.75mm BMT) must be fixed along the top and bottom of the top hats to provide intermediate fixing points for the panel along the horizontal edges (see Figure 2).

2.2.2.2 Curved facades

The ComTex™ facade panel and fixing system can be used to construct curved facades.

Curving vertically oriented ComTex™ facade panel and fixing system generally requires two intermediate top hats per sheet.

TABLE 2 - WALLS

MAXIMUM COMTEX™ TOP HAT AND JH INTERMEDIATE TOP HAT SPANS (MM) FOR ULTIMATE DESIGN WIND PRESSURES														
SPAN TYPE	NOMINAL TOP HAT SPACING (mm)	ULTIMATE DESIGN WIND PRESSURE (kPa)												
		1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Single Span	300	2413	2108	1915	1778	1673	1589	1520	1461	1411	1367	1328	1293	1261
	450	2107	1841	1673	1553	1461	1388	1328	1277	1233	1194	1160	1115	1075
	600	1914	1672	1520	1411	1328	1261	1206	1160	1101	1050	1005	965	923
2 Span Continuous	300	3234	2825	2408	2106	1885	1711	1574	1459	1364	1281	1210	1147	1091
	450	2825	2245	1885	1639	1459	1321	1210	1119	1042	976	919	869	825
	600	2408	1885	1574	1364	1210	1091	997	919	854	787	721	666	619
3 Span Continuous	300	2981	2605	2366	2197	2042	1855	1706	1582	1479	1390	1312	1244	1184
	450	2605	2275	2042	1777	1582	1432	1312	1213	1130	1059	998	944	897
	600	2366	2042	1706	1479	1312	1184	1082	998	927	861	789	728	676

NOTES

1. Design wind pressures to be in accordance with AS1170.2 for ultimate strength design. Spans are based on a maximum deflection = span/240 at serviceability conditions.
2. For permissible design pressures, divide the ultimate strength design pressures by 1.5.
3. For fastener spacings, see Table 3.

To ensure a smooth appearance, the frame supporting the panels must be fixed to a true curve and be spaced at 300mm for curves less than 5m radius and 400mm for curves with a radius of 5-10m.

Minimum radii of curvature are shown in Table 1.

TABLE 1

MINIMUM RADII OF CURVATURE		
DIRECTION OF CURVATURE	CONVEX CURVATURE	CONCAVE CURVATURE
Across the panel	5.5m	7.0m
Along length of panel	4.0m	5.0m

2.2.3 Top hat spanning capacity

The spanning capacity of the 75 x 35 x 1.15mm ComTex™ top hat and the 50 x 35 x 0.75mm Intermediate JH top hat sections is shown in Table 2. The spacing of the top hats must be selected in conjunction with Table 3 in Section 5.2

The maximum cantilever distance of the top hats is one quarter of the single span shown in Table 2.

The maximum spacing of the ComTex™ top hats and Intermediate JH top hats must be as shown in Table 2. Requirements for fixing them to the structure are to be specified by the project engineers.

2.3 COASTAL AREAS

In coastal areas located within 1km of the shoreline or large expanses of salt water (e.g. Port Phillip Bay, Sydney Harbour east of the Spit and Harbour Bridges, Swan River west of the Narrows Bridge), the facade **must be washed down twice a year**. On un-protected walls rain will perform this washdown, but where walls are protected by soffits above, the washdown twice per year is a maintenance requirement.

3 PANEL INSTALLATION

3.1 PANEL LAYOUT

3.1.1 Layout for solid facade or fascia

A ComTex facade is formed by arranging the ComTex™ facade panel and fixing system in modules with maximum dimensions of 6m wide x 3m high. Each module is bordered by control joints. For details on control joints, see Clause 4.2.

Control joints are located a maximum of 6m from an internal corner and a maximum of 3m from an external set corner.

We suggest that each module is formed by placing vertical panels side by side, with half sheets at each end. The cut edges of the half sheets provide the square edge for the control joints (see Figure 3).

If half sheets are not used, remove the edge recess on the outside edge of each end sheet to provide the square edge needed for the control joint.

NOTE

James Hardie does not recommend that ComTex™ facade panel and fixing system be laid horizontally for facade applications, because glancing light accentuates the visibility of the horizontal set joints.

Horizontally laid ComTex™ facade panel and fixing system can be used to create a fascia up to 1.2m high (see Figure 4). Where the height of the fascia exceeds 1.2m, the panels must be arranged vertically.

3.1.2 Layout adjacent to openings

Where door and window openings are introduced into the facade, three joint configurations are required: set joints (see Clause 3.2); control joints (see Clause 4.2). These joints are positioned as shown in Figure 5.

3.2 PANEL JOINTING

ComTex™ facade panel and fixing system is joined using set joints.

The ComTex™ facade panel and fixing system is manufactured with a recess on the two long sides.

Set joints are constructed between adjoining panels by butting together the recessed edges of the panels.

The recess on the panel edges provides for the site-applied system of reinforcing tape and jointing compounds (see Figure 6).

NOTE

Tape and joint system is provided by the coating applicator.

When the panel's recessed edge has been cut away, we recommend you grind the edge to form a recess 1 to 1.5mm deep x 35mm wide for the joint, before the panel is fixed. This recess may be achieved by using a coarse belt sander or Hitachi Easy Bevel attachment fitted to an angle grinder. Both must have a dust extractor attached (see Section 9, Safe working practices). The ground recess must be primed before the joint is set.

The technique for panel jointing that results in the best finish is a joint that has not been feathered out beyond the recess.

NOTE

Set joints must not be made over non-recessed edges as an unsightly ridge will be evident under critical light conditions.

3.3 WEATHER BARRIER

A suitable water control membrane must be installed under James Hardie™ cladding in accordance with the AS/NZS 4200.2 'Pliable building membranes and underlays – Installation' and NCC requirements.

James Hardie has tested and certified the use of HardieWrap™ weather barrier for climate zones 2-8 within Australia. HardieWrap™ weather barrier is a Class 4 vapour permeable membrane that delivers a triple-shield of protection to help against external weather penetration, internal condensation management and external heat penetration through its safe-glare reflective layer.

If using an alternate product in lieu of HardieWrap™ weather barrier or the project is located in a hot humid area (Climate Zone 1), the designer must ensure that the product is fit for purpose and it has the following classification in accordance with AS/NZS 4200.1:2017 'Pliable building membranes and underlays – Materials':

WEATHER BARRIER CLASSIFICATION

CLIMATE ZONES	WATER BARRIER	VAPOUR PERMEANCE
2-8	High	Vapour permeable (Class 3 or 4)
1		Vapour Barrier (Class 1 or 2)

Soft compressible insulation installed between the front of the wall studs and directly behind the external cladding can cause installation issues and is thus not recommended.

3.4 THERMAL BREAK

National Construction Code (NCC) sections J1.5 and 3.12.1 volumes 1 and 2 respectively, state for both residential and commercial buildings a thermal break with an R 0.2m² K/W must be installed behind external cladding where the cladding and internal lining make direct contact with the same metal frame. For information relating to the suitability of James Hardie's HardieBreak™ thermal strip, refer to the HardieBreak™ Installation Guide at www.jameshardie.com.au

4 MOVEMENT JOINTS

4.1 GENERAL

Movement joints are required to limit stresses in, or remove stresses from the cladding. They can be control joints, structural joints and construction joints.

4.2 CONTROL JOINTS

Control joints are required around the perimeter of the module to allow for differences in thermal expansion between the ComTex™ facade panel and fixing system and the supporting structure. For layout, see Clause 3.1.1.

A control joint is a correctly-designed flexible joint, with a nominal width of 10mm (minimum width 8mm) consisting of sealant, plus bond breaking tape.

Sheet edges at control joints must be square cut. Do not texture over the sealant in the control joint.

4.2.2 Vertical control joints

The vertical control joint is constructed as shown in Figure 7.

4.2.3 Horizontal control joints

The horizontal control joint is constructed as shown in Figures 8 and 9. The noggings are cut from ComTex™ top hats and intermediate JH top hats which are fixed to the flanges of the vertical top hats.

4.3 STRUCTURAL JOINTS

Structural joints must be provided when they are required by the structural engineer. They must have total frame separation as shown in Figure 11. Structural joints are also required where two truss ends meet at a connection which allows movement.

4.4 CONSTRUCTIONS JOINTS

4.4.1 Vertical construction joints

Vertical construction joints are required where a ComTex™ facade panel and fixing system construction intersects with an existing structure (see Figure 12).

If cement render is applied to the existing masonry wall, do not render hard up against the ComTex™ facade panel and fixing system edge. Leave a 6mm joint between the render and ComTex™ facade panel and fixing system and fill with James Hardie™ Joint Sealant over bond breaker tape.

4.4.2 Horizontal construction joints

Horizontal construction joints are required where upper level ComTex™ facade panel and fixing system construction joins an existing ground floor structure. See base detail alternative 2, Figure 21.

5 FIXING

5.1 FASTENERS

Fasteners should have a minimum Class 3 finish. If you are not using winged screws, clearance holes for screws must be pre-drilled in the ComTex™ facade panel and fixing system.

Panels may be fixed to ComTex™ top hats and Intermediate JH top hats using winged self-drilling screws (e.g. James Hardie's 41mm HardieDrive™).

HardieDrive™ screws have a self-embedding head and are driven so that the screw head is just below the surface of the panel.

We recommend you fix from the centre of the panel and work outwards to ensure the panels are hard against the frame to avoid drumminess.

Refer to Section 5.3 on fastener durability.

5.2 FASTENER SPACING

Fasteners are spaced, as shown in Table 3, along panel edges and intermediate support framing.

TABLE 3

MAXIMUM FASTENER SPACINGS, TOP HAT AND STUD SPACING		
Design Wind Pressure (mm)	Top Hat / Stud Spacing (mm)	Max. Fastener Spacing (mm)
1.0	600	400
1.5	600	400
2.0	600	400
2.5	450	400
3.0	450	400
3.5	450	400
4.0	450	300
4.5	450	300
5.0	450	250
5.5	400	250
6.0	400	250
6.5	300	250
7.0	300	250

NOTES

1. Design wind pressures to be in accordance with AS1170.2 for ultimate strength design.
2. For permissible design pressures, divide the ultimate strength design pressures by 1.5.
3. The serviceability deflection has been limited to span/250.

Fasteners must not be closer than 12mm to panel edges or less than 75mm from panel corners (see Figures 13 and 14).

5.3 FASTENER DURABILITY

Fasteners must have the appropriate level of durability required for the intended project. This is of particular importance in coastal areas, subject to salt spray and other corrosive environments.

Fasteners must be fully compatible with all other materials that they are to be in contact with to ensure the durability and integrity of assembly.

Contact the fastener manufacturer for more information.

6 FIRE RATED WALLS

Fire rated systems for an application are selected on the basis of the required Fire Resistance Level (FRL) as set out by the National Construction Code (NCC).

Fire rated wall systems are constructed from lightweight steel framing that is lined **on both sides** with one layer of fire resistant plasterboard and one layer of ComTex™ facade panel and fixing system or Villaboard™ lining.

See Table 4 for the lining thickness required to achieve the three standard levels of FRL.

TABLE 4

REQUIRED LINING THICKNESSES FOR FRL		
REQUIRED FRL	LINING THICKNESS APPLIED TO BOTH SIDES	
	Villaboard™ lining (mm)	Fire resistant plasterboard (mm)
-/60/60	6	13
-90/90	6	16
-120/120	9	16

NOTE

ComTex™ facade panel and fixing system may replace the 6mm and 9mm Villaboard™ lining.

The ComTex™ facade panel and fixing system fire rated wall is constructed by fixing the linings described in Table 4 to top hats. (See Figure 26). HardieWrap™ weather barrier must be installed between the ComTex™ facade panel and fixing system and the fire resistant plasterboard and must lap into the base flashing (see Figure 27). Fire grade sealant must be used in the control joints between the ComTex™ facade panel and fixing system modules. For fixing information for fire resistant plasterboard and Villaboard™ lining, see James Hardie's Fire and Acoustically Rated Walls technical literature and the relevant internal lining installation guide

7 STEEL STUD FRAMING

7.1 GENERAL

Instead of using top hat sections, it is possible to create a ComTex™ facade panel and fixing system using a stud frame, fabricated from 0.55mm and 1.6mm BMT steel. This method suits smaller buildings or infill walls (see Figure 28).

The stud frame must be engineer-designed to meet relevant building regulations and standards, and the requirements of this manual.

7.2 STUD FRAMING

7.2.1 Spacing

Studs are spaced at 600, 400 or 300mm centres to suit design wind loads, see Table 2.

7.2.2 Stud sizing

To effectively join ComTex™ facade panel and fixing system on studs, the minimum flange width is 38mm. If studs with 35mm wide flanges are used, back to back studs are required behind the panel vertical joint (see Figure 28).

Alternatively an angle support may be fixed to the back of the stud (see Figure 29).

7.3 PANEL INSTALLATION

7.3.1 General

For layout of ComTex™ facade panel and fixing system and location of set and movement joints, see Section 3.

7.3.2 HardieWrap™ weather barrier

HardieWrap™ weather barrier must be installed behind the ComTex™ facade panel and fixing system on stud framed walls (see Clause 3.3).

Soft compressible insulation installed between the front of the wall studs and directly behind the external cladding can cause installation issues and is thus not recommended. For more information Ask James Hardie™ on 13 11 03.

7.4 MOVEMENT JOINTS

7.4.1 Layout

For location of control joints, see Clause 3.1.

7.4.2 Control joints

7.4.2.1 General

For general information on control joints, see Clause 4.2.

7.4.2.2 Vertical control joints

Vertical control joints are constructed as shown in Figure 31.

7.4.2.3 Horizontal control joints

Horizontal control joints are constructed as shown in Figure 32.

In two storey construction where movement is anticipated at floor level, an additional horizontal control joint may be necessary.

The appearance of this joint may be enhanced by covering it with one of the preformed architectural shapes which are supplied by a number of manufacturers (see Figure 33).

Standard architectural shapes are available, or they can also be produced to suit your requirements.

The architectural shape should be fully bonded and sealed to the top panel only using an adhesive recommended by the supplier. Generally, the components should be coated with a rigid polyurethane or cementitious material.

8 TIMBER STUD FRAMING

7.5 FIXINGS

For steel framing thickness of 0.5mm – 1.6mm BMT – use 41mm HardieDrive™ screws. Drive the heads of both screws just below the surface of the panel.

7.6 DETAILS

7.6.1 Corners

7.6.1.1 General

For location of control joints adjacent to external and internal corners, see Clause 3.1.1.

7.6.1.2 External corners

For setting external corners, see Clause 12.2.

7.6.1.3 Internal corners

The recommended method of finishing internal corners is to use a sealant joint as shown in Figure 35.

7.6.2 Slab joints

7.6.2.1 Head

Where the facade forms a junction with an exposed slab, the detail must provide for creep deflection in the slab. A design which allows for this deflection is illustrated in Figure 36.

7.6.2.2 Base

This junction can be treated in a number of ways, three of which are illustrated in Figures 37, 38 and 39. Figure 39 shows a guide to the termite treatment needed for a textured slab edge. For full specification, refer to a termite control system manufacturer.

Where the facade finishes inside the slab edge, it is essential to provide a set down in the slab (see Figure 38).

7.6.3 Fascia/soffit junction

Fascia/soffit junctions can be handled in different ways. One method is shown in Figure 40. See Clause 12.4 for alternative methods.

Whichever method is used, a drip edge or groove must be provided.

7.6.4 Windows

The ComTex™ facade panel and fixing system can be used with a range of window treatments:

1. Windows may be installed flush with the facade, in the shop front style (see Figure 41).
2. The facade around the window may be enhanced by the application of a preformed section (see Figure 42).

7.6.5 Parapet capping

For general information, see Clause 12.6.

For detail, see Figure 43.

7.7 FIRE RATED WALLS

ComTex™ facade panel and fixing system can achieve fire ratings of 60/60/60 and 90/90/90 when constructed as specified in James Hardie's Fire and Acoustically Rated Design Manual and Construction of Fire and Acoustically Rated Walls Technical Specification.

8.1 GENERAL

Kiln dried softwood may be used to support ComTex™ facade panel and fixing system. Conventional timber stud frames are suitable, or timber can be used as furring over steel framing.

NOTE

Timber used for building construction should have the level of durability appropriate to the relevant climate and expected service life conditions; that is, exposure to insect attack or to moisture which could cause decay.

The timber frame must be engineer-designed to meet relevant building regulations and standards and the requirements of this guide.

8.2 STUD FRAMING

8.2.1 Stud spacing

See Tables 2 and 3 for stud spacing.

8.2.2 Stud sizing

To effectively join ComTex™ facade panel and fixing system on studs, the minimum finished face width is 45mm. If 35mm minimum width studs are used, then back to back studs are required behind the vertical panel joints (see Figure 44).

Alternative detail for panel edge support, see Figure 45.

8.3 PANEL INSTALLATION

8.3.1 General

For the layout of ComTex™ facade panel and fixing system and location of set and movement joints, see Section 3.

8.3.2 HardieWrap™ weather barrier

HardieWrap™ weather barrier must be installed under the ComTex™ facade panel and fixing system on timber stud framed walls (see Clause 3.3).

8.4 MOVEMENT JOINTS

8.4.1 Layout

For location of control joints, see Clause 3.1.

8.4.2 Control joints

For general information on control joints, see Clause 4.2.

A 5mm minimum gap must be provided between the double studs or double noggings at control joints (see Figure 46).

8.4.3 Structural joints

For information on structural joints, see Clause 4.4.

A horizontal structural joint is required at the floor level of a timber framed structure to accommodate the anticipated shrinkage in the bearers and joists (see Figure 47). An engineer must specify the anticipated movement.

For information about how to enhance the appearance of this structural joint with an architectural shape, Ask James Hardie™ on 13 11 03.

8.4.4 Construction joints

For information on construction joints, see Clause 4.5.

8.5 FIXINGS

8.5.1 Fasteners

8.5.1.1 General

Fasteners should have a Class 3 finish to ensure they are protected against corrosion.

8.5.1.2 Hand driven fasteners

Use 40 x 2.8mm galvanised fibre cement nails. Nails should be driven flush with the surface, but not overdriven.

8.5.1.3 Gun driven fasteners

For information on gun nailing refer to Table 5.

8.5.2 Fastener spacing

For fastener spacing, see Clause 5.2.

8.5.3 Coastal areas

For fastener requirements for coastal areas, see Clause 5.3.

8.6 DETAILS

For details of external corners, slab junctions, fascia/soffit junctions, windows and parapet capping, see Section 7.6.

TABLE 5

GUN NAILING NOTES				
COIL NAILER		NAILS		
Manufacturer	Name	Manufacturer	Name	Size
Hitachi	VH650 coil nailer	Otter	Galv. coil nail	45mm x 2.2mm dia.
				50mm x 2.2mm dia.
Paslode	Impulse compact nailer (B20544)	Paslode	Impulse DekFast® 50mm Value Pack (B20561V)	50mm x 2.87mm dia.
			Impulse DekFast® 50mm Handy Pack (B20557)	50mm x 2.87mm dia.
Duo-Fast	KD665A coil nailer (Part No. D40040)	Duo-Fast	C27/32 GD coil nail (D41800)	32mm x 2.7mm dia. (only for 4.5mm HardieFlex)
Stanley-Bostitch	N80C coil nailer	Stanley-Bostitch	AC45P250 gal coil nail	45mm x 2.5mm dia.
Senco	SCN-60 coil nailer (fitted with adjustable depth of drive)	Senco	BTN 45 ADB Weatherex Gal and Sencoted	45mm x 2.5mm dia.

NOTES

1. Fasteners with equivalent dimensions, (i.e. head size and shape, shank diameter and length to those above) are acceptable for use.
2. All fasteners are to be galvanised or suitably coated for intended external application.
3. Nailing guns must be fitted with flush drive attachments.
4. Some nailing guns incorporate an adjustable head set to control nail depth (e.g. Duo-Fast coil nailer and Senco coil nailer.)
5. When gun nailing, apply pressure to the face of the cladding by holding the cladding against the stud to reduce blow out at back of the sheet.

Nail gun manufacturers have supplied the information contained in this table. Should a nail gun model or nail shown in the table not be available, please contact the relevant nail gun manufacturer for advice. If the nail gun overdrives sheets, contact nail gun manufacturer for advice.

8.7 FIRE RATED WALLS

ComTex™ facade panel and fixing system can achieve fire ratings of 60/60/60 and 90/90/90 when constructed as specified in James Hardie's Fire and Acoustically Rated Design Manual and Construction of Fire and Acoustically Rated Walls Technical Specification.

9 SAFE WORKING PRACTICES

WARNING - DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain sand, a source of respirable crystalline silica. **May cause cancer if dust from product is inhaled. Causes damage to lungs and respiratory system through prolonged or repeated inhalation of dust from product.**

Intact fibre cement products are not expected to result in any adverse toxic effects. The hazard associated with fibre cement arises from the respirable crystalline silica present in dust generated by activities such as cutting, rebating, drilling, routing, sawing, crushing, or otherwise abrading fibre cement, and when cleaning up, disposing of or moving dust.

When doing any of these activities in a manner that generates dust, follow James Hardie instructions and best practices to reduce or limit the release of dust, warn others in the area and consider rotating personnel across the cutting task to further limit respirable silica exposure.

If using a dust mask or respirator, use an AS/NZS1716 P1 filter and refer to Australian/New Zealand Standard 1715:2009 Selection, Use and Maintenance of Respiratory Protective Equipment for more extensive guidance and more options for selecting respirators for workplaces. For further information, refer to our installation instructions and Safety Data Sheets available at www.jameshardie.com.au. **FAILURE TO ADHERE TO OUR WARNINGS, SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.**

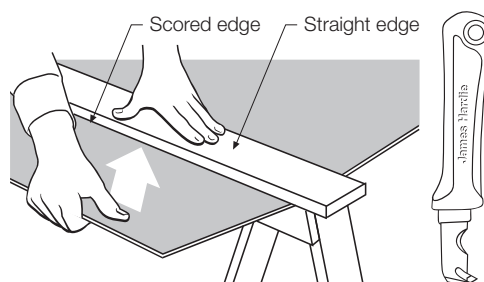
WORKING INSTRUCTIONS

Refer to recommended safe working practices before starting any cutting or machining of product.

Score and snap

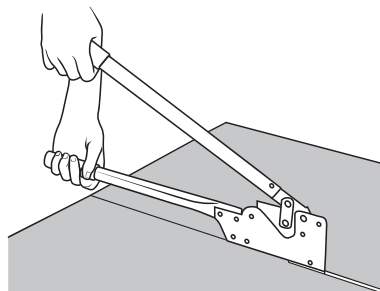
Score and snap is a fast and efficient method of cutting James Hardie™ building products using Villaboard™ score and snap knife.

Preferably score on the face side of the product. Score against a straight edge and repeat the action to obtain adequate depth for clean break – normally one third of sheet thickness. Snap upwards to achieve break. Smooth any rough edges with a rasp.



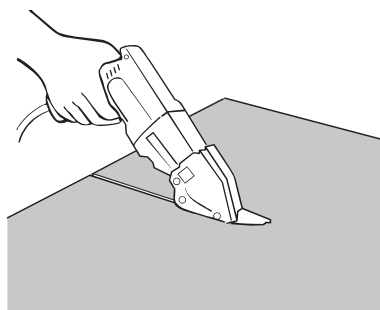
Hand guillotine

Make guillotine cut on the off-cut side of line to allow for the thickness of the blade.



Fibreshear

An electrically powered, fast, clean and effortless way of cutting James Hardie™ building products, especially around curves such as archways. Make fibreshear cut on the 'off-cut' side of the line to allow for the thickness of the shear.



JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES

CUTTING OUTDOORS

1. Position cutting station so wind will blow dust away from the user or others in working area.
2. Warn others in the area to avoid dust.
3. Consider rotating personnel across cutting tasks to further limit respirable silica exposures.
4. Use one of the following methods based on the required cutting rate:
 - Best** ▪ Villaboard™ knife ▪ Hand guillotine ▪ Fibreshear
 - Better** ▪ Position the cutting station in a well-ventilated area. Use a dust reducing circular saw equipped with HardieBlade™ Saw Blade or comparable fibre cement blade and well maintained M-class vacuum or higher with appropriate filter for capturing fine (respirable) dust. Wear a properly-fitted, approved dust mask or respirator (minimum P1).

CUTTING INDOORS

- Cut only using Villaboard™ knife, hand guillotine or fibreshears (manual, electric or pneumatic).
- Position cutting station in a well-ventilated area.

DRILLING/OTHER MACHINING

When drilling or machining you should always wear a P1 dust mask and warn others in the immediate area.

IMPORTANT NOTES

1. For maximum protection (lowest respirable dust production) James Hardie recommends always using best practice cutting methods where feasible.
2. NEVER use a power saw indoors or in a poorly ventilated area.
3. ALWAYS use a dust reducing circular saw equipped with a sawblade specifically designed to minimise dust creation when cutting fibrecement - preferably a sawblade that carries the HardieBlade™ logo or one with at least equivalent performance - connected to a M class or higher vacuum.
4. NEVER dry sweep - Use wet suppression, or an M class vacuum or higher with appropriate filter.
5. NEVER use grinders.
6. ALWAYS follow tool manufacturers' safety recommendations.
7. ALWAYS wear a properly fitted, approved dusk mask, P1 or higher

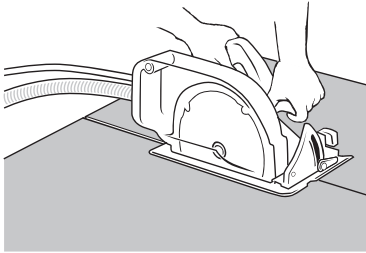
DUST MASKS AND RESPIRATORS

As a minimum, an AS/NZS1716 P1 respirator must be used when doing any activity that may create dust. For more extensive guidance and options for selecting respirators for workplaces please refer to Australian/New Zealand Standard 1715:2009 "Selection, Use and Maintenance of Respiratory Protective Equipment". P1 respirators should be used in conjunction with the above cutting practices to minimise dust exposure. For further information, refer to Safety Data Sheet (SDS) available at www.jameshardie.com.au. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

10 PRODUCT INFORMATION

HardieBlade™ Saw Blade

The HardieBlade™ Saw Blade used with a dust-reducing saw connected to a M class or higher vacuum allows for fast, clean cutting of James Hardie™ fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector which can be connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.



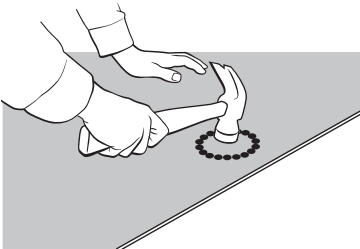
HOLE-FORMING

For smooth clean cut circular holes:

- Mark the centre of the hole on the sheet.
- Pre-drill a pilot hole.
- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.

For irregular holes:

- Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.



STORAGE AND HANDLING

To avoid damage, all James Hardie™ building products should be stored with edges and corners of the sheets protected from chipping.

James Hardie™ building products must be installed in a dry state and be protected from rain during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water, moisture, etc.

QUALITY

James Hardie conducts stringent quality checks to ensure any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

10.1 GENERAL

The basic composition of James Hardie™ building products is Portland cement, ground sand, cellulose fibre, water and proprietary additives.

James Hardie™ building products are manufactured AS/NZS 2908.2 'Cellulose-Cement Products-Flat Sheet'. These are also compliant with equivalent standard ISO 8336 'Fibre-cement flat sheets - Product specification and test methods'. For product classification refer to the relevant Physical Properties Data Sheet.

10.2 PRODUCT MASS

Based on equilibrium moisture content the approximate mass of ComTex™ facade panel and fixing system is 12.42kg/m².

10.3 DURABILITY

10.3.1 Resistance to moisture/rotting

ComTex™ facade panel and fixing system has demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS2908.2:

- Water permeability (Clause 8.2.2)
- Warm water (Clause 8.2.4)
- Heat rain (Clause 6.5)
- Soak dry (Clause 8.2.5)

10.3.2 Resistance to fire

The ComTex™ facade panel and fixing system is suitable where non-combustible materials are required in accordance with C1.9 of the National Construction Code.

James Hardie™ building products have been tested by CSIRO in accordance with AS/NZS 3837 and are classified as conforming to Group 1 material (highest and best result possible), with an average specific extinction area far lower than the permissible 250m²/kg, as referenced in Specification C1.10a of the National Construction Code (NCC).

10.3.3 Resistance to termite attack

Based on testing completed by CSIRO Division of Forest Products and Ensis Australia James Hardie™ building products have demonstrated resistance to termite attack.

10.4 ALPINE REGIONS

In regions subject to freeze/thaw conditions, all James Hardie fibre cement external cladding must be installed and painted in the warmer months of the year where the temperature does not create freeze and thaw conditions or paint issues. The cladding must be painted immediately after installation. In addition, fibre cement cladding must not be in direct contact with snow and/or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.

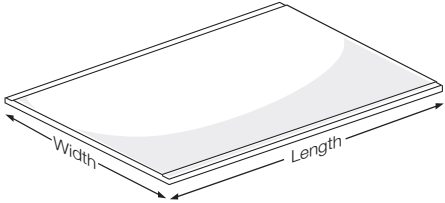
Furthermore, a reputable paint manufacturer must be consulted in regards to a suitable product, specifications and warranty. The paint application must not be carried out if the air temperature or the substrate temperature is outside the paint manufacturer's recommendation including the specified drying temperature range

James Hardie™ external cladding products are tested for resistance to frost in accordance with AS/NZS 2908.2 Clause 8.2.3.

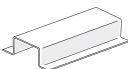


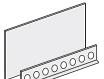
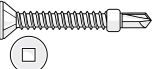
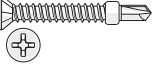

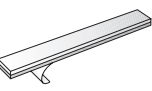

10.5 WARRANTY

For Warranty information visit www.jameshardie.com.au or call James Hardie on 13 11 03.

11 COMPONENTS

COMTEX™ FACADE PANEL AND FIXING SYSTEM (9mm THICKNESS)			
	Description:		ComTex™ facade panel and fixing system is an external cladding substrate for application of trowelled or roller applied high-build textured weatherproof acrylic finishes. Both long edges are rebated.
	Mass: 12.42kg/m ²		
	Length (mm):	Width (mm):	Thickness (mm):
	3000	1200	9

*All dimensions and masses are approximate and subject to manufacture tolerances.

COMTEX™ FACADE PANEL AND FIXING SYSTEM COMPONENTS		
	ComTex™ Top Hat. 6,000mm long A metal top hat for use with ComTex™ facade panel and fixing system, behind control joints. 75mm wide x 35mm deep x 1.15mm gauge thick x 6,000mm	50 Per Pack Part No: 304573
	James Hardie™ Intermediate Top Hat. 6,000mm long A metal top hat installed vertically for use with ExoTec™ and ComTex™ facade panel and fixing system, for intermediate sheet support. 50mm wide x 35mm deep x 0.75mm gauge thick x 6,000mm long.	50 Per Pack Part No: 305950
	James Hardie™ Intermediate Top Hat. 7,200mm long A metal top hat installed vertically for use with ExoTec™ and ComTex™ facade panel and fixing system, for intermediate sheet support. 50mm wide x 35mm deep x 0.75mm gauge thick x 7,200mm long.	50 Per Pack Part No: 305949
	ComTex™ PVC Starter Strip. 3,600mm long A perforated PVC extrusion used with ComTex™ facade panel and fixing system, to provide a straight edge to finish the texture coating. Fix at 200mm maximum centers to frame.	25 Per Pack Part No: 305553
	HardieDrive™ Screw 41mm long A class 3 self-tapping wing-tipped screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames.	1000 Per Box Part No: 305984
	HardieDrive™ Collated Screw 41mm long A class 3 self-tapping wing-tipped screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames. Suitable for use in most auto feed screw guns.	1000 Per Box Part No: 305982
	James Hardie™ Joint Sealant. 300mL cartridge A general purpose, paintable, exterior grade polyurethane joint sealant.	20 Per Box Part No: 305534
	HardieBreak™ thermal strip A building code requirement and is installed behind James Hardie™ external cladding over metal framing and HardieWrap™ weather barrier. Refer to HardieBreak™ thermal strip installation guide. Unit size 43 x 12 x 2750mm.	45 per pack Part No. 305612
	HardieWrap™ weather barrier A non-perforated, highly breathable and reflective safe-glare weather barrier designed to be used behind ComTex™ facade panel and fixing system to help protect the building. For alternate products, please refer to HardieWrap™ weather barrier section (p.5) Unit size 2750mm x 3000mm	1 Each No. 305664.
COMPONENTS NOT SUPPLIED BY JAMES HARDIE		
Joint setting and texture coating	Proprietary jointing and acrylic texture coat systems applied in accordance with the acrylic texture coat manufacturer's specification by their accredited applicators. Taped and set corners when required- to satisfy acrylic coat manufacturer's specification. NOTE: It is essential that components from different suppliers are not combined or blended, as they may not be compatible.	
Architectural shapes		
Fibre cement nail Galvanised nails for timber	2.8mm x 40mm	
Gun nails For fixing to timber	Refer to gun nail table (Table 5 on page 9)	

12 DETAILS

12.1 GENERAL

This section contains general details relating to the use of the ComTex™ facade panel and fixing system in external cladding applications. These details are referred throughout this general specification.

12.2 CORNERS

12.2.1 External corners

A number of methods may be used to form corners.

The preferred method is to set the external corner joint with a ComTex™ angle bead over square edged sheets. The ComTex™ angle bead has the attached fibreglass mesh embedded within jointing compound (see Figure 15).

An alternative method of setting the external corner joint is overlapping joint reinforcing tape within recessed panel edges (see Figure 16). For prime coating where the recess is site ground see Clause 3.2.

Two layouts for the supporting top hats are shown in Figures 17 and 18.

For location of control joints adjacent to external and internal corners, see Clause 3.1.1.

For setting external corners, see Clause 6.1.1.

12.2.2 Internal corners

We recommended that internal corners be set using a sealant joint as shown in Figure 19.

The recommended method of finishing internal corners is to use a sealant joint as shown in Figure 35.

12.4 SLAB JUNCTIONS

12.4.1 Head

Not used with top hat framing.

12.4.2 Base

This junction can be treated in a number of ways. Two possible treatments are illustrated in Figures 20 and 21.

12.4 FASCIA/SOFFIT JUNCTION

Fascia/soffit junctions can be handled in different ways. Two typical methods are shown in Figures 22 and 23.

Where the external corner fascia to soffit is to be set, see Figure 15 for the preferred method, or Figure 16 for an alternative method.

Whichever method you use, a drip edge or groove must be provided.

12.5 WINDOWS

The ComTex™ facade panel and fixing system allows you to consider a range of alternative window treatments. A detail for a flush shop front style of window is shown (see Figure 24, 41 and 42).

12.6 PARAPET CAPPING

The design of the metal parapet capping used on facade systems is particularly important.

Two rules should be followed:

1. Ensure the top of the capping slopes towards the roof.
2. Provide a drip edge at least 30mm out from the facade face. (see Figure 25 and 43).

Where the capping spans a control joint in the fascia, provide a sliding or sleeved joint in the capping at that point.

In addition, all joints in capping should be sealed with silicone sealant.

NOTE

All dimensions shown are in millimetres unless noted otherwise.

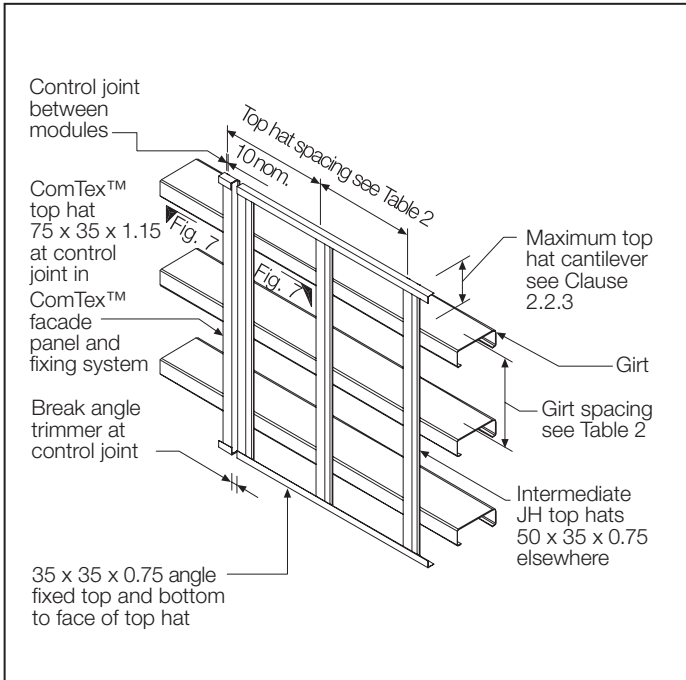


FIGURE 2 TYPICAL FRAMING - TOP HAT FIXED TO GIRTS

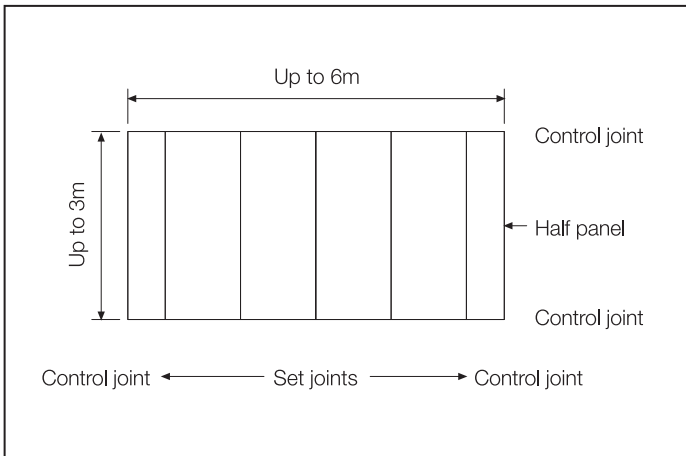


FIGURE 3 FACADE UP TO 3.0M HIGH

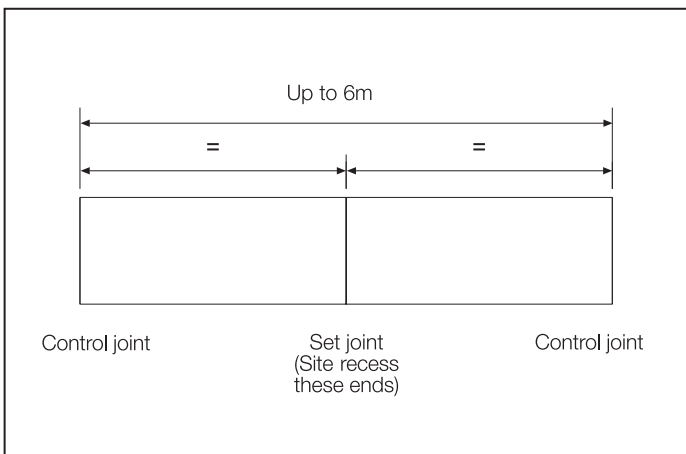


FIGURE 4 FASCIA UP TO 1.2M HIGH

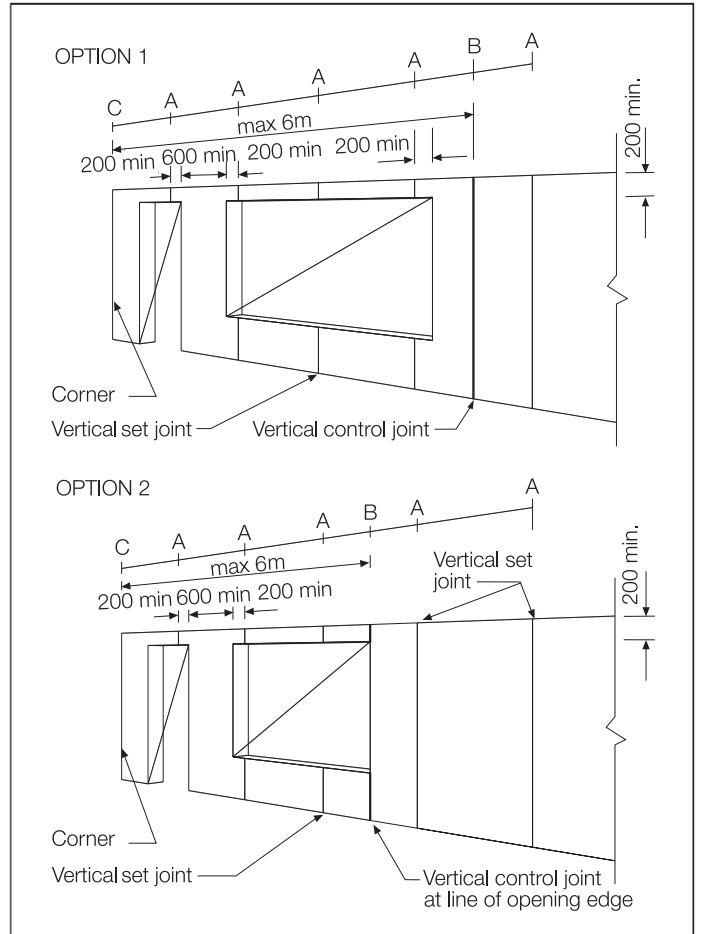


FIGURE 5 SET, CONTROL PANEL LAYOUT

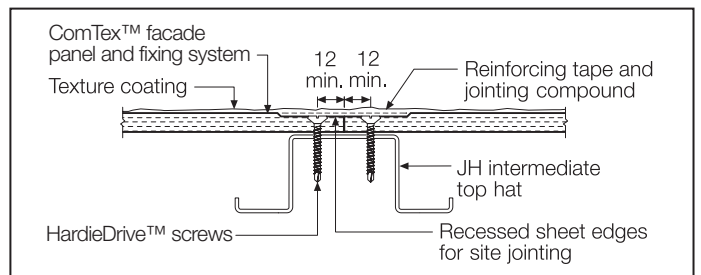


FIGURE 6 SET JOINT

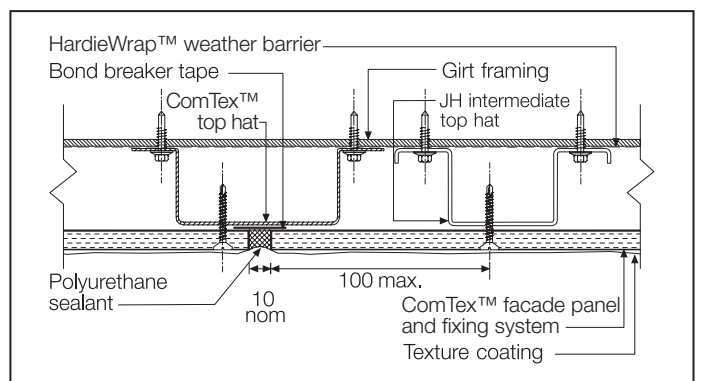


FIGURE 7 VERTICAL CONTROL JOINT

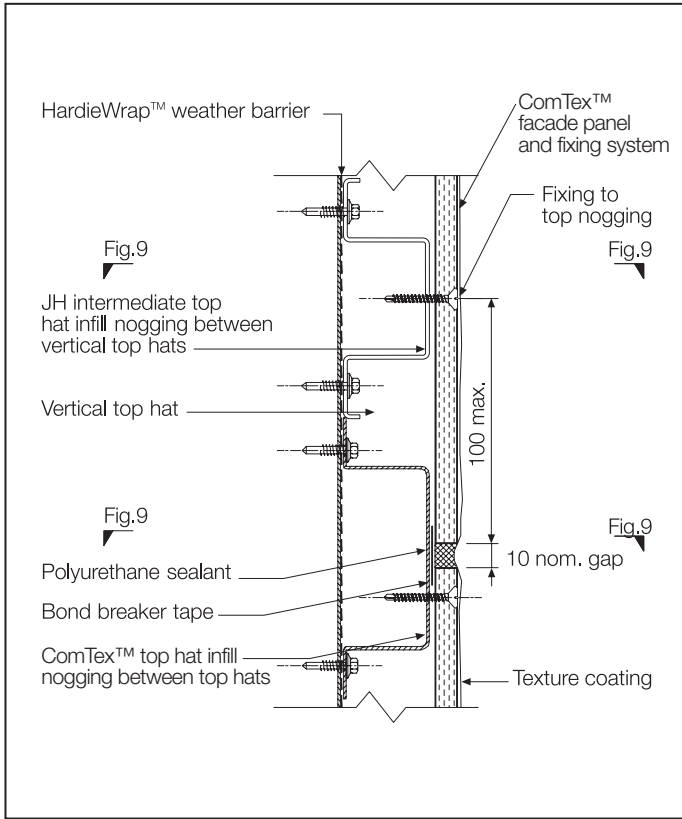


FIGURE 8 HORIZONTAL CONTROL JOINT

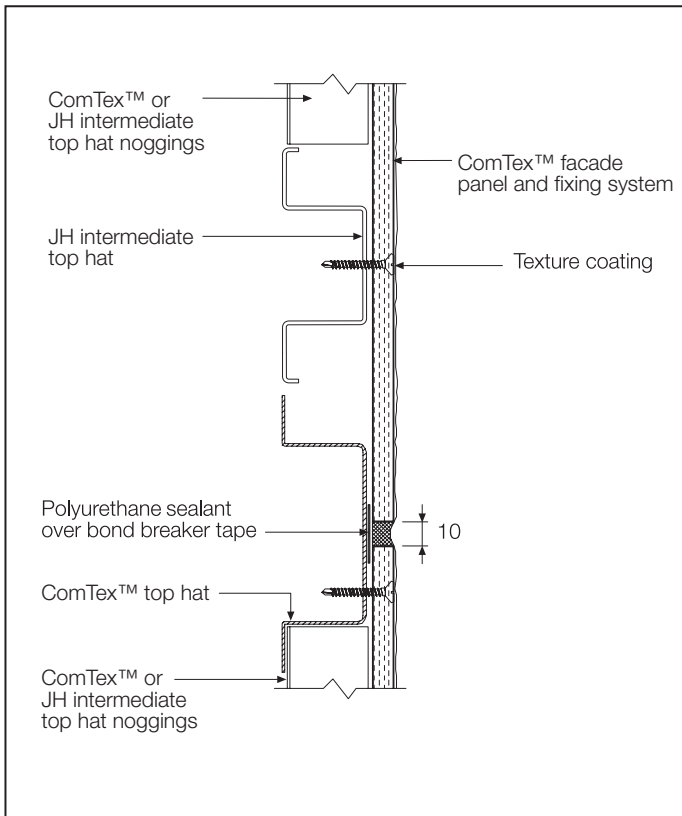


FIGURE 9 VERTICAL CONTROL JOINT ACROSS HORIZONTAL CONTROL JOINT

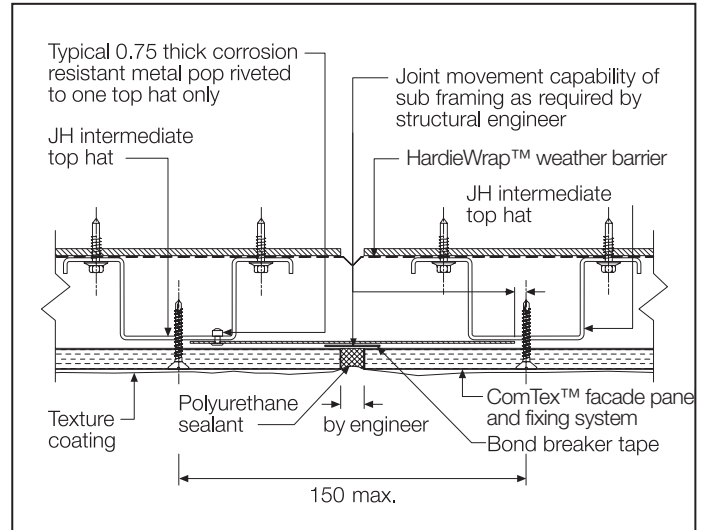


FIGURE 10 VERTICAL STRUCTURAL JOINT

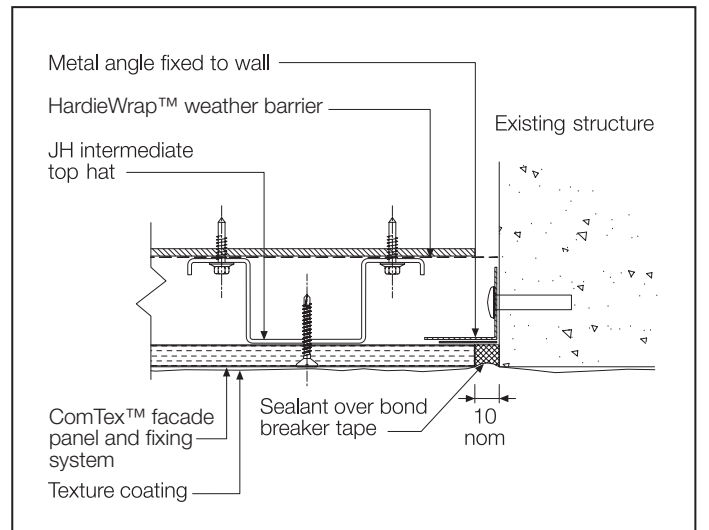


FIGURE 11 VERTICAL CONSTRUCTION JOINT

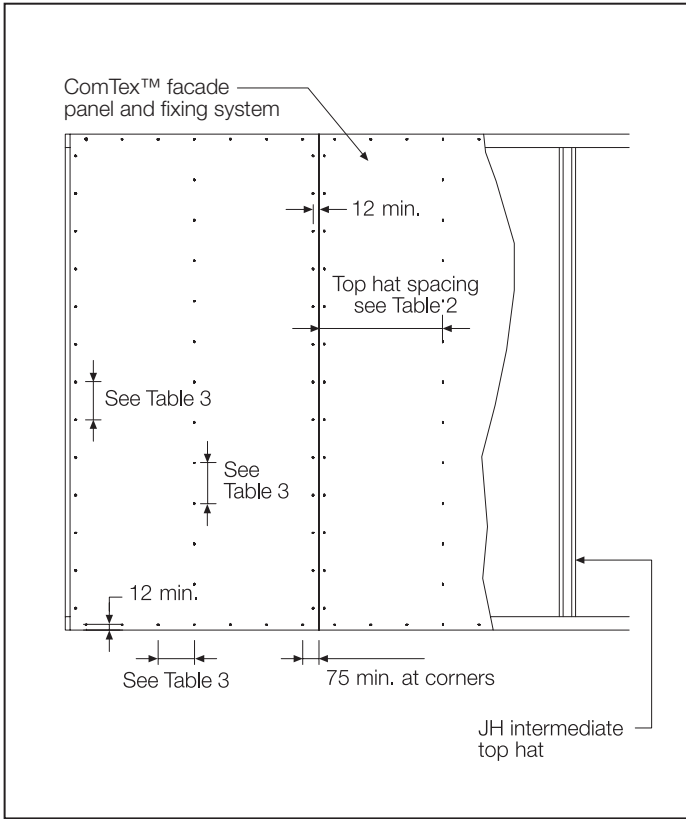


FIGURE 12 VERTICAL FACADE PANEL FIXING

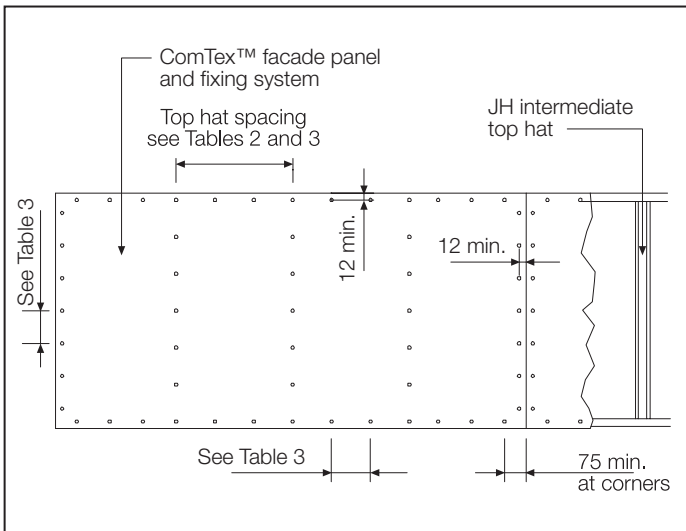


FIGURE 13 HORIZONTAL FASCIA PANEL FIXING

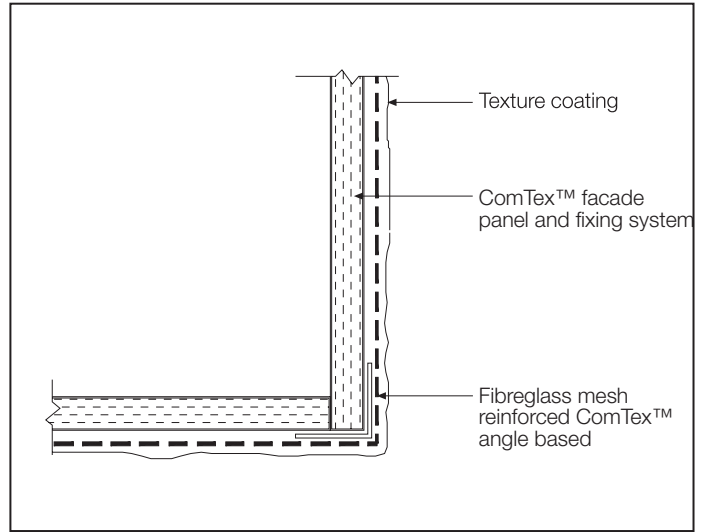


FIGURE 14 PREFERRED SET EXTERNAL CORNER

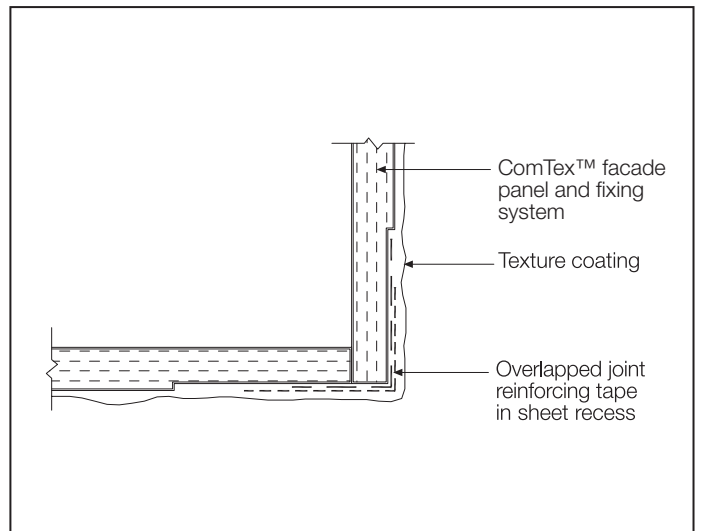


FIGURE 15 ALTERNATIVE SET EXTERNAL CORNER

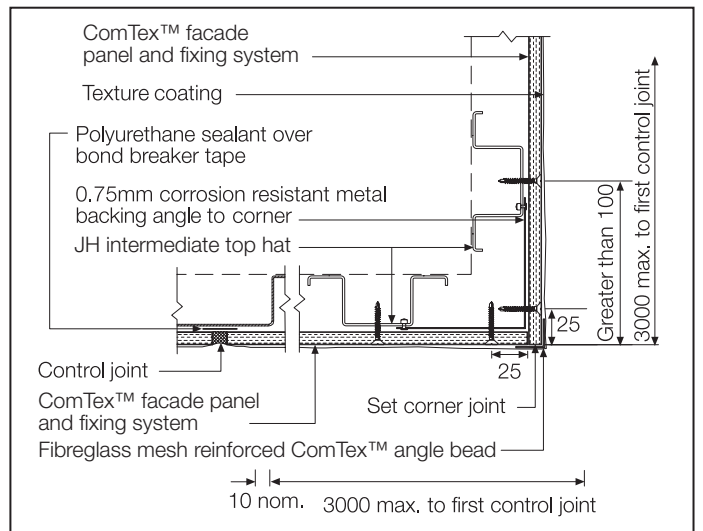


FIGURE 16 EXTERNAL CORNER

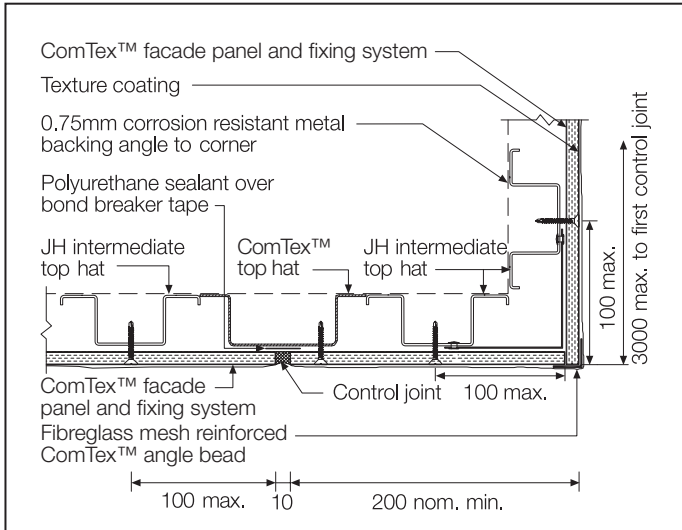


FIGURE 17 ALTERNATIVE EXTERNAL CORNER

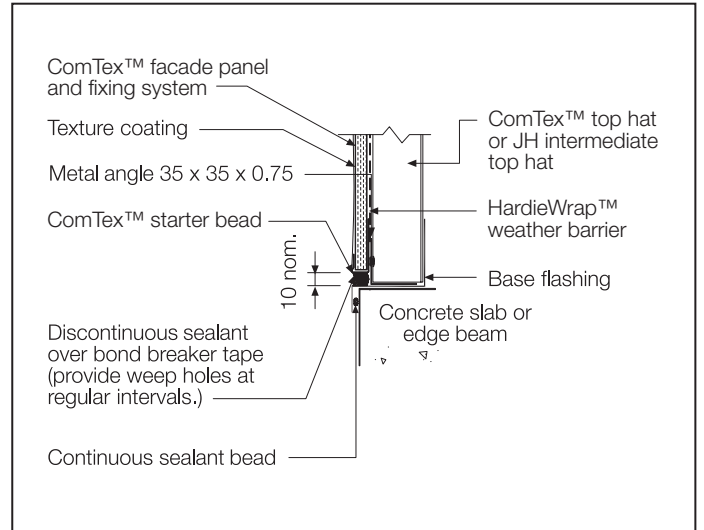


FIGURE 20 BASE DETAIL ALTERNATIVE 2

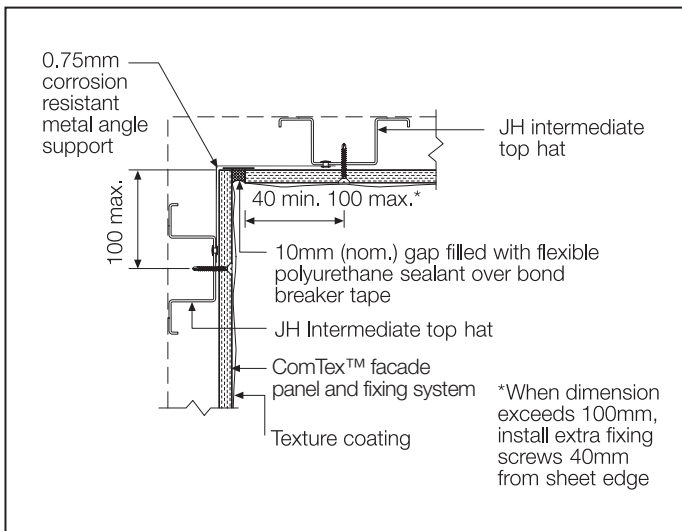


FIGURE 18 INTERNAL CORNER

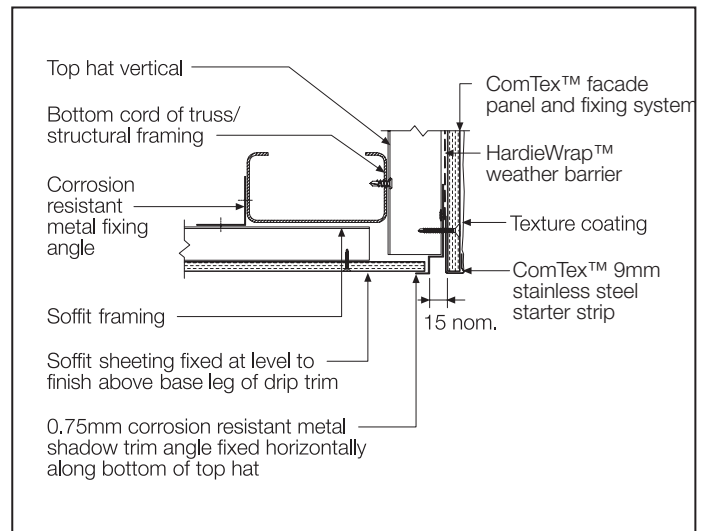


FIGURE 21 FASCIA/SOFFIT JUNCTION - SHADOW DRIP GROOVE TRIM

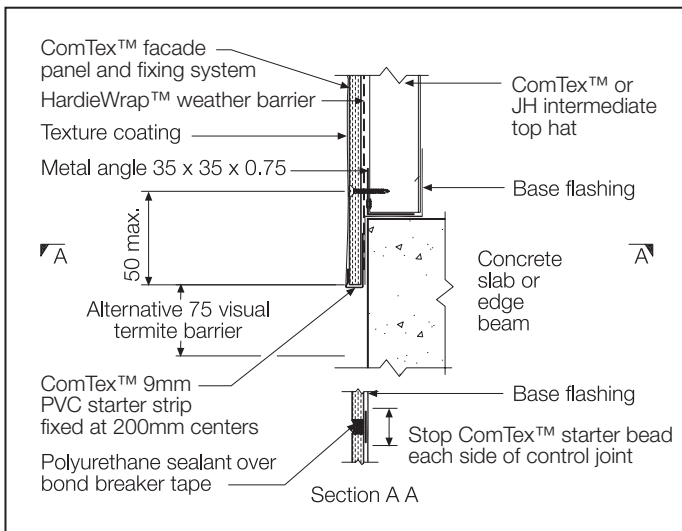


FIGURE 19 BASE DETAIL ALTERNATIVE 1

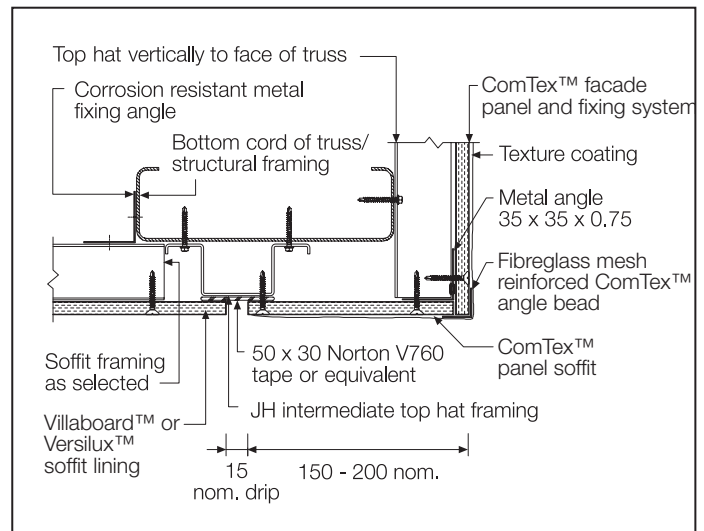


FIGURE 22 FASCIA/SOFFIT JUNCTION - ALTERNATIVE SET CORNER

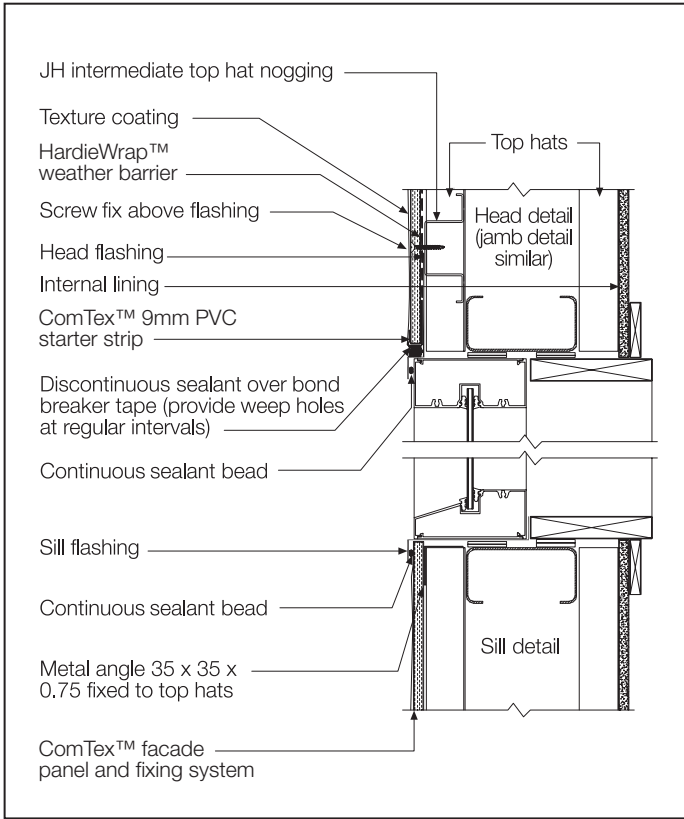


FIGURE 23 SHOP FRONT WINDOW

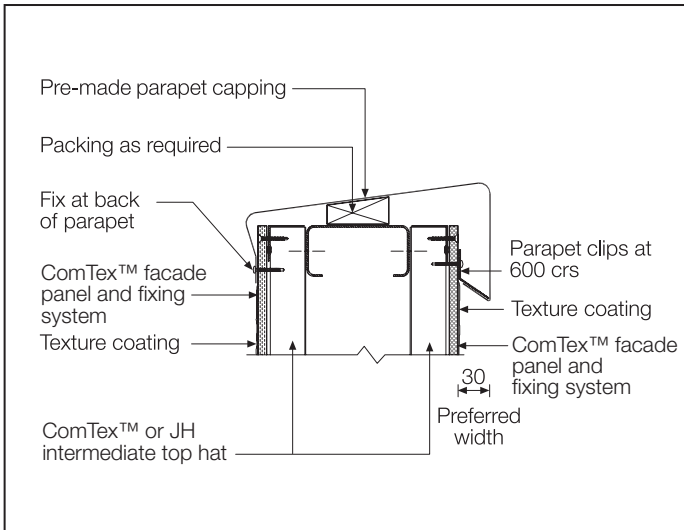


FIGURE 24 PARAPET CAPPING DETAIL

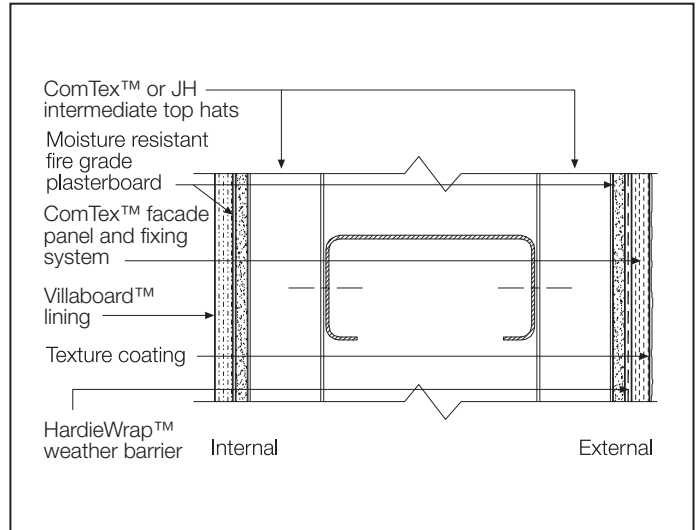


FIGURE 25 FIRE RATED COMTEX™ FACADE PANEL AND FIXING SYSTEM

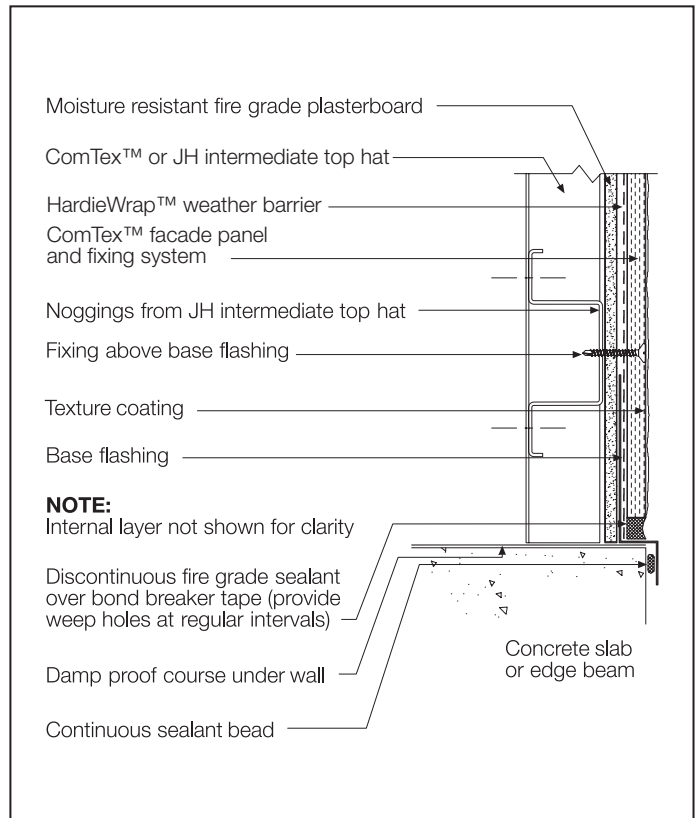


FIGURE 26 FIRE RATED COMTEX™ FACADE PANEL AND FIXING SYSTEM BASE DETAIL

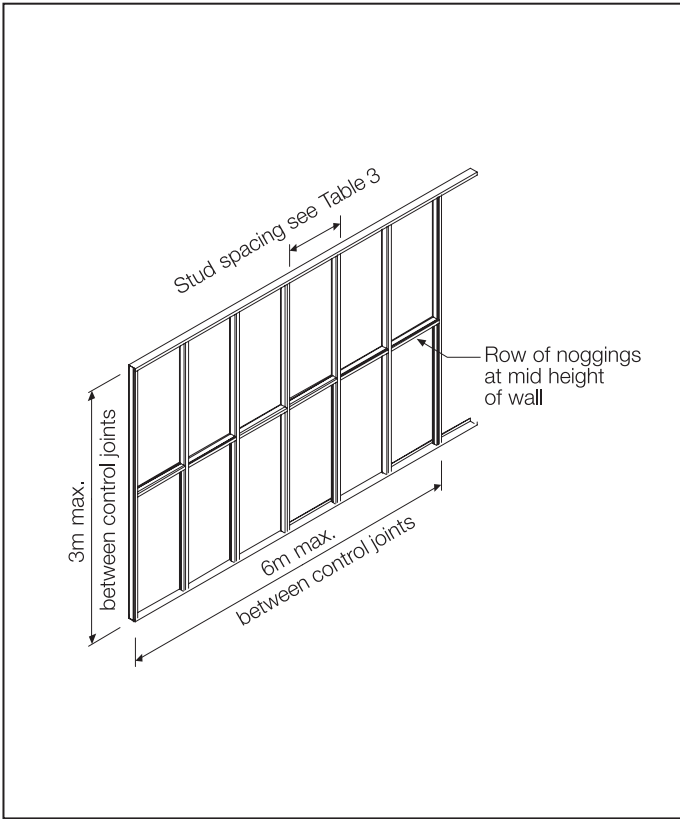


FIGURE 27 TYPICAL STEEL STUD FRAME

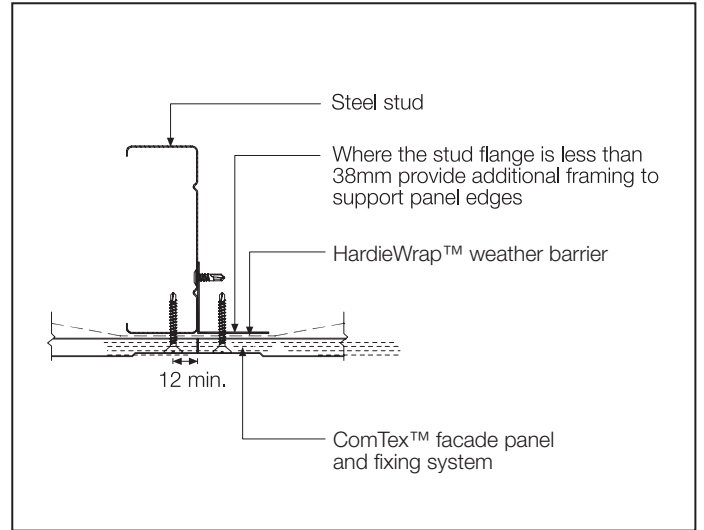


FIGURE 29 ADDITIONAL FRAMING FOR PANEL EDGE SUPPORT

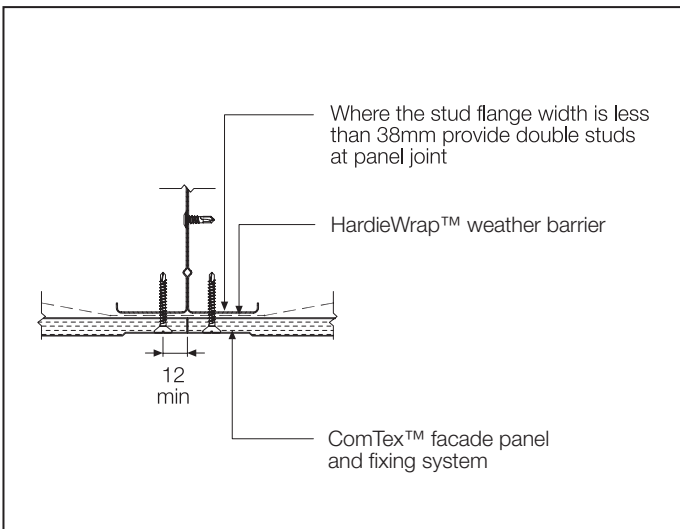


FIGURE 28 DOUBLE STEEL STUDS

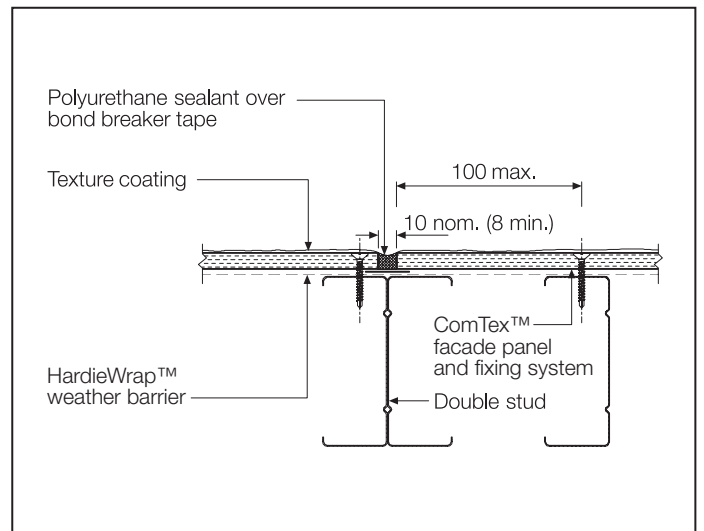


FIGURE 30 VERTICAL CONTROL JOINT

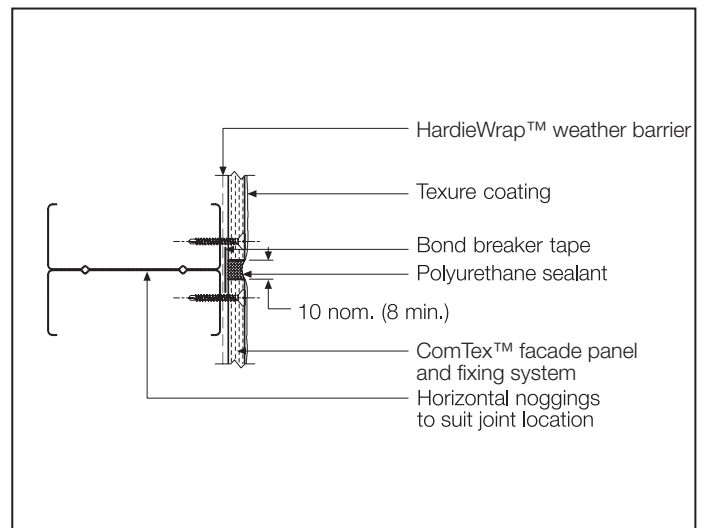


FIGURE 31 DETAIL HORIZONTAL JOINT

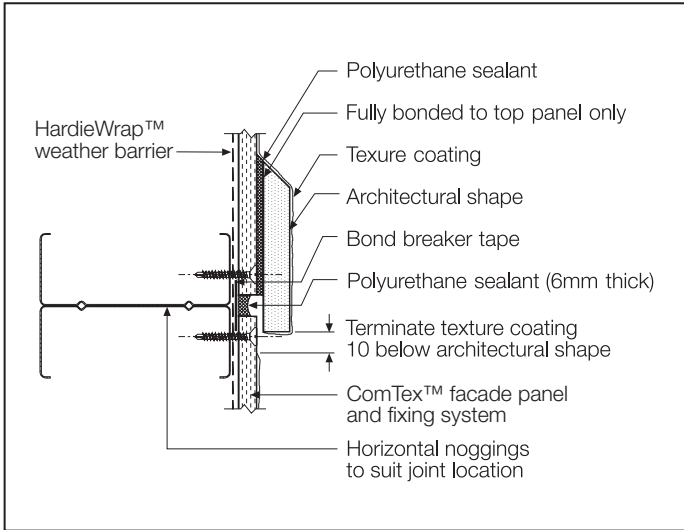


FIGURE 32 OPTIONAL DETAIL - HORIZONTAL JOINT

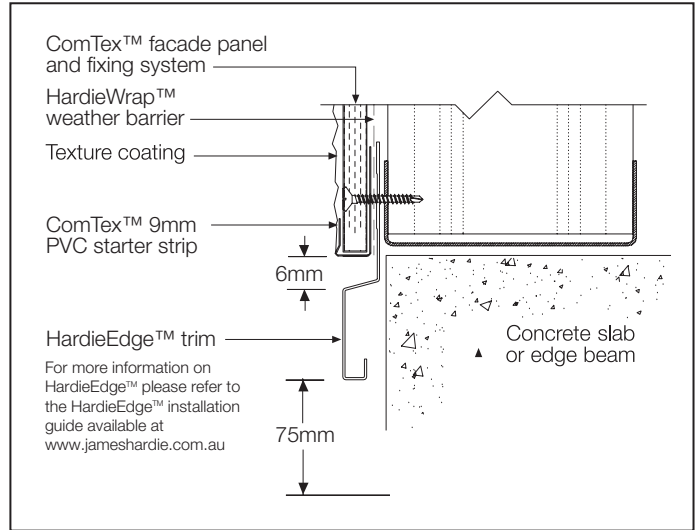


FIGURE 35 BASE DETAIL 1

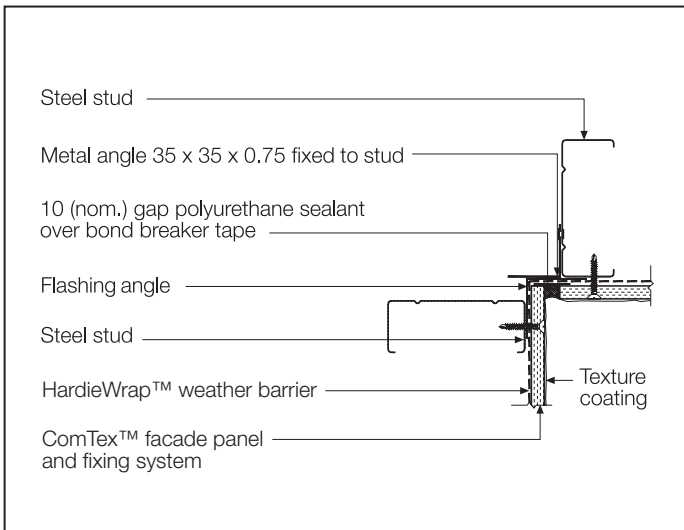


FIGURE 33 INTERNAL CORNER JOINT - STUD FRAME

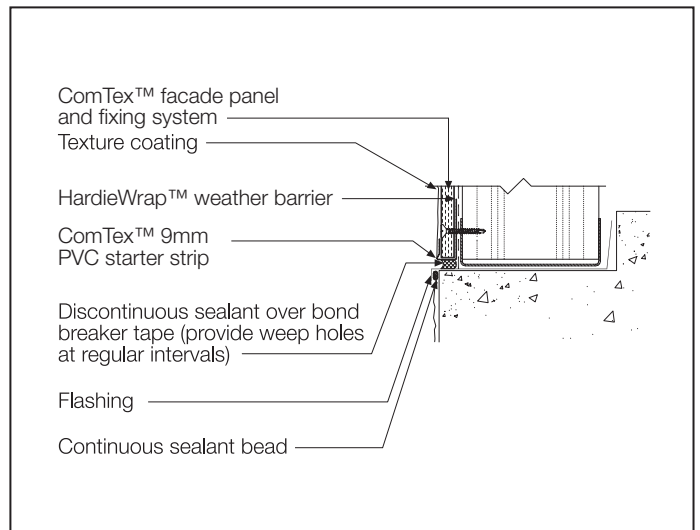


FIGURE 36 BASE DETAIL 2

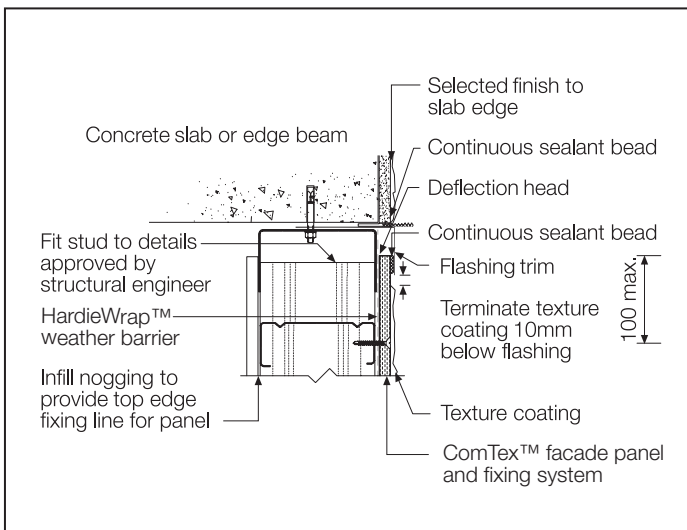


FIGURE 34 DEFLECTION HEAD DETAIL

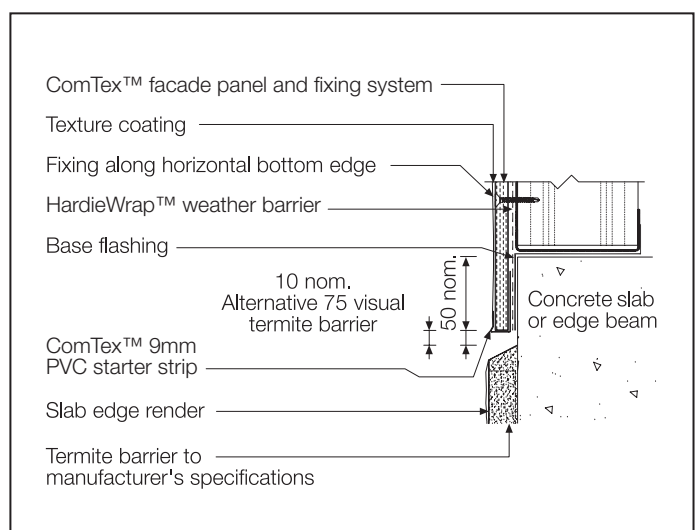


FIGURE 37 BASE DETAIL 3

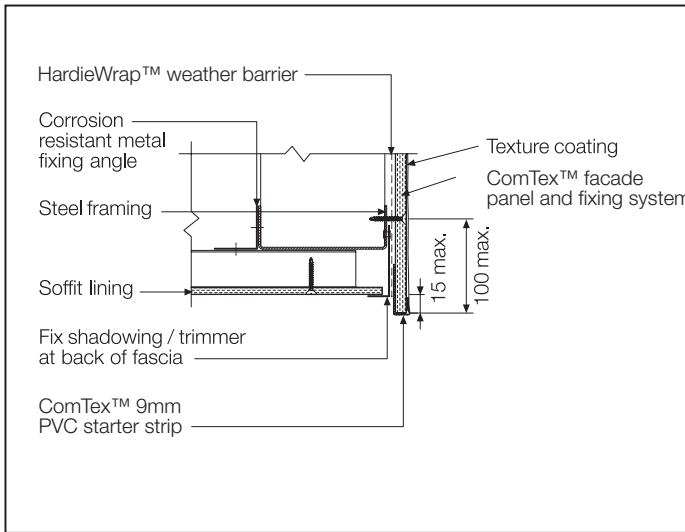


FIGURE 38 FASCIA/SOFFT JUNCTION

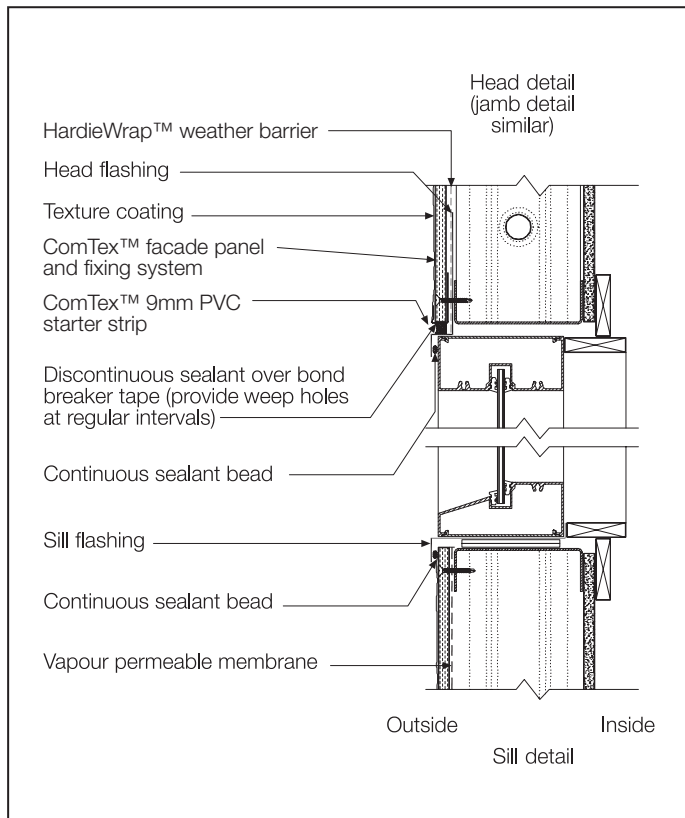


FIGURE 39 SHOP FRONT WINDOW

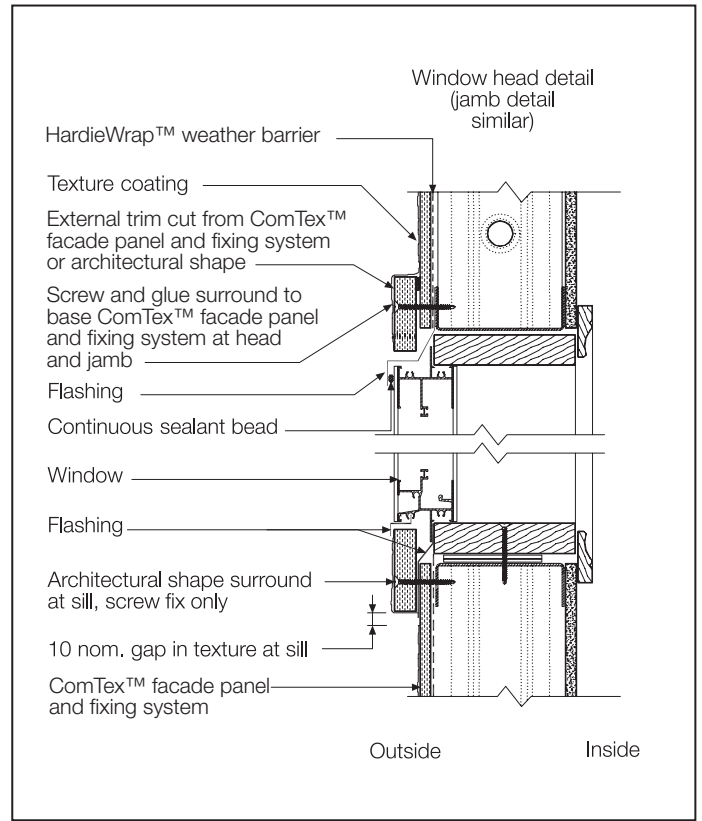


FIGURE 40 TYPICAL WINDOW WITH SURROUND

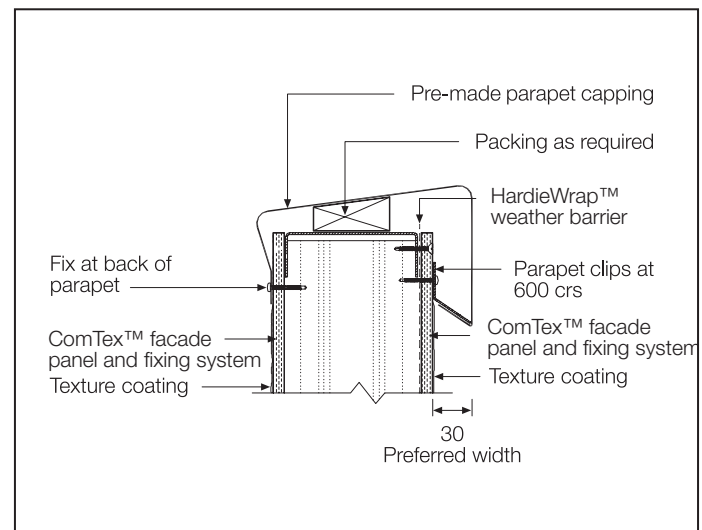


FIGURE 41 PARAPET CAPPING DETAIL

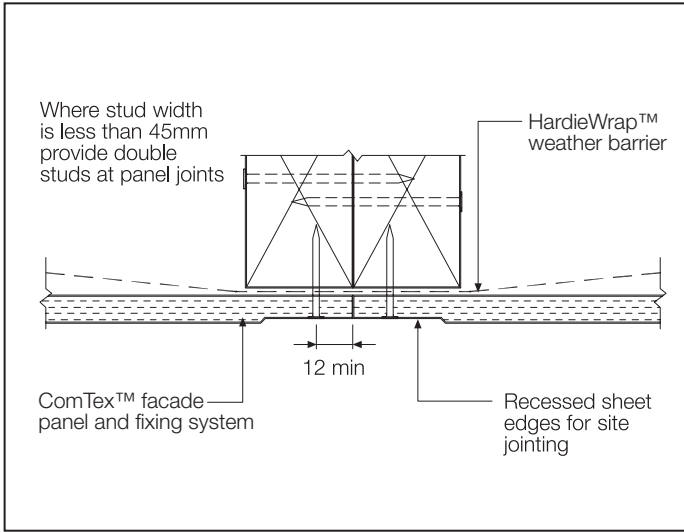


FIGURE 42 DOUBLE TIMBER STUD

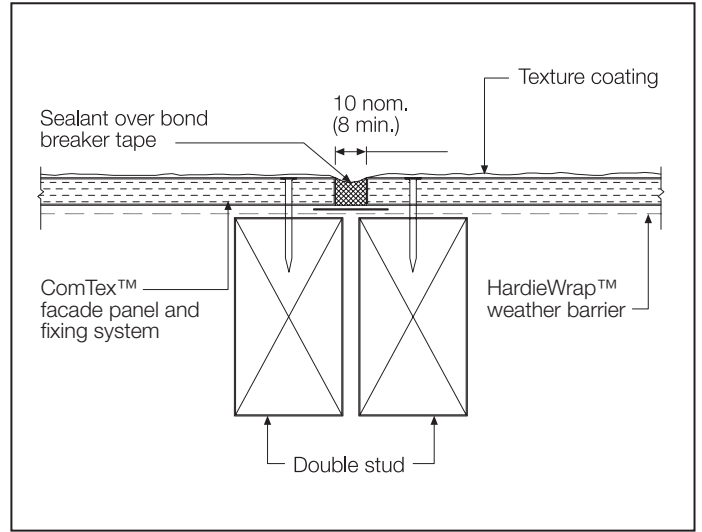


FIGURE 44 CONTROL JOINT - TIMBER FRAME

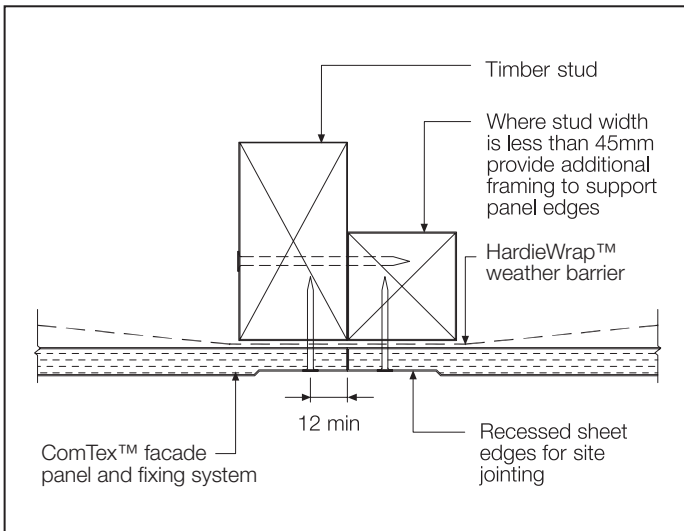


FIGURE 43 ADDITIONAL FRAMING FOR PANEL EDGE SUPPORT

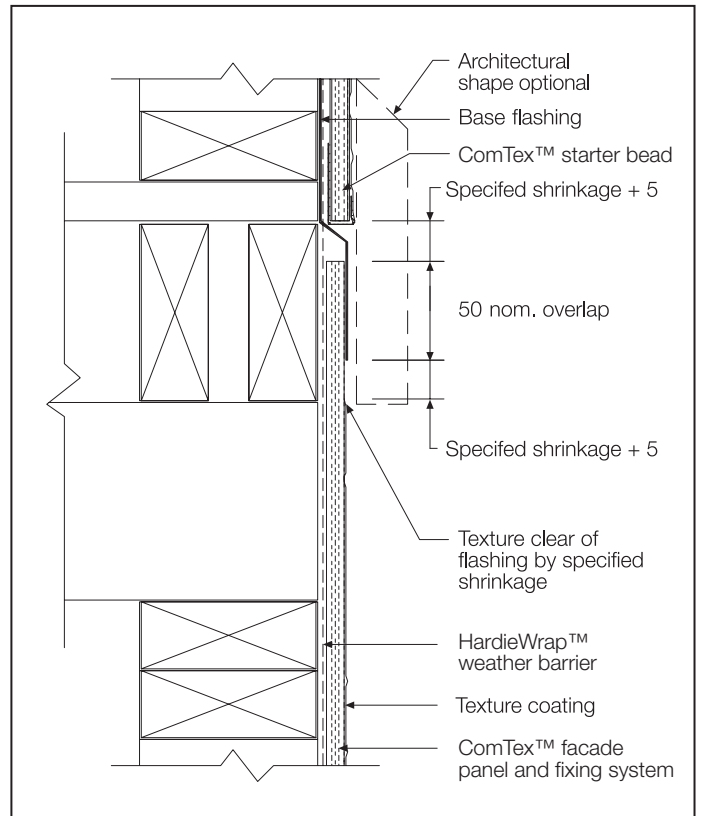
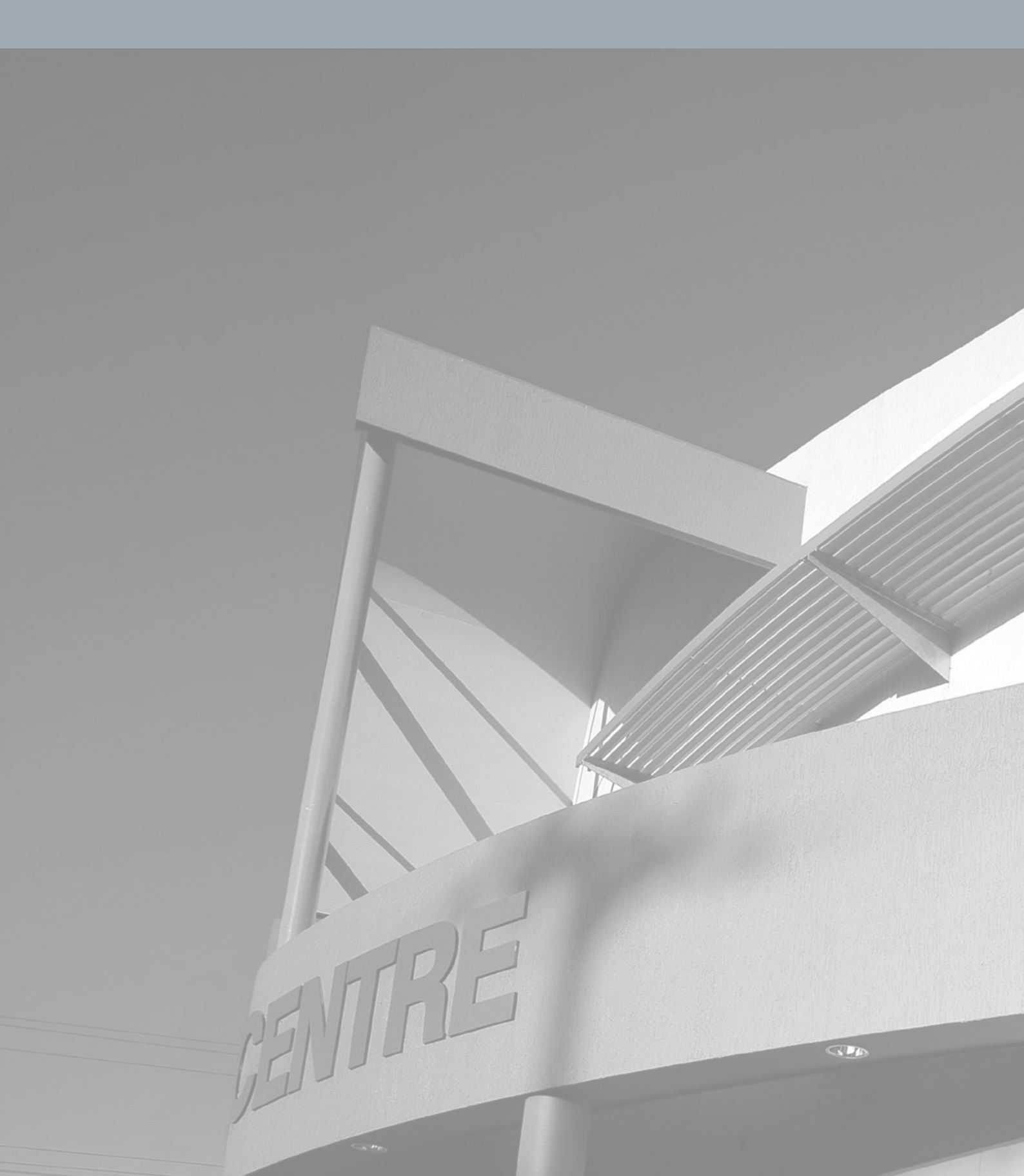


FIGURE 45 HORIZONTAL STRUCTURAL JOINT - TIMBER FRAME



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