

0181P MAPEI IN ADHESIVES, SEALANTS AND FASTENERS

Branded worksection

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Worksection abstract

This branded worksection *Template* incorporates Mapei 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.

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-resisting sealants.

Material not provided by Mapei

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

Mapei is a world leader in the manufacture of innovative products for the construction industry. Products include adhesives, grouts, waterproofing membranes, levelling compounds, repair mortars and quality related building products. Numerous projects executed all around the world are testimony to the outstanding quality of Mapei products that are preferred by architects, designers and building contractors. Mapei products are manufactured in Brisbane and distributed through an extensive network of distributors.

1.1 RESPONSIBILITIES

General

Requirement: Provide Mapei adhesives and sealants, with fasteners specified generically, 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

Mapei technical contacts

Website: www.mapei.com/AU-EN/contacts.asp

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.mapei.com/AU-EN/products.asp

1.5 SUBMISSIONS

Samples

Visible joint sealants: Submit colour samples.

Products and materials

Sealants: Submit technical data sheets.

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 Mapei published product warranties.

Sealants and tile adhesives:

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

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.

Marking

Identification: 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 MAPEI RESILIENT ADHESIVES

Floors

Adhesives in water emulsion: Ultrabond Eco range.

Epoxy, polyurethane and epoxy-polyurethane reactive adhesives: Adesilex G19.

Applications for floor covering types are provided in the *Mapei Selection Guide for Resilient Adhesives*.

Sports flooring

Adhesives in water emulsion:

- Ultrabond Eco V4SP (internal).
- Ultrabond Eco V4SP Fibre (internal).

Epoxy, polyurethane and epoxy-polyurethane reactive adhesives:

- Adesilex G19.
- Ultrabond Turf PU 1K.

Wall coverings

Adhesives in water emulsion:

- Rollcoll.
- Ultrabond Eco range.

Applications for wall covering types are provided in the *Mapei selection guide for resilient adhesives*.

Steps, profiles, covings and skirtings

Bi-adhesive strip: Mapecontact.

Epoxy, polyurethane and epoxy-polyurethane reactive adhesives: Ultrabond P990 1K.

2.3 MAPEI TIMBER FLOORING ADHESIVES**Primers**

Applications:

- All purpose: Eco Prim T.
- Over smoothing and levelling compounds, cementitious mortars and non-absorbent surfaces: Mapeprim SP.

Adhesives

Applications:

- Multi layered and solid wood flooring products: Ultrabond Eco S955 1K.
- All purpose: Ultrabond P990 1K.

Applications for timber flooring applied to a range of substrates are provided in the Mapei Products for the Installation of Timber Flooring.

Repair and smoothing compounds

Bonded: Nivorapid, Mapecem Quickpatch, Latexplan Trade, Ultraplan.

Floating floors: Nivorapid and Latex Plus.

Moisture vapour barrier

Concrete substrate: Planiseal EMB.

2.4 MAPEI CERAMIC AND STONE TILE ADHESIVES**Adhesive groups**

Normal-setting hydraulic binder-based adhesives:

- Adeflex R.
- Adeflex R + Isolastic 50.
- Adesilex P9.
- Kerabond Plus.
- Kerabond Plus + Isolastic..
- Kerabond Plus + Isolastic 50.
- Keraflex.
- Keraflex Maxi S1.
- Keraset.
- Tixobond Fine S1.

Fast-setting hydraulic binder-based adhesives:

- Adesilex P4.
- Granirapid.
- Keraquick.
- Keraquick + Latex Plus.

Synthetic resin-based adhesives:

- Mapemastic Easy
- Ultramastic III.

Reactive adhesives: Keralastic T.

2.5 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.

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.

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.

2.6 MAPEI GROUTS AND FLEXIBLE JOINTS

Grouts

Products:

- Keracolor FF.
- Keracolor GG.
- Keracolor SF.
- Kerapoxy.
- Kerapoxy Design.
- Ultracolor Plus.

Elastic joints

Products:

- Mapeflex PU 45.
- Mapesil AC.

2.7 GENERIC 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.

External masonry joints

General: Provide sealant and bond breaking materials which are non-staining to masonry. Do not use bituminous materials with absorbent masonry units.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

Consult manufacturers for joint fillers, e.g. compressible closed cell polyethylene foam for compatibility with the sealant. Rigid fillers such as pulp board, cork or semi-rigid foam should not be specified.

Fire-resisting control joints

For service penetrations, coordinate with 0182 Fire-stopping. See NATSPEC TECHnote DES 020 on fire behaviour of building materials and assemblies.

General: Provide sealant materials that maintain the nominated fire-resistance level (FRL).

- Fire-stopping: To AS 4072.1.

Lightweight building element joints

Joints subject to rapid changes of movement: Provide sealants that accommodate the movement of the contact materials.

Also referred to as fast moving joints.

Floor control joints

General: Provide trafficable sealants.

Bond breaking backing:

- Bond breaking materials: Non-adhesive to sealant, or faced with a non-adhering material.
- Foamed materials: Closed-cell or impregnated, not water-absorbing.

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

2.8 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

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 CCA and Treated Timber. 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.

The **Corrosion resistance table** contains default values based on the AS/NZS 2312 series. BCA Volume 2 also has specific values for domestic 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 further information refer to NATSPEC TECHnote DES 010 on atmospheric corrosivity categories for ferrous products.

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

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

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.

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, consult the manufacturer.

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 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.

3.4 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.

4.1 ADHESIVES

Application schedule

Application	Mapei product group	Mapei product	Relevant worksections
Adhesive fixed timber strip flooring and parquetry systems	Mapei Products for the Installation of Timber flooring	Ultrabond P990 1K and Ultrabond S955	0655 Timber flooring.
Colourback glass faced wall panels or splashbacks		Mapeflex PU45 or Mapesil AC. Refer to Selection Chart of Grouts and Flexible Joints	0551 Joinery, 0641 Applied wall finishes.
Drywall lining/wall panels		Mapeflex PU45 or Mapesil AC. Refer to Selection Chart of Grouts and Flexible Joints	0511 Lining, 0522 Partitions – framed and lined.
Engineered panel floors	Mapei Products for the Installation of Timber flooring	Ultrabond P990 1K and Ultrabond Eco S955 1K	0654 Engineered panel flooring.
Joinery doors	Selection Chart of Grouts and Flexible Joints	Mapeflex PU45 and Mapesil AC.	0453 Doors and access panels.
Mirrors	Selection Chart of Grouts and Flexible Joints	Mapeflex PU45 and Mapesil AC.	0467 Glass components.
Stainless steel faced wall panels or splashbacks	Selection Chart of Grouts and Flexible Joints	Mapeflex PU45 and Mapesil AC. Refer to	0551 Joinery, 0553 Stainless steel benching.
Timber joinery fitments			0551 Joinery.
Trims, mouldings, skirtings and architraves	Selection Chart of Grouts and Flexible Joints	Mapeflex PU45 and Mapesil AC	0511 Lining.
Mechanical services		(generic product)	0732 Air filters, 0744 Ductwork insulation, 0752 Mechanical piping insulation, 0762 Cool rooms.
Hydraulic services	Selection Chart of Grouts and Flexible Joints	Mapeflex PU45 and Mapesil AC	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.

Mapei product group: Select from the product groups noted in **PRODUCTS**.

Mapei product: Select from the appropriate Mapei Selection chart.

Generic product: Select a product or give a generic description as follows:

- Adhesive fixed timber strip flooring and parquet systems: High strength contact adhesive.
- Colourback glass faced wall panels or splashbacks: 1 part polyurethane sealant/adhesive with permanent elasticity.
- Drywall lining/wall panels: High strength contact adhesive.
- Engineered panel floors: High strength contact adhesive.
- Joinery doors: PVA or 1 part polyurethane.
- Mirrors: 1 part polyurethane sealant/adhesive with permanent elasticity.
- Stainless steel faced wall panels or splashbacks: 1 part polyurethane sealant/adhesive with permanent elasticity.
- Timber joinery fitments: PVA or 1 part polyurethane.
- Trims, mouldings, skirtings and architraves: High strength contact adhesive.
- Mechanical services: Check for fire property requirements.

Relevant worksection: Coordinate the selection with related default text.

4.2 RESILIENT ADHESIVES

Application schedule

Application	Mapei product group	Mapei product	Relevant worksections
Floors	Mapei Products for resilient adhesives		0651 Resilient finishes, 0652 Carpets.
Sports flooring	Mapei Products for resilient adhesives		0651 Resilient finishes.
Wall coverings	Mapei Products for resilient adhesives		0641 Applied wall finishes
Steps, profiles, covings and skirtings.	Mapei Products for resilient adhesives		0651 Resilient finishes.

Floors: Repeat this line for the product to match each floor covering.

Mapei product group: Select from the product groups noted in **PRODUCTS**.

Mapei product: Select from the appropriate Mapei Selection chart.

Relevant worksections: Delete generic adhesives as required.

4.3 ADHESIVES FOR CERAMIC TILING AND STONE MATERIAL

Application schedule

Application	Mapei product group	Mapei product	Relevant worksections
Thin porcelain tiles on internal and external surfaces	Mapei ceramic and stone tiling adhesives		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone on internal floors	Mapei ceramic and stone tiling adhesives		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone on internal walls	Mapei ceramic and stone tiling adhesives		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone on external surfaces	Mapei ceramic and stone tiling adhesives		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.

Mapei product group: Select from the product groups noted in **PRODUCTS**.

Mapei product: Select from the appropriate Mapei Selection chart.

Relevant worksections: Delete generic adhesives as required.

4.4 GROUTS AND FLEXIBLE JOINTS

Application schedule

Application	Mapei product group	Mapei product	Relevant worksections
External surfaces	Mapei Elastic Joints		
Ceramic tiles, mosaics and stone on internal floors	Mapei cementitious grouts		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone on internal walls	Mapei cementitious grouts		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone on external surfaces	Mapei cementitious grouts		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.
Ceramic tiles, mosaics and stone for commercial applications	Mapei epoxy grouts		0631 Ceramic tiling, 0632 Stone and terrazzo tiling.

Mapei product group: Select from the product groups noted in **PRODUCTS**.

Mapei product: Select from the appropriate Mapei Selection chart.

Relevant worksections: Delete grouts and flexible joints as required.

4.5 ANCHORS

Bonded anchor schedule

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.

4.6 SEALING, POINTING AND BEDDING**Application schedule**

Application	Product	Relevant worksections
Metal flashings and rainwater goods	(generic product)	0421 Roofing – combined, 0423 Roofing – profiled sheet metal, 0424 Roofing – seamed sheet metal, 0425 Roofing – shingles and shakes, 0426 Roofing – slate, 0427 Roofing – tiles.
Metal flashings and sealing non-porous substrates	(generic product)	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.
Window and external doors	Mapesil AC	0432 Curtain walls, 0451 Windows and glazed doors, 0453 Doors and access panels, 0463 Glass blockwork.
Mechanical services		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.
Hydraulic services	Mapesil AC	0811 Sanitary fixtures, 0812 Tapware, 0813 Water heaters, 0815 Boiling, chilled and filtered water dispensers.

Describe the location and details or refer to the drawings.

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

Product: Select a product or give a generic description as follows:

- Metal flashings and rainwater goods: Silicone neutral cure.
- Sealing non-porous substrates: 1 part elastomeric polyurethane for fast moving joints in light components e.g. metal.
- Windows and external doors: 1 part elastomeric polyurethane.
- Mechanical services: Check for fire property requirements.

Relevant worksection: Coordinate the selection with related default text.

Adhesives, sealants and fasteners combined function schedule

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

Describe the location and details or refer to the drawings.

Product: Select generically from the following:

- Acoustic ceiling tiles: Polyurethane modified silicone for general purpose gap filling.
- Wet area sealants and lightweight detail items: Silicone neutral cure formulated to prevent microbiological growth for kitchen and sanitary ware applications.
- Acrylic latex: For general interior pointing.
- 1 part elastomeric polyurethane: For fast moving joints in lightweight components e.g. metal.
- Control joints and wet area sealants: 2 part elastomeric polyurethane for fast moving joints in light structures
- Timber floor control joints: 2 part elastomeric polyurethane for fast moving joints in light structures
- Cool rooms: Butyl rubber where absolute vapour pressure is required.

Relevant worksection: Coordinate the selection with related default text.

4.7 SEALING STRUCTURALLY DESIGNED CONTROL JOINTS

Application schedule

Application	Mapei product group	Mapei product	Bond breaking	Sealant colour	Relevant worksection
Masonry control joints	Mapei flexible joints	Mapeflex PU45		Grey	0317 Tilt-up concrete, 0331 Brick and block construction, 0332 Stone masonry.
Trafficable masonry control joints	Mapei flexible joints	Mapeflex PU45		Grey	0274 Concrete pavement, 0275 Paving – mortar and adhesive bed.

Describe the location and details or refer to the drawings.

Mapei product group: Select from the product groups noted in **PRODUCTS**.

Mapei product: Select from the appropriate Mapei Selection chart.

Relevant worksections: Delete generic adhesives as required.

Bond breaking: Consult manufacturers for joint fillers, e.g. closed cell expanded polythene, for compatibility with the sealant. Rigid fillers such as pulp board, cork or semi-rigid foam should not be specified.

Sealant colour: e.g. Grey.

Relevant worksection: Coordinate the selection with related default text.

4.8 FIRE-RESISTING SEALANTS

Application schedule

Application	Sealant type	Bond breaking	Sealant colour	Fire-resistance level to AS 1530.4 (FRL)	Relevant worksection
Masonry control joints					0317 Tilt-up concrete, 0331 Brick and block construction, 0332 Stone masonry.
Pointing and stopping (including acoustic applications)					0182 Fire-stopping, 0346 Structural fire protection systems, 0472 Acoustic insulation.
Sealing of structural steel fire protection systems					0346 Structural fire protection systems.

Describe the location and details or refer to the drawings.

Sealant type:

- Masonry control joints: e.g. Intumescent 1 part polyurethane.
- Pointing and stopping: e.g. Intumescent acrylic.

Bond breaking: Consult manufacturers for joint fillers, e.g. closed cell expanded polythene, for compatibility with the sealant. Rigid fillers such as pulp board, cork or semi-rigid foam should not be specified.

Sealant colour: e.g. Grey.

Fire-resistance level (FRL) to AS 1530.4: e.g. 60/60/60.

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)
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 test of 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
ASTM A240/A240M	2016	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
The following documents are mentioned only in the <i>Guidance</i> text:		
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	2011	Masonry structures
NATSPEC DES 010	2009	Atmospheric corrosivity categories for ferrous products
NATSPEC DES 017	2006	Selection of sealants
NATSPEC DES 020	2011	Fire behaviour of building materials and assemblies
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	2016	Specifying ESD
SCAQMD Rule 1168	1989	South Coast Air Quality Management District Rule 1168 - Adhesive and sealant applications (California, U.S.)