

**0181P BOSTIK IN ADHESIVES, SEALANTS AND FASTENERS****Branded worksection**

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**Worksection abstract**

This branded worksection *Template* incorporates BOSTIK adhesives and sealants. It is applicable to projects that require adhesives and sealants as part of general construction.

**Background**

Additional particular worksection applications may also be specified here, if they are considered integral to the performance of a building system. Those worksections may then cross reference this worksection for that particular building system in addition to the *0171 General requirements* worksection's default cross referencing.

Alternatively, for some applications, it may be preferable to incorporate the particular adhesive, sealant or fasteners within the relevant worksection, for example adhesives for ceramic, stone and terrazzo tiling or fasteners for profiled sheet metal roofing and cladding. In such cases the selection may be made within the relevant worksection.

**Guidance text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at [www.natspec.com.au](http://www.natspec.com.au).

**Optional style text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

**Related material located elsewhere in NATSPEC**

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See **Application Schedule** under **SELECTIONS** for relevant worksection references for the following requirements:

- Adhesives.
- Anchors.
- Sealing, pointing and bedding.
- Sealing structural designed control joints.
- Fire-resistant sealants.

**Material not provided by BOSTIK**

This branded worksection includes generic material which may not be provided by the Product Partner including:

- Fasteners.

**Documenting this and related work**

You may document this and related work as follows:

- Location and details of joints are best shown on the drawings.
- For guidance on sealant selection, refer to NATSPEC TECHnote DES 017.
- For guidance on ceramic tiling adhesive selection, refer to NATSPEC TECHnote PRO 004.

The *Normal* style text of this worksection may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

**Specifying ESD**

The following may be specified by retaining default text:

- Fasteners: Corrosion resistance for durability to improve material life cycle.

The following may be specified using included options:

- Adhesives: Limiting VOC levels.
- Architectural sealants: Limiting VOC levels.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

## 1 GENERAL

Bostik Australia is supported by a worldwide research and development resource keeping it at the forefront with new and innovative technologies. The company is committed to providing sustainable and innovative solutions that combine technological performances, ease of use, cost effectiveness and respect for the environment.

### 1.1 RESPONSIBILITIES

#### General

Requirement: Provide BOSTIK adhesives and sealants with fasteners, as documented.

*Documented* is defined in *0171 General requirements* as meaning contained in the contract documents.

#### Performance

Requirements: Conform to the following:

- Fitness for purpose: Capable of transmitting imposed loads, sufficient to maintain the rigidity of the assembly, or integrity of the joint.
- Finished surface: That will not cause discolouration.
- Compatibility: Compatible with the products to which they are applied.
- Sealant replacement: Capable of safe removal without compromising the application of the replacement sealant for future refurbishment.
- Movement: If an adhered or sealed joint is subject to movement, select a system certified to accommodate the projected movement under the conditions of service.
- Fasteners: Suitable for the particular use, capable of transmitting imposed loads and maintaining the rigidity of the assembly.

### 1.2 COMPANY CONTACTS

#### BOSTIK technical contacts

Website: [www.bostik.com/australia/customer-support/technical-support](http://www.bostik.com/australia/customer-support/technical-support)

### 1.3 CROSS REFERENCES

#### General

Requirement: Conform to the following:

- *0171 General requirements*.

*0171 General requirements* contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. *0171 General requirements* references the *018 Common requirements* subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

### 1.4 MANUFACTURER'S DOCUMENTS

#### Technical manuals

Data sheets: [www.bostik.com/australia/Bostik-Products/](http://www.bostik.com/australia/Bostik-Products/)

Warranty: [www.bostik.com/australia/customer-support/warranty-information](http://www.bostik.com/australia/customer-support/warranty-information)

### 1.5 SUBMISSIONS

#### Products and materials

Sealants: Submit technical data sheets.

#### Samples

Visible joint sealants: Submit colour samples.

#### Tests

*0171 General requirements* covers tests in **Definitions** and calls for an inspection and testing plan under **SUBMISSIONS, Tests**.

Site tests: Submit results as follows:

- Installed sealant tests: [complete/delete]

Detail the tests required in **PRODUCTS** or **EXECUTION**, as appropriate, and list the submissions required here.

Compatibility testing: Submit adhesion and compatibility testing data demonstrating that adhesive, sealant or fastener is compatible with materials to be fixed and is suitable for the project conditions.

### **Warranties**

Manufacturer's warranty: Submit the manufacturer's published product warranties.

Sealants and tile adhesives:

- Warranty period: 10 years.
- Warranty terms: As offered by BOSTIK.

## **1.6 INSPECTION**

### **Notice**

Inspection: Give notice so that inspection may be made of prepared joints and penetrations for each sealant application included in the **Installed sealant tests schedule**.

Delete this subclause if installed sealant tests are not included.

## **2 PRODUCTS**

### **2.1 GENERAL**

#### **Product substitution**

Other products: Conform to PRODUCTS, **GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

#### **Product identification**

General: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.

Edit the list to suit the project or delete if not required.

### **2.2 BOSTIK GENERAL ADHESIVES**

#### **Bostik UltraGrip**

Description: Plasterboard stud adhesive.

VOC: 23 g/litre.

#### **Bostik Xtreme High Tack**

Description: Extremely high strength and high early grab adhesive based on modified silyl (MS) polymer technology.

VOC: 36 g/litre.

Colour: White.

#### **Bostik No More Nails**

Description: Solvent based construction adhesive.

VOC: 310 g/litre.

Colour: Beige.

### **2.3 BOSTIK PRIMERS**

#### **Bostik UL-Primer**

Description: High performance, one component primer for use on porous substrates. A polymer modified formula designed for use with Bostik's Floor Levelling range.

VOC: 5 g/litre.

Colour: White.

**Bostik Ultraseal Vapour Barrier**

Description: Primer and vapour barrier/retardant that prevents moisture migration through a concrete slab to levels that will not cause swelling or cupping of timber floors.

VOC: 0 g/litre.

Colour: Grey.

**Bostik Moisture Seal**

Description: Two-part epoxy for priming under flooring adhesives and waterproofing membranes. Compatible with a wide range of coverings including the Bostik Ultraset flooring adhesives and Dampfix waterproofing ranges.

VOC: 0 g/litre.

Colour: Grey.

**2.4 BOSTIK FLOOR LEVELLING AND REPAIR COMPOUNDS****Bostik UL-75**

Description: Rapid hardening self-levelling, single component cementitious underlay formulated to achieve maximum flow without any shrinkage or cracking.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik UL-100**

Description: Self-levelling single component, cementitious underlay formulated to achieve maximum flow without any shrinkage or cracking. Accepting foot traffic within a 2 to 4 hour period.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik UL-200**

Description: Rapid hardening, polymer modified, cementitious underlay for vinyl and timber flooring, formulated for maximum flow without shrinkage or cracking.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik UL-Screed**

Description: Fast setting, high build modified cementitious underlay formulated for quick and easy application to achieve required falls without any shrinkage or cracking.

VOC: 1 g/litre.

Colour: Cement grey.

**2.5 BOSTIK FLOORING ADHESIVES****Bostik Ultraset DX**

Description: Solvent-based, foaming, polyurethane timber floor adhesive.

VOC: 97 g/litre.

Colour: Brown.

**Bostik Ultraset HP**

Description: Solvent-free and isocyanate-free, MS polymer-based, elastomeric timber flooring adhesive.

VOC: 8 g/litre.

Colour: Brown.

**Bostik Ultraset SF**

Description: Solvent-free polyurethane timber flooring adhesive.

VOC: 2 g/litre.

Colour: Brown.

**Bostik Ultraset Singlestep2**

Description: High performance timber flooring adhesive, moisture control and sound reduction membrane all in one.

VOC: 0 g/litre.

Colour: White with black thickness spacers.

**Bostik Ultraset Greenforce**

Description: High performance adhesive and moisture control membrane all in one.

VOC: 0 g/litre.

Colour: White.

**2.6 BOSTIK STONE AND TILE ADHESIVES****Bostik Asaflex**

Description: Two part, rubber modified adhesive with exceptional flexibility and superb bond.

VOC:

- Powder: 1 g/litre.

- Liquid: 21 g/litre.

Classification to AS ISO 13007.1: C2S2E.

**Bostik Conflex**

Description: Premium rubber-modified adhesive for demanding or high traffic applications.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C2S1E.

**Bostik Ultra Mastik**

Description: White adhesive with superior anti-slip.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C2S1ET.

Colour: White.

**Bostik Megafix**

Description: Brilliant white adhesive for use in bathrooms with mosaics or when a very white adhesive is needed.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C1S1T.

Colour: Bright White.

**Bostik Excelflex**

Description: General rubber modified flexible adhesive.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C1S1.

Colour: Grey.

**Bostik Evoflex**

Description: Superior high polymer modified adhesive with in-built Evo-Lastic Technology.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C2S2ET.

Colour: Off White.

**Bostik Superfixall White**

Description: White adhesive designed for use on rigid surfaces.

VOC: < 1 g/litre.

Classification to AS ISO 13007.1: C1E (C2S1E when mixed with Bostik Megalastic).

Colour: White.

**Bostik Design Epoxy**

Description: Two part coloured epoxy grout for applications that require high chemical and mechanical demands. Suitable for wall and floor tiles and can also be used as an adhesive.

VOC: 1 g/litre.

Classification to AS ISO 13007.1: RGR2T.

Colour: 4 colours available.

## 2.7 BOSTIK TILE GROUTS

### Bostik Designer Grout

Description: Commercial grade tile grout, suitable for walls and floors for exterior and interior tiling.

VOC: 1 g/litre.

Classification to AS ISO 13007.1: CG2WA.

Colour: 14 colours available.

### Bostik Design Epoxy

Description: Two part coloured epoxy grout for applications that require high chemical and mechanical demands. Suitable for wall and floor tiles and can also be used as an adhesive.

VOC: 1 g/litre.

Classification to AS ISO 13007.1: RGR2T.

Colour: 4 colours available.

### Bostik Sanded Grout

Description: Cement based grout used for grouting slate, quarry and treated terracotta tiles or where wider joints are required. Suitable for external installations.

VOC: 1 g/litre.

Classification to AS ISO 13007.1: CG2.

Colour: 2 colours available.

### Bostik White Smooth Grout

Description: Bright white, unsanded grout suitable for internal wall tiling.

VOC: 1 g/litre.

Classification to AS ISO 13007.1: CG1.

Colour: Bright White.

## 2.8 BOSTIK PLUMBING ADHESIVES

### Bostik PVC Pipe Cement - Type N (non-pressure)

Description: High bond strength PVC-U pipe cement designed for installation of pipes and fittings subject to non-pressure applications.

VOC: 732 g/litre.

Colour: [complete/delete]

Select from Blue or Clear.

### Bostik PVC Pipe Cement - Type P (pressure)

Description: High bond strength PVC-U pipe cement designed for installation of pipes and fittings subject to high pressure.

VOC: 764 g/litre.

Colour: [complete/delete]

Select from Green or Clear.

### Bostik PVC Priming Fluid

Description: Cleans and primes PVC-U pipes, fittings and sheeting before the application of Bostik PVC Pipe Cement.

VOC: 804 g/litre.

Colour: [complete/delete]

Select from Red or Clear.

## 2.9 BOSTIK CONSTRUCTION GROUTS

### Bostik Flowfill GP

Description: A general purpose, non-shrink (Class A), cementitious grout.

Ideal for most void filling grouting jobs. Application thicknesses from 20 mm to 120 mm.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Flowfill Panel Grout**

Description: A general purpose, non-shrink (Class A) cementitious grout.

Enhanced working life. Ideal for precast and tilt-up panel work. For application thicknesses from 20 mm to 120 mm.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Techflow GP**

Description: A high performance, multi-purpose, non-shrink (Class C) cementitious grout.

For application thicknesses from 10 mm to 140 mm.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Techflow HES**

Description: A high performance, rapid setting and high early strength, non-shrink (Class C) cementitious grout.

For application thicknesses from 10 mm to 90 mm.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Techflow HS**

Description: A high performance, non-rapid setting and non-shrink (Class C) cementitious grout.

For application thicknesses from 10 mm to 140 mm. Designed to maximise a high ultimate strength.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Patchfix Concrete**

Description: A high performance, rapid setting, high early strength and shrinkage compensated repair concrete.

For patching concrete roadways, pavements and floors. Minimises shut down time and allows the repair back in service in 2 to 3 hours.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Patchfix Fine Render**

Description: A polymer modified fairing mortar.

For applications in thin layers, producing a natural concrete grey appearance to concrete and masonry surfaces. Can be applied from feather edge up to a maximum thickness of 5 mm.

VOC: 1 g/litre.

Colour: Cement grey.

**Bostik Patchfix Structural HB**

Description: A heavy duty, polymer modified, high build structural repair mortar with a high ultimate compressive strength and abrasion resistance.

Can be used for vertical, horizontal and overhead applications.

VOC: 1 g/litre.

Colour: Cement grey.

**2.10 SEALANTS****Standards**

General: To ISO 11600.

NATSPEC TECHnote DES 017 offers selection guidance.

Alternatively, consult with a manufacturer and select a product to suit the application.

**Total VOC limits**

Requirement: Conform to the following:

- Architectural sealants: [complete/delete]

Limiting VOC levels improves indoor air quality. Refer to Green Star submission guidelines to complete the prompts.

Conformance testing: To South Coast Air Quality Management District Rule 1168.

Consider editing and changing this *Optional* style text to *Normal* style text if required as a general quality standard.

## 2.11 BOSTIK GENERAL SEALANTS

### Bostik 6S

Description: Sanitary grade, neutral cure silicone for wet areas.

VOC: 58 to 65 g/litre, depending on the colour.

Colour: [complete/delete]

See the Technical Datasheet for colour selection.

### Bostik Xtreme Flex

Description: High performance, permanently flexible general purpose sealant and adhesive based on MS polymer technology.

Maximum elongation of 400% once cured.

VOC: 37 g/litre.

Colour: [complete/delete]

Select from Black, White or Grey.

### Bostik Xtreme ClearFix

Description: High performance, ultra-transparent sealant and adhesive based on MS polymer technology.

Cures to an invisible seal.

VOC: 36 g/litre.

Colour: Crystal clear.

### Bostik Roof & Gutter Premium

Description: One component silicone sealant.

High UV, weather and water resistance. High adhesion to wide range of substrates including decorative sheet metal, such as Colorbond®.

VOC: 33 to 105 g/litre, depending on the colour.

Colour: [complete/delete]

See the Technical Datasheet for colour selection.

Translucent and Grey are suitable for potable drinking water applications.

### Bostik Seal N Flex 1

Description: Single component polyurethane construction joint sealant for general construction applications.

High weather resistance, flexibility and application viscosity.

VOC: 64 to 74 g/litre, depending on the colour.

Colour: [complete/delete]

See the Technical Datasheet for colour selection.

### Bostik Seal N Flex FC

Description: Fast cure, single component construction sealant.

High weather resistance and flexibility once cured.

VOC: 78 g/litre.

Colour: [complete/delete]

Select from Black, Grey, White.

## 2.12 BOSTIK SPECIALTY SEALANTS

### Bostik V2

Description: High performance glazing silicone.

VOC: 1 g/litre.

Colour: [complete/delete]



Select from Black, Translucent, White.

**Bostik 5CLM**

Description: High joint movement weatherproofing silicone sealant.

VOC: 40 g/litre.

Colour: [complete/delete]

Select from White, Charcoal, Grey, Beige.

**Bostik V60**

Description: High performing glazing weatherproofing silicone sealant.

VOC: 39 to 47 g/litre, depending on the colour.

Colour: [complete/delete]

Select from Silver, Translucent, White, Grey, Black, Matt Black.

**Bostik V70**

Description: Structural silicone sealant.

VOC: 43 g/litre.

Colour: Black.

**2.13 BOSTIK FIRE-RESISTING SEALANTS****Bostik Fireban One**

Description: A fire-resisting, low modulus, single component, Class-A polyurethane sealant.

VOC: 64 g/litre.

Colour: Limestone.

Fire-stopping: To AS 4072.1 and tested AS 1530.4.

**Bostik Firecaulk**

Description: Fire-resisting acrylic (water-based) sealant.

VOC: 34 g/litre.

Colour: [complete/delete]

Select from White, Off White, Grey, Limestone.

Fire-stopping: To AS 4072.1 and tested to AS 1530.4.

**Bostik Xtreme Fire Seal**

Description: High performance, fire retardant sealant based on MS polymer technology.

VOC: 28 g/litre.

Colour: [complete/delete]

Select from White, Off White, Grey, Limestone.

Fire-stopping: To AS 4072.1 and tested to AS 1530.4.

**2.14 GENERIC ADHESIVES**

Most types of adhesives in widespread use are not covered by Australian standards. There is some overlap between adhesives and sealants. For example, silicone sealants are widely used as construction adhesives.

**High strength adhesive tape**

General description: A foam of cross linked polyethylene or closed cell acrylic coated both sides with a high performance acrylic adhesive system, encased in release liners of paper or polyester.

Product classification: Select tape to suit substrate as follows:

- Firm high strength foam tapes: For high energy surfaces including most bare metals such as stainless steel and aluminium.
- Conformable high strength foam: For the following:
  - . Medium energy surfaces including many plastics and paints, and bare metals.
  - . Lower energy surfaces including many plastics, most paints and powder coatings, and bare metals.

Thickness: Select the tape to make sure a mismatch between surfaces does not exceed half the tape thickness under the applied lamination pressure.

**Total VOC limits**

Requirement: Conform to the following:

- General purpose adhesives: [complete/delete]
- Structural glazing adhesive, timber flooring and laminate adhesives: [complete/delete]

Limiting VOC levels improves indoor air quality. Refer to Green Star submission guidelines to complete the prompts.

Conformance testing: To South Coast Air Quality Management District Rule 1168.

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs) and to eliminate emissions of chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene from the application of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and other primers.

Consider editing and including this *Optional* text if required as a general quality standard.

**2.15 FASTENERS****General**

Masonry anchors: Proprietary expansion or bonded type anchors conforming to **SELECTIONS, ANCHORS**.

For further information, refer to the Australian Engineered Fasteners and Anchors Council (AEFAC) sample specifications. [www.aefac.org.au/resources.php](http://www.aefac.org.au/resources.php)

Plain washers: To AS 1237.1.

- Provide washers to the heads and nuts of bolts, and the nuts of coach bolts.

Plugs: Proprietary purpose-made plastic.

Stainless steel fasteners: To ASTM A240/A240M.

Steel nails: To AS 2334.

- Length: At least 2.5 times the thickness of the member being secured, and at least 4 times the thickness if the member is plywood or building board less than 10 mm thick.

Unified hexagon bolts, screws and nuts: To AS/NZS 2465.

Fasteners in CCA treated timber: Epoxy coated or stainless steel.

Conformance to these standards is particularly important for structural applications and where durability is an issue (e.g. exposed coastal sites). A number of these standards exist partly to make sure dimensional compatibility, e.g. between nuts and bolts, and are based on international standards.

Mild steel, aluminium and zinc-plated fasteners should not be used in CCA treated timbers. Refer to NATSPEC TECHnote PRO 001. Epoxy coated or stainless steel are the preferred alternatives.

**Bolts**

Coach bolts: To AS/NZS 1390.

Hexagon bolts Grades A and B: To AS 1110.1.

Hexagon bolts Grade C: To AS 1111.1.

The product grade in the **Bolts, Nuts and Screws** cited standards refers to the quality of the product and to the size of the tolerances where grade A is the most precise and grade C is the least precise.

**Corrosion resistance**

Atmospheric corrosivity category: To 0171 General requirements.

Steel products: Conform to the **Corrosion resistance table** or provide proprietary products with metallic and/or organic coatings of equivalent corrosion-resistance.

**Corrosion resistance table**

The **Corrosion resistance table** contains default values based on the AS/NZS 2312 series. BCA Volume 2 also has coating requirements for metal sheet roofing in four environmental corrosivity categories which are aligned with AS 4312. Edit the table to suit the project and coordinate with other worksections. The internal and external project corrosivity categories are nominated in 0171 General requirements from the following categories: C1 (very low), C2 (low), C3 (medium), C4 (high), C5 (very high) and T (inland tropical). These are described in AS 4312. The C5 categories, C5-I (industrial) and C5-M (marine), are not addressed in this table. For categories not covered in the table, consider corrosion protection requirements in more detail. See the various parts of AS/NZS 2699 where there are duplex protective coatings systems in addition to those given here. If internal elements are being painted, lower levels of zinc-coating may be considered. See also AS 3700 for corrosion resistance ratings.

For self-drilling screws in severe marine environments, indoor swimming pools or buildings with corrosive industrial processes, consult the roofing/cladding manufacturer on the requirements for shank corrosion protection.

For further information refer to NATSPEC TECHnote DES 010 on atmospheric corrosivity categories for ferrous products.

Atmospheric corrosivity category to AS 4312	Threaded fasteners and anchors		Powder actuated fasteners
	Material	Minimum local metallic coating thickness (µm)	Material
C1 and C2	Electroplated zinc or Hot-dip galvanized	30	Stainless steel 316
C3	Hot-dip galvanized	50	Stainless steel 316
C4 and T	Stainless steel 316	-	Stainless steel 316

### Finishes

Electroplating:

- Metric thread: To AS 1897.
- Imperial thread: To AS 4397.

Galvanizing:

- Threaded fasteners: To AS/NZS 1214.
- Other fasteners: To AS/NZS 4680.

Mild steel fasteners: Galvanize if:

- Embedded in masonry.
- In external timbers.
- In contact with chemically treated timber other than CCA treated timber.

Epoxy coated: CCA treated timber.

### Nuts

Hexagon chamfered thin nuts Grades A and B: To AS 1112.4.

Hexagon nuts Grade C: To AS 1112.3.

Hexagon nuts Style 1 Grades A and B: To AS 1112.1.

Hexagon nuts Style 2 Grades A and B: To AS 1112.2.

### Screws

Coach screws: To AS/NZS 1393.

Hexagon screws Grades A and B: To AS 1110.2.

Hexagon screws Grade C: To AS 1111.2.

Hexagon socket screws: To AS 1420.

Self-drilling screws: To AS 3566.1.

Self-tapping screws:

- Crossed recessed countersunk (flat – common head style): To AS/NZS 4407.
- Crossed recessed pan: To AS/NZS 4406.
- Crossed recessed raised countersunk (oval): To AS/NZS 4408.
- Hexagon: To AS/NZS 4402.
- Hexagon flange: To AS/NZS 4410.
- Hexagon washer: To AS/NZS 4409.
- Slotted countersunk (flat – common head style): To AS/NZS 4404.
- Slotted pan: To AS/NZS 4403.
- Slotted raised countersunk (oval – common head style): To AS/NZS 4405.

### Blind rivets

Description: Expanding end type with snap mandrel.

Type: Closed end for external application, open end for internal application.

End material:

- Aluminium base alloy for metallic-coated or prepainted steel.

Colorbond® (by BlueScope) is a widely used proprietary finish to aluminium-zinc coated steel. It has an organic coating and is available in various grades for forming into equipment, appliances, roofing, etc.

- Stainless steel for stainless steel sheet.
- Copper for copper sheet.

Size:

- For sheet metal to sheet metal: 3 mm.
- For sheet metal to supports, brackets and rolled steel angles: 4.8 mm.

### 3 EXECUTION

#### 3.1 ADHESIVES

##### General

Requirement: Install to the manufacturer's recommendations.

##### Preparation

Substrates: Conform to the following:

- Remove any deposit or finish which may impair adhesion.
- If framed or discontinuous, provide support members in full lengths without splicing.
- If solid or continuous, remove excessive projections.
- If previously painted, remove cracked or flaking paint and lightly sand the surface.

##### Contact adhesive

Wall and floor adhesive is also referred to as mastic adhesive.

Precautions: Do not use contact adhesive if:

- A substrate is polystyrene foam.
- A PVC substrate may allow plasticiser migration.
- The adhesive solvent can discolour the finished surface.
- Dispersal of the adhesive solvent is impaired.

Two-way method: Immediately after application press firmly to transfer adhesive and then pull both surfaces apart. Allow to tack off and then reposition and press firmly together. Tap areas in contact with a hammer and padded block.

The two way method is recommended for locating non-loadbearing items.

One-way method: Immediately after application bring substrates together and maintain maximum surface contact for 24 hours by clamps, nails or screws as appropriate. If highly stressed, employ permanent mechanical fasteners.

The one way method is recommended for heavier panels.

##### High strength adhesive tape

Preparation:

- Non-porous surfaces: Clean with surface cleaning solvents such as isopropyl alcohol/water, wash down and allow to dry.
- Porous surfaces: Prime the surface with a contact adhesive compatible with the tape adhesive system.

Application to copper, brass, plasticised vinyl and hydrophilic surfaces such as glass and ceramics in a high humidity environment: Conform to manufacturer's recommendations.

Applied lamination pressure: Make sure the tape experiences 100 kPa.

Application temperature: Generally above 10°C and to the manufacturer's recommendations.

Completion: Do not apply loads to the assembly for 72 hours at 21°C.

#### 3.2 JOINT SEALING

##### General

Requirement: Install to the manufacturer's recommendations.

**Joint preparation**

Cleaning: Cut flush joint surface protrusions and rectify if required. Mechanically clean joint surfaces free of any deposit or finish which may impair adhesion of the sealant. Immediately before sealant application, remove loose particles from the joint, using oil-free compressed air.

Bond breaking: Install bond breaking backing material.

Taping: Protect the surface on each side of the joint using 50 mm wide masking tape or equivalent means. On completion of sealant application remove the tape and remove any stains or marks from adjacent surfaces.

Primer: Apply the recommended primer to the surfaces in contact with sealant materials.

**Sealant joint proportions**

General weatherproofing joints (width:depth):

- 1:1 for joint widths less than 12 mm.
- 2:1 for joint widths greater than 12 mm.

Often detailed on drawings.

**Sealant application**

General: Apply the sealant to dry joint surfaces using a pneumatic applicator gun. Make sure the sealant completely fills the joint to the required depth, provides good contact with the full depth of the sides of the joint and traps no air in the joint. Do not apply the sealant outside the recommended working time for the material or the primer.

**Weather conditions**

Two pack polyurethanes: Do not apply the sealant if ambient conditions are outside the following:

- Temperature: Less than 5°C or greater than 40°C.
- Humidity: To the manufacturer's recommendations.

**Joint finish**

General: Force the sealant into the joint and finish with a smooth, slightly concave surface using a tool designed for the purpose.

Excess sealant: Remove from adjoining surfaces using cleaning material nominated by the sealant manufacturer.

**Protection**

General: Protect the joint from inclement weather during the setting or curing period of the material.

**Rectification**

General: Cut out and remove damaged portion of joint sealant and reinstall so repaired area is indistinguishable from undamaged portion.

### 3.3 CONSTRUCTION GROUTS

**General**

Requirement: Install to the manufacturer's recommendations.

See the product Technical Datasheet for mixing and application instructions.

**Preparation**

Substrates: Conform to the following:

- Surface: Clean, sound and free from oil, grease, curing compound or any loose materials. Mechanically abrade to a sound surface.
- Bolts and anchor holes: Clean and free from dust or loose material.
- Base plates: Free from rust, oil or grease. Provide air pressure relief holes for venting.
- Pre-soaking: Before application, pre-soak substrate with water for a minimum of 6 hours. Immediately before grouting, remove excess water, including water in bolts and anchor holes.

**Formwork**

Requirement: Construct to facilitate rapid and continuous filling, remaining leak proof and water tight. Provide foam rubber strips or suitable sealants under the formwork to the manufacturer's recommendations.

Unrestrained surfaces: Keep to a minimum.

It is advisable not to leave any unrestrained areas.

**High temperature working**

Requirement: Where possible, erect shade screens to protect the installation area from direct sunlight and schedule grouting for early morning or late afternoon.

Storage: Keep materials cool and away from direct sunlight.

**3.4 TESTING****Installed sealant tests**

Sampling: For each sealant test, take 3 samples of installed and cured sealant, each at least 50 mm long, from completed joints.

Reinstatement: Repair-as-new the joints from which the samples were taken.

**Installed sealant tests schedule**

Item to be tested	Property to be tested	Applicable standard

See ISO 11600 Table 4 for elongation, amplitude and compression tests for glazing (Type 6) and Contraction (Type F) sealants.  
Delete if not required or if they are nominated in other worksections.

**3.5 FASTENERS****General**

Requirement: Install to the manufacturer's recommendations.

**Fastening to wood and steel**

Timber substrates: To AS 1720.1 Section 4.

Self-drilling screws: To AS 3566.1 for timber and steel substrates.

**Masonry anchors**

Installation: To the manufacturer's recommendations.

**4 SELECTIONS**

**Schedules** are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

**Cross reference**

If adhesives or sealants are selected and specified here for particular applications, provide cross references in the relevant worksections directing the reader to this schedule and delete text that may be redundant or contradictory.

Delete items from these Schedules if they are to be selected by the contractor as part of general construction.

**4.1 ADHESIVES****Application schedule**

Application	Product	Relevant worksections
Adhesive fixed timber strip flooring and parquet systems	Bostik Ultraset DX Bostik Ultraset S Bostik Ultraset SF Bostik Ultraset HP Bostik Ultraset Greenforce Bostik Ultraset Singlestep2	0655 Timber flooring
Colourback glass faced wall panels or splashbacks	Bostik Xtreme High Tack Bostik V60	0551 Joinery, 0641 Applied wall finishes
Drywall lining/wall panels	Bostik UltraGrip Bostik Xtreme High Tack	0511 Lining, 0522 Partitions – framed and lined
Engineered panel floors	Bostik Ultraset DX Bostik Ultraset S Bostik Ultraset SF	0654 Engineered panel flooring

Application	Product	Relevant worksections
	Bostik Ultraset HP Bostik Ultraset Greenforce Bostik Ultraset Singlestep2	
Mirrors	Bostik V60 Bostik Xtreme High Tack	0467 Glass components
Stainless steel faced wall panels or splashbacks	Bostik V60	0551 Joinery, 0641 Applied wall finishes, 0553 Stainless steel benching
Timber joinery fitments	Bostik Xtreme High Tack	0551 Joinery
Mechanical services	Bostik Seal N Flex 1 Bostik Seal N Flex FC	0732 Air filters, 0744 Ductwork insulation, 0752 Mechanical piping insulation, 0762 Cool rooms
Hydraulic services	Bostik PVC Priming Fluid Bostik PVC Pipe Cement - Type P (pressure) Bostik PVC Pipe Cement Slow Setting - Type N (non-pressure)	0802 Hydraulic design and install, 0812 Tapware

Describe the location and details or refer to the drawings.

Mechanical services: Check for fire and/or acoustic properties requirements.

Relevant worksection: Coordinate the selection with related default text.

## 4.2 ADHESIVES FOR STONE AND TILE MATERIALS

### Application schedule

Application	Bostik product group	Relevant worksections
Dry interior	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Internal wet areas	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Exterior	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Underfloor heating	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Driveway/Garage/Showroom	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Commercial/High traffic	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Full immersion (Pool)	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Porcelain tiles	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling
Large format tiles	Bostik Stone and Tile Adhesives	0631 Ceramic tiling, 0632 Stone and terrazzo tiling

Describe the location and details or refer to the drawings.

Mechanical services: Check for fire and/or acoustic properties requirements.

Relevant worksection: Coordinate the selection with related default text.

## 4.3 ANCHORS

### Bonded anchor schedule

Property	A	B	C
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Property	A	B	C
Adhesive			
Anchor rod: Diameter (mm)			
Anchor rod: Length (mm)			
Anchor rod: Finish/coating			
Anchor rod: Strength grade			
Anchor rod: Depth of embedment (mm)			
Anchor rod: Part number			
Drill hole: Diameter (mm)			
Drill hole: Depth (mm)			
Tightening torque (Nm)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.  
 Edit codes in the **Schedule** to match those on drawings.  
 Adhesive: Insert required adhesive to manufacturer's recommendations.  
 Anchor rod: Finish/coating: e.g. Galvanized/Class 4.  
 Anchor rod: Strength grade: e.g. Class 5.8.  
 Anchor rod: Part number: Insert the manufacturer's part number.  
 Tightening torque: Insert if applicable.

#### Expansion anchor schedule

Property	A	B	C
Anchor name			
Part number			
Size			
Finish/coating			
Drill hole: Diameter (mm)			
Drill hole: Depth (mm)			
Socket size (mm)			
Tightening torque (Nm)			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.  
 Edit codes in the **Schedule** to match those on drawings.  
 Anchor name: Insert the manufacturer's anchor name.  
 Part number: Insert the manufacturer's part number.  
 Finish/coating: e.g. Galvanized/Class 4.

## 4.4 SEALING, POINTING AND BEDDING

### Application schedule

Application	Product	Relevant worksections
Metal flashings and rainwater goods	Bostik Roof & Gutter Bostik Xtreme Flex	0421 Roofing – combined, 0423 Roofing – profiled sheet metal, 0424 Roofing – seamed sheet metal, 0425 Roofing – shingles



Application	Product	Relevant worksections
		<i>and shakes, 0426 Roofing – slate, 0427 Roofing – tiles</i>
Metal flashings and sealing non-porous substrates	Bostik 5CLM Bostik Xtreme Flex	<i>0431 Cladding – combined, 0432 Curtain walls, 0434 Cladding – flat sheets and panels, 0435 Cladding – planks and weatherboards, 0436 Cladding – profiled and seamed sheet metal, 0437 Cladding – sheet and pre-assembled systems</i>
Window and external doors	Bostik V60 Bostik Xtreme Flex	<i>0432 Curtain walls, 0451 Windows and glazed doors, 0453 Doors and access panels, 0463 Glass blockwork</i>
Mechanical services	Bostik Fireban One Bostik Firecaulk Bostik Xtreme Fire Seal	<i>0724 Air handling plant – combined, 0725 Air handling plant – built-up, 0726 Air handling plant – minor, 0727 Air handling plant – packaged, 0732 Air filters, 0741 Ductwork 0702 Mechanical design and install, 0752 Mechanical piping insulation, 0762 Cool rooms</i>
Hydraulic services	Bostik 6S	<i>0811 Sanitary fixtures, 0812 Tapware, 0813 Water heaters, 0815 Boiling, chilled and filtered water dispensers</i>

Describe the location and details or refer to the drawings.

Mechanical services: Check for fire and/or acoustic properties requirements.

Relevant worksection: Coordinate the selection with related default text.

#### Adhesives, sealant and fasteners combined function

Application	Product	Relevant worksections
Cool room fixing and sealing	Bostik Xtreme range	<i>0762 Cool rooms</i>
Fixing and sealing acoustic ceiling tiles	Bostik Xtreme range	<i>0531 Suspended ceilings – combined</i>
Control joints tile adhesives and wet area sealants	Bostik Xtreme range	<i>0631 Ceramic tiling, 0632 Stone and terrazzo tiling</i>
Timber floor control joints, adhesives and fixings	Bostik Xtreme range	<i>0655 Timber flooring, 0654 Engineered panel flooring</i>
Wet area sealants and lightweight detail items	Bostik Xtreme range	<i>0525 Cubicle systems, 0551 Joinery, 0811 Sanitary fixtures</i>

Describe the location and details or refer to the drawings.

Relevant worksection: Coordinate the selection with related default text.

#### 4.5 SEALING STRUCTURALLY DESIGNED CONTROL JOINTS

##### Application schedule

Application	Sealant type	Sealant colour	Relevant worksection
Internal masonry control joints	Bostik Seal N Flex 1 Bostik Seal N Flex FC	12 colours available Black/Grey/White	<i>0322 Tilt-up concrete, 0331 Brick and block construction, 0332 Stone masonry</i>

Application	Sealant type	Sealant colour	Relevant worksection
External masonry control joints	Bostik Seal N Flex 1 Bostik Seal N Flex FC	12 colours available Black/Grey/White	0322 Tilt-up concrete, 0331 Brick and block construction, 0332 Stone masonry
Trafficable masonry control joints	Bostik 5CLM Bostik Seal N Flex FC Bostik Seal N Flex 1	White/Charcoal/Grey/Beige Black/Grey/White 12 colours available	0274 Concrete pavement, 0275 Paving – mortar and adhesive bed

Describe the location and details or refer to the drawings.

Sealant colour: Select from:

- Bostik 5CLM: Charcoal, Light Grey, Dark Grey, Beige, White.
- Bostik Seal N Flex FC: Black, Grey, White
- Bostik Seal N Flex 1: Select from Grey, Black, White, Limestone, Bahama Beige, Sandstone, Redwood, Off White, Manilla Sand, Classic Bone, Epping Grey.

Relevant worksection: Coordinate the selection with related default text.

#### 4.6 FIRE-RESISTING SEALANTS

##### Application schedule

Application	Sealant	Sealant colour	Fire-resistance level to AS 1530.4 (FRL)	Relevant worksection
Masonry control joints	Bostik Fireban One Bostik Xtreme Fire Seal	Limestone White	Up to -/240/240	0322 Tilt-up concrete, 0331 Brick and block construction, 0332 Stone masonry
Internal pointing and stopping (including acoustic applications)	Bostik Firecaulk	Limestone White Black	Up to -/240/240	0182 Fire-stopping, 0346 Structural fire protection systems, 0472 Acoustic insulation

Describe the location and details or refer to the drawings.

Sealant colour: Select from:

- Bostik Firecaulk: White, Off White, Grey, or Limestone.

Fire-resistance level to AS 1530.4 (FRL): Request test results from Bostik Technical Department, rating varies with design detail.

- Bostik Fireban One: e.g. -/120/120, -/180/180, -/240/240.
- Bostik Firecaulk: e.g. -/120/120, -/180/180, -/240/240.

Relevant worksection: Coordinate the selection with related default text.

##### REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1110		ISO metric hexagon bolts and screws - Product grades A and B
AS 1110.1	2015	Bolts
AS 1110.2	2015	Screws
AS 1111		ISO metric hexagon bolts and screws - Product grade C
AS 1111.1	2015	Bolts
AS 1111.2	2015	Screws
AS 1112		ISO metric hexagon nuts
AS 1112.1	2015	Style 1 - Product grades A and B
AS 1112.2	2015	Style 2 - Product grades A and B
AS 1112.3	2015	Product grade C
AS 1112.4	2015	Chamfered thin nuts - Product grades A and B
AS/NZS 1214	2016	Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series) (ISO 10684:2004, MOD)
AS 1237		Plain washers for metric bolts, screws and nuts for general purposes

AS 1237.1	2002	General plan
AS/NZS 1390	1997	Cup head bolts with ISO metric coarse pitch threads
AS/NZS 1393	1996	Coach screws - Metric series with ISO hexagon heads
AS 1420	2008	ISO metric hexagon socket head cap screws
AS 1530		Methods for fire tests on building materials, components and structures
AS 1530.4	2014	Fire-resistance tests for elements of construction
AS 1720		Timber structures
AS 1720.1	2010	Design methods
AS 1897	2016	Fasteners - Electroplated coatings
AS 2334	1980	Steel nails - Metric series
AS/NZS 2465	1999	Unified hexagon bolts, screws and nuts (UNC and UNF threads)
AS 3566		Self-drilling screws for the building and construction industries
AS 3566.1	2002	General requirements and mechanical properties
AS 4072		Components for the protection of openings in fire-resistant separating elements
AS 4072.1	2005	Service penetrations and control joints
AS 4312	2008	Atmospheric corrosivity zones in Australia
AS 4397	2007	Electroplated coatings of zinc on steel fasteners with imperial threads
AS/NZS 4402	2015	Hexagon head tapping screws
AS/NZS 4403	2015	Slotted pan head tapping screws
AS/NZS 4404	2015	Slotted countersunk (flat) head tapping screws (common head style)
AS/NZS 4405	2015	Slotted raised countersunk (oval) head tapping screws (common head style)
AS/NZS 4406	2015	Cross-recessed pan head tapping screws
AS/NZS 4407	2015	Crossed-recessed countersunk (flat) head tapping screws (common head style)
AS/NZS 4408	2015	Crossed-recessed raised countersunk (oval) head tapping screws
AS/NZS 4409	2015	Hexagon washer head tapping screws
AS/NZS 4410	2015	Hexagon flange head tapping screws
AS/NZS 4680	2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS ISO 13007		Ceramic tiles
AS ISO 13007.1	2013	Grouts and adhesives - Terms, definitions and specifications for adhesives
ASTM A240/A240M	2018	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ISO 11600	2002	Building construction - Jointing products - Classification and requirements for sealants
<b>The following documents are mentioned only in the <i>Guidance</i> text:</b>		
AS/NZS 2312		Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS/NZS 2699		Built-in components for masonry construction
AS 3700	2018	Masonry structures
NATSPEC DES 010	2015	Atmospheric corrosivity categories for ferrous products
NATSPEC DES 017	2006	Selection of sealants
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC PRO 001	2005	CCA (Copper chrome arsenate) treated timber
NATSPEC PRO 004	2012	Ceramic tile and adhesive selection
NATSPEC TR 01	2018	Specifying ESD
SCAQMD Rule 1168	1989	South Coast Air Quality Management District Rule 1168 - Adhesive and sealant applications (California, U.S.)