

0277P TACTILE SYSTEMS CAR PARK FIXTURES IN PAVEMENT ANCILLARIES

Branded worksection

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Worksection abstract

This branded worksection *Template* is applicable to the installation of channels, kerbs, linemarking, and car park fixtures and pavement ancillaries produced by TACTILE SYSTEMS.

How to use this worksection

Customise this worksection *Template* for each project. See [A guide to NATSPEC worksections \(www.natspec.com.au\)](#) for information on *Template* structure, word styles and completing a worksection.

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, including:

- 0272 Asphalt.
- 0273 Sprayed bituminous surfacing.
- 0274 Concrete pavement.
- 0275 Paving - mortar and adhesive bed.
- 0276 Paving - sand bed.
- 0321 Precast concrete.

Related branded worksections include:

- 0195p TACTILE SYSTEMS TGSI and stair nosing.

Material not provided by TACTILE SYSTEMS

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

- Kerb and channel (gutter).
- Linemarking.
- Raised pavement markers.

Material not included in NATSPEC

Some projects may include items not covered by NATSPEC. For these you may need to create new text or modify this text or a suitable worksection.

Documenting this and related work

You may document this and related work as follows:

- Show all channel types and/or kerb type details on the drawings.
- Show all linemarking types and locations on the drawings.
- Show all raised pavement marker types and locations on the drawings.
- Show the location and type of vehicle barriers on the drawings.
- Document tactile ground surface indicators in 0195p TACTILE SYSTEMS TGSI and stair nosing.

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

Search acumen.architecture.com.au, the Australian Institute of Architects' practice advisory subscription service, for notes on the following:

- Guarantees and warranties.

1 GENERAL

Tactile Systems is a leading provider of high-quality products and services in the building industry and public sector. With a strong track record since 1999, they have established themselves as a trusted name in the industry. Their commitment to

delivering products that meet Australian Standards, the National Construction Code, and other relevant regulations ensures that their clients receive top-notch solutions and a one-stop solution for their project requirements.

1.1 RESPONSIBILITIES

General

Requirement: Provide TACTILE SYSTEMS car park fixtures and other pavement ancillaries, as documented.

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

1.2 COMPANY CONTACTS

TACTILE SYSTEMS technical contacts

Website: www.tactilesystems.com.au/contact

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.

- 0195p TACTILE SYSTEMS TGSi and stair nosing.

1.4 MANUFACTURER'S DOCUMENTS

Technical manuals

Website: www.tactilesystems.com.au/products

1.5 INTERPRETATION

Definitions

General: For the purposes of this worksection, the following definitions apply:

- Absolute level tolerance: Maximum deviation from design levels.
- Relative level tolerance: Maximum deviation from a 3 m straightedge laid on the surface.

Edit the Definitions subclause to suit the project or delete if not required. List alphabetically.

1.6 TOLERANCES

Channels and kerbs

Absolute level tolerance: ± 10 mm at any point on the finished surface.

Relative level tolerance: 5 mm to the top or face of kerbs, and to the surface of channels.

Plan position deviation: 25 mm.

Exception: Kerb laybacks, grade changes or curves, or at gully pits requiring channel depression.

Linemarking

Longitudinal line lengths: ± 20 mm from the lengths documented in AS 1742.2 (2022).

Longitudinal line widths: ± 10 mm from the widths documented in AS 1742.2 (2022).

Transverse line lengths and widths: ± 10 mm from the lengths and widths documented in AS 1742.2 (2022).

Other markings: ± 50 mm from the dimensions documented or in AS 1742.2 (2022) for arrows, chevrons, painted medians, painted left turn islands and speed markings. Place arrows and speed markings square with the centreline of the traffic lane.

Raised pavement markers

Plan position deviation: 20 mm.

Directional displacement: $\pm 4^\circ$.

Vehicle barriers

Plan position deviation: 50 mm.

Length: ± 20 mm.

Bollard plumb: H/100.

1.7 SUBMISSIONS**Products and materials**

Linemarking material properties: Submit test reports to the AS 4049 series, at least seven days before work is scheduled to start, including paint and glass beads.

Environmental Product Declaration (EPD): Submit an EPD to ISO 14025 (2006) with a Product Category Rule (PCR), used to calculate environmental impact indicators, to EN 15804 (2012) or ISO 21930 (2017).

If the submission of an EPD is a project requirement, change this *Optional* style text to *Normal* style text.

Nominate which products are required to have an EPD either here or in PRODUCTS.

An EPD is an independently verified and registered document that quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function. EPDs can support carbon emission reduction by allowing a fair and equitable comparison of the impacts of different materials and products within specific product categories.

Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

1.8 INSPECTION**Notice**

Inspection: Give notice so that inspection may be made of the following:

- Set-out of pavement ancillaries.

Edit to suit the project, adding critical stage inspections required.

Hold points, if required, should be inserted here.

2 PRODUCTS**2.1 GENERAL****Product substitution**

Other products: Conform to **SUBSTITUTIONS** in 0171 *General requirements*.

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

Avoid the use of phrases such as 'or equivalent' for substitutions of proprietary products, as products that look or claim to be equivalent may not have undergone the same testing and certification processes as the specified products, and therefore may not be able to fulfill the same performance requirements.

2.2 TACTILE SYSTEMS CAR PARK FIXTURES**Corner guards**

Description: Corner guard suitable for pedestrian and light traffic use.

Available in a range of materials and finishes. Refer to **TACTILE SYSTEMS car park fixtures schedule** for options.

Safety mirrors

Description: Wall or post fixed high grade acrylic convex safety mirror.

Available in a range of sizes. Refer to **TACTILE SYSTEMS car park fixtures schedule** for options.

Speed cushions

Description: High grade rubber modular speed cushion, comprising interlocking 495 mm wide black and yellow sections with interlocking end caps.

Document in **TACTILE SYSTEMS car park fixtures schedule**.

Speed humps

Description: Recycled plastic modular speed hump, comprising interlocking 250 mm wide black or yellow sections with interlocking end caps.

Document in **TACTILE SYSTEMS car park fixtures schedule**.

Wheel stops

Standard: To AS/NZS 2890.1 (2004).

Concrete wheel stop: 1650 x 150 x 100 mm high wheel stop, with two fixing holes.

Rubber wheel stop: 1650 x 160 x 100 mm high black and yellow wheel stop, with three fixing holes.

Document in **TACTILE SYSTEMS car park fixtures schedule**.

Height bars

Description: 100 x 50 mm steel height bar. Painted in high visibility yellow with reflective red and white stripes, LOW CLEARANCE wording and unique height text for project specific clearance heights.

Available in 2 lengths. Refer to **TACTILE SYSTEMS car park fixtures schedule** for options.

Rumble strips

Description: 95 x 25 mm high rubber modular rumble strip, comprising 1000 mm long black and yellow striped units with fixing holes.

Document in **TACTILE SYSTEMS car park fixtures schedule**.

Rumble bars

Description: 300 x 170 x 42 mm high recycled rubber rumble bar, with 4 built-in reflectors and two fixing holes.

Available in 2 colours. Refer to **TACTILE SYSTEMS car park fixtures schedule** for options.

Downpipe protectors

Description: 1200 x 150 x 150 x 2 mm thick galvanized steel downpipe protectors, with fixing holes.

Custom sizing and powdercoat finish also available. Refer to **TACTILE SYSTEMS car park fixtures schedule** for options.

Car park studs

Description: 100 mm diameter slip-resistant stainless steel head, with concealed fixing stud.

Document in **TACTILE SYSTEMS car park fixtures schedule**.

2.3 TACTILE SYSTEMS BOLLARDS

In-ground / cast-in bollards

Description: Range of 4 mm thick galvanized steel bollard.

Yellow powdercoat finish also available. Refer to **TACTILE SYSTEMS bollard schedule** for options.

Surface mounted bollards

Description: Range of 4 mm thick steel bollard with fully welded mounting plate.

Yellow powdercoat finish also available. Refer to **TACTILE SYSTEMS bollard schedule** for options.

Lockable and removable bollards

Description: Lockable and removable galvanized steel bollard with yellow powdercoat finish.

Available as either surface mounted or cast-in type. Refer to **TACTILE SYSTEMS bollard schedule** for options.

Pivot-base bollards

Description: 90 x 90 x 800 mm high lockable galvanized steel bollard with yellow powdercoat finish. Bollard is pivoted on 200 x 200 mm baseplate.

Document in **TACTILE SYSTEMS bollard schedule**.

Remote control parking bollards

Description: Battery powered and remote controlled bollard with active folding arm.

Document in **TACTILE SYSTEMS bollard schedule**.

Stainless steel bollards

Description: Polished Type 316 stainless steel bollard, with fully welded mounting plate.

Refer to **TACTILE SYSTEMS bollard schedule** for options.

2.4 TACTILE SYSTEMS BIKE RACKS

Surface mount bike racks

Description: Surface mounted steel bike rack, with predrilled fixing holes.

Available for 3, 5 or 8 bikes in galvanized or stainless steel. Refer to **TACTILE SYSTEMS bike racks schedule** for options.

Hoop shaped bike racks

Description: Single hoop 910 x 846 mm high surface mounted steel bike rack, with two fixing plates.

Available in galvanized or stainless steel. Refer to **TACTILE SYSTEMS bike racks schedule** for options.

P-style bike racks

Description: 1200 mm wide surface mounted steel bike rack suitable for 4 bikes.

Available in range of finishes. Refer to **TACTILE SYSTEMS bike racks schedule** for options.

Padded wall mounted single bike racks

Description: Wall mounted single galvanized steel bike storage rack with heavy duty sleeve.

Document in **TACTILE SYSTEMS bike racks schedule**.

Scooter racks

Description: 1050 mm wide, 10 bay galvanized steel scooter rack with predrilled fixing plates.

Document in **TACTILE SYSTEMS bike racks schedule**.

Single wall mounted bike racks

Description: Wall mounted single galvanized steel bike rack with powdercoat finish.

Document in **TACTILE SYSTEMS bike racks schedule**.

Square bike racks

Description: Square 850 x 800 mm high surface mounted galvanized steel bike rack, with two fixing plates.

Document in **TACTILE SYSTEMS bike racks schedule**.

Vertical bike racks

Description: Wall mounted single steel bike rack.

Available with galvanized or black powdercoat finish. Refer to **TACTILE SYSTEMS bike racks schedule** for options.

2.5 TACTILE SYSTEMS SKATE DETERRENTS**Skate deterrent corner series**

Description: Marine grade stainless steel bar with two 30 mm stems and concealed fixings.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

Skate deterrent dome

Description: Marine grade stainless steel dome with 20 mm diameter head, 30 mm stems and concealed fixing.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

Skate deterrent anti-skate nosings

Description: 100 x 40 x 25 mm marine grade steel nosing, with two holes for screw fixing.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

Skate deterrent button series

Description: Range of marine grade steel buttons with 30 mm diameter head, 20 mm button height and concealed stem fixing.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

Skate deterrent protector bar series

Description: 110 x 13 x 10 mm high marine grade stainless steel bar, with two 30 mm stems for concealed fixing.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

Skate deterrent wedge series

Description: 80 x 80 x 5 mm thick marine grade stainless steel wedge for fixing in machined slot or joint.

Document in **TACTILE SYSTEMS skate deterrent schedule**.

2.6 KERB AND CHANNEL (GUTTER)**Concrete**

Requirement: As documented.

Document requirements in the **Concrete kerb and channel (gutter) schedule** or detail on drawings.

Precast: Proprietary precast units as documented.

In situ: To AS 1379 (2007).

Document material requirements such as the concrete strength, maximum aggregate size and slump on drawings or in the **Concrete properties schedule**.

Concrete profile: [complete/delete]

AS 2876 (2000) has been withdrawn. It provides typical section details in Appendix A and may be used for guidance.

Stone

Requirement: As documented.

Document requirements in the **Stone kerb and channel (gutter) schedule** or detail on drawings.

Kerb: To EN 1343 (2012).

EN 1343 (2012) provides requirements and test methods for kerbs of natural stone. There is no Australian Standard for stone kerb and channel.

Natural stone: Stone of uniform quality, sound and free from defects liable to affect its strength, appearance or durability.

2.7 LINEMARKING

General

Requirement: As documented.

Document requirements in the **Linemarking schedule** or detail on drawings.

Pavement marking paint

Requirement: Conform to the following:

- Solvent-borne paint: To AS 4049.1 (2005).
- Waterborne paint: To AS 4049.3 (2005).
- High performance: To AS 4049.4 (2006).

Glass beads

Standard: To AS 2009 (2024).

Bead type: B.

Consider the requirement for glass beads. If retroreflectivity of the linemarking is not required, then the use of glass beads may not be required.

2.8 RAISED PAVEMENT MARKERS

General

Requirement: As documented.

Document requirements in the **Raised pavement markers schedule** or detail on drawings.

Standard: To AS/NZS 1906.3 (2017).

2.9 OTHER MATERIALS

Mortar materials

Cement: To AS 3972 (2010).

Sand: Fine aggregate free from deleterious matter.

Water: Clean and free from any deleterious matter.

Cement:sand: [complete/delete]

Nominate the cement:sand ratio. e.g. 1:3, 1:4.

Tactile ground surface indicators

Requirement: To 0195p TACTILE SYSTEMS TGSI and stair nosing.

Document requirements in 0195p TACTILE SYSTEMS TGSI and stair nosing.

3 EXECUTION

3.1 TACTILE SYSTEMS CAR PARK FIXTURES

Setting out

General: Set out the work in accordance with AS/NZS 2890.1 (2004). Maintain minimum clearances to adjacent paths of travel.

Fixing

General: Install to manufacturer's recommendations using anchor fixings or 2 part epoxy construction adhesive. Use proprietary brackets and accessories from the manufacturer if required.

Precast concrete wheel stops

Installation: Drive 12 mm diameter galvanized steel rods a minimum of 600 mm below finished surface level and stop the top of the rod 25 mm below the top of the wheel stop.

Concrete pavement/slab: Bolt the wheel stop to the pavement using galvanized steel masonry anchors, installed to manufacturer's recommendations. Top of bolt to stop 25 mm below the top of the wheel stop.

Completion: Grout fill the holes flush to match the concrete finish.

3.2 TACTILE SYSTEMS BOLLARDS

Setting out

General: Set out the work so that all units are located as documented. Install units to **TOLERANCES, Vehicle barriers.**

In-ground / cast-in bollards

Existing concrete installation: Place bollard base into preformed, or core drilled, hole and grout in to manufacturer's recommendations.

New concrete footing: Encase buried end of bollard in concrete footing, minimum 600 mm deep x 250 mm diameter. Finish top of footing minimum 100 mm below finished surface level.

Suggested minimum size of concrete footing. Confirm with the structural engineer.

Surface mounted bollards

Installation: Install to manufacturer's recommendations using fixings compatible with the baseplate and the substrate through predrilled baseplate holes. Grout up any gaps under base plates on completion.

3.3 TACTILE SYSTEMS BIKE RACKS

Setting out

General: Set out the work in accordance with AS 2890.3 (2015). Maintain minimum clearances to adjacent paths of travel when bikes are parked.

Fixing

Installation: Install to manufacturer's recommendations using anchor fixings compatible with the rack and suitable for the substrate.

3.4 TACTILE SYSTEMS SKATE DETERRENTS

Setting out

General: Set out the work so that all units are equally spaced, as documented.

Fixing

Installation: Install to manufacturer's recommendations using 2 part epoxy adhesive, or stainless steel screw fixings where documented.

3.5 KERB AND CHANNEL (GUTTER)

General

Precast concrete: Install to manufacturer's recommendations.

In situ concrete: Construct kerbs and/or channels in fixed forms, by extrusion or by slip forming.

Stone: Lay butt jointed.

Preparation

Subgrade or subbase material: Compact to form a firm base extending at least 150 mm beyond the proposed alignment of the back of the kerb. Match the adjoining pavement subgrade/subbase

compaction or compact to 95% standard maximum dry density to AS 1289.5.1.1 (2017), as appropriate.

Edit text to nominate 95% modified maximum dry density or 98% standard maximum dry density if required.

Concrete base: Provide a concrete base and mortar bed for stone and kerb channels above the compacted subgrade or subbase, as documented.

Setting out

General: Set out the work so that all channels and kerbs are placed with tolerances, as documented.

Joints

Joint type and location: As documented.

Document the joint type and location on drawings or in the **Concrete kerb and channel (gutter) joints schedule**.

Contraction joint: Provide as follows:

- Extruded kerb: Cut a minimum of 50% of the cross-sectional area. Do not distort the kerb or adjacent surfaces. Tool the top of the joint to create a groove minimum 20 mm deep and 5 mm wide.
- Formed kerb: Form joint at the documented locations.

Construction joint in concrete kerb and channel: Roughen the surface of the set concrete at the location of the joint. Remove loose or soft material, foreign matter and laitance. Dampen the surface just before placing the fresh concrete and coat with a neat cement slurry.

Expansion joint: Form joint, as documented.

Concrete pavement: If channels and/or kerbs are cast adjacent to a concrete pavement, continue the same joint type, as documented for the concrete pavement, across the channels and/or kerbs.

Backfill

Timing: Not earlier than three days after placing channels and/or kerbs, backfill and reinstate the spaces on both sides of the channels and/or kerbs.

Material: Granular, free of organic material, clay and rock in excess of 50 mm diameter.

Compaction: Compact backfill in maximum 150 mm thick layers, to a relative compaction of 95% tested to AS 1289.5.4.1 (2007), for standard compactive effort.

Refer to HB 160 (2006) for soil testing.

Pavement: Backfill pavement material adjacent to new channels and/or kerbs to the documented requirements of the pavement material.

3.6 LINEMARKING

For bicycle path and footpath requirements, see AS 1742.9 (2018).

Preparation

Surface: Clean, dry and free of any deposit that may impair adhesion of the linemarking.

Wet weather: Do not apply linemarking during wet weather or if rain is likely to fall during application or paint drying time.

Provision for traffic: Allow for traffic during application and protect linemarkings until the material has dried sufficiently to carry traffic without being damaged.

Mixing of paint: Before use, mix all paint in its original container to produce a smooth uniform product consistent with the freshly manufactured product.

Removal of existing pavement markings

General: Remove existing linemarking, as documented, from the wearing surface of pavements without causing significant damage to the surface.

Setting out

General: Set out the work so that all linemarkings are placed within tolerances, as documented.

Application of linemarking

Longitudinal lines: Spray all longitudinal lines with a self-propelled machine. For a one-way or two-way barrier line pattern, concurrently spray the two sets of lines.

In small car parks or over very short distances, hand spraying may be documented for longitudinal lines.

Hand spraying: Hand spray transverse lines, symbols, letters, arrows and chevrons using templates.

Paint thickness: Uniform wet film thickness: 0.35 to 0.40 mm.

Linemarking alignment: Straight or with smooth, even curves as documented.

Edges: Form clean, sharp edges. Remove any paint applied beyond the defined edge of the linemarking and leave a neat and smooth marking on the wearing surface of the pavement.

Glass bead application

Glass beads: Apply glass beads immediately after the application of the paint, at the following minimum rates:

- Longitudinal lines: 0.5 kg/m².
- Other markings: 0.3 kg/m².

Delete if glass beads are not required.

3.7 RAISED PAVEMENT MARKERS

Preparation

Surface: For concrete wearing surfaces, scabble the full area below each marker to remove the fine mortar material.

Adhesive preparation: Freshly heat and mix the adhesive to the manufacturer's recommendations. Do not allow the adhesive to cool and do not reheat before use.

Setting out

General: Set out the work so that all raised pavement markers are placed within tolerances, as documented.

Installation to regular surfaces

Application of adhesive: Spread the adhesive uniformly over the underside of the raised pavement marker to a depth of approximately 10 mm.

Adhesion of marker to pavement: Conform to the following:

- Press the raised pavement marker onto the pavement surface in its correct position and rotate slightly until the adhesive is squeezed out around all edges of the marker.
- Do not disturb the raised pavement marker until the adhesive has set.

Installation to rough surfaces

Adhesion of marker: Conform to the following:

- Apply an initial pad of adhesive of diameter 20 mm larger than the diameter of the base of the raised pavement marker.
- Apply the adhesive to fill the irregularities in the pavement surface to produce a flat, smooth surface flush with the upper level.
- Allow the adhesive pad to set.
- Apply adhesive to the raised pavement marker and adhere to the adhesive pad on the pavement surface, in conformance with **Installation to regular surfaces**.

3.8 TACTILE GROUND SURFACE INDICATORS

Installation

General: To 0195p TACTILE SYSTEMS TGSi and stair nosing.

Document requirements in 0195p TACTILE SYSTEMS TGSi and stair nosing.

3.9 COMPLETION

Cleaning

Completion: Clean progressively and leave adjoining surfaces, pavements and ancillaries clean on completion.

Warranties

Refer to 0171 General requirements for appropriate warranty type and the terms covered in the warranty.

Type: Manufacturer warranty for TACTILE SYSTEMS products.

Period:

- Skateboard deterrents: 2 years.
- All other TACTILE SYSTEMS products: 1 year.

4 SELECTIONS

Schedules are a tool to specify properties required for products or systems. If the principal permits documentation of the product or system by proprietary name, some of the properties may be unnecessary and can be deleted. Document the product or system's location or application here and/or on the drawings with a matching project code. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

4.1 SCHEDULES

TACTILE SYSTEMS car park fixtures schedule

	A	B	C
Product code			
Dimensions			
Finish			
Fixing			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Nominate the required quantity, extent and location on the drawings.

Product code: Nominate the required product code from the options below.

Include any additional information such as Dimensions and Finish. If use of product code defines the product sufficiently, remove any rows from the schedule that are not required.

Fixing: Nominate any specific requirements, including surface mounted, wall hung, post mounted, using fixings or adhesive.

Refer to the products documented in PRODUCTS, **TACTILE SYSTEMS CAR PARK FIXTURES**.

Corner guards:

- 80 x 80 x 780 mm high grade rubber black and yellow corner guard. Product code: CG-800-BY.
- 1200 x 100 x 100 x 1.6 mm stainless steel brushed finish corner guard. Product code: CG-1200-SS.
- 1200 x 100 x 100 x 1.6 mm galvanised steel corner guard. Product code: CG-1200-GAL.

Safety mirrors:

- Available in 300, 450, 600 and 800 mm diameters. Product code: CM-300-AM, CM-450-AM, CM-600-AM, CM-800-AM. Nominate either post or wall fixing brackets.

Speed cushions:

- 495 mm wide black and yellow interlocking middle sections. Product code: CSC-500-BY.
- End caps. Product code: CSC-EC-B.

Speed humps:

- 250 mm wide black and yellow interlocking middle sections. Product code: AUSH-1000-BY.
- End caps. Product code: AU-EC-250-BY.

Wheel stops:

- 1650 x 150 x 100 mm high concrete wheel stops. Product code: CWS-C-1650-GFR.
- 1650 x 160 x 100 mm high black and yellow rubber wheel stops. Product code: PWS-1650-BY.

Height bars:

- 3 m or 5 m long. Product code: VHB-3M or VHB-5M. Nominate clearance height to show on height bar.
- Ceiling mounted assembly. Code: VHB-CM. Wall mounted assembly. Product code: VHB-WM.

Rumble strips:

- 95 x 25 mm high modular black and yellow striped rubber rumble strips 1000 mm long. Product code: SRS-TSA-1000-BY.

Rumble bars:

- 300 x 170 x 42 mm high recycled rubber rumble bars. Available in yellow or black. Product code: SRB-TSA-YEL or SRB-TSA-BLA.

Downpipe protectors:

- 1200 x 150 x 150 mm galvanised steel downpipe protectors. Product code: DPS-150-GAL.
- Product code: DPC-GAL for custom sizes and finishes (nominate in table).

Car park studs:

- 100 mm diameter stainless steel studs. Product code: DRS-30-TSA-SS.

TACTILE SYSTEMS bollard schedule

	A	B	C
Product code			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Nominate the required quantity, extent and location on the drawings.

Product code: Nominate the required product code from the options below.

Refer to the products documented in PRODUCTS, **TACTILE SYSTEMS BOLLARDS**.

In-ground / cast-in bollards:

- 114 x 1000 mm plus 300 mm in ground. Yellow powdercoat finish. Product code: BCI-114-YEL.
- 140 x 1200 mm plus 400 mm in ground. Yellow powdercoat finish. Product code: BCI-140-YEL.
- 165 x 1300 mm plus 500 mm in ground. Yellow powdercoat finish. Product code: BCI-165-YEL.
- 200 x 1300 mm plus 500 mm in ground. Yellow powdercoat finish. Product code: BCI-200-YEL.
- 200 x 1300 mm plus 500 mm in ground. Galvanised finish. Product code: BCI-200-GAL.

Surface mounted bollards:

- 114 x 1000 mm high. Yellow powdercoat finish. Product code: BSM-114-YEL.
- 140 x 1200 mm high. Yellow powdercoat finish. Product code: BSM-140-YEL.
- 140 x 1200 mm high. Galvanised finish. Product code: BSM-140-GAL.
- 165 x 1300 mm high. Yellow powdercoat finish. Product code: BSM-165-YEL.
- 165 x 1300 mm high. Galvanised finish. Product code: BSM-165-GAL.
- 220 x 1500 mm high. Yellow powdercoat finish. Product code: BSM-220-YEL.

Lockable and removable bollards:

- 90 x 950 mm high with mounting plate. Yellow powdercoat finish. Product code: BSMKL-950-YEL.
- 90 x 1000 mm high with cast-in sleeve with lid. Yellow powdercoat finish. Product code: BRM-90-YEL.

Pivot-base bollard:

- 90 x 90 x 800 mm high pivoted lockable bollard with yellow powdercoat finish. Product code: BSP-800-YEL.

Remote control parking bollard:

- Remote controlled bollard with folding arm. Product code: RC-PLB-450MMX400MMX70MM.

Stainless steel bollards:

- 90 x 1000 mm high. Product code: BSM-140-SS.
- 165 x 1300 mm high. Product code: BSM-165-SS.

TACTILE SYSTEMS bike racks schedule

	A	B	C
Product code			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Nominate the required quantity, extent and location on the drawings.

Product code: Nominate the required product code from the options below.

Refer to the products documented in PRODUCTS, **TACTILE SYSTEMS BIKE RACKS**.

Surface mounted bike rack:

- 3 bay bike rack: Product code: BR-3B-G for galvanised, or BR-3B-S for stainless steel.
- 5 bay bike rack: Product code: BR-5B-G for galvanised, or BR-5B-S for stainless steel.
- 8 bay bike rack: Product code: BR-8B-G for galvanised, or BR-8B-S for stainless steel.

Hoop-shaped bike rack:

- Product code: BR-G-850 for galvanised, or BRH-S-850 for stainless steel.

P-style bike rack:

- Product code: BR-P-style-G for galvanised, or BR-P-style-BLK&YEL for powdercoat finish.

Padded wall mounted single bike rack:

- Product code: WMBR-GAL.

Scooter rack:

- Product code: TL-SBR01-G.

Single wall mounted bike rack:

- Product code: WMBR-PC-01.

Square bike rack:

- Product code: BR-S-G-SM.

Vertical bike rack:

- Product code: BR-VBR-02-G for galvanised, or BR-VBR-02-BLK for powdercoat finish.

TACTILE SYSTEMS skate deterrent schedule

	A	B	C
Product code			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Nominate the required quantity, extent and location on the drawings.

Product code: Nominate the required product code from the options below.

Refer to the products documented in PRODUCTS, **TACTILE SYSTEMS SKATE DETERRENTS**.

Skate deterrent corner series:

- Product code: SKU:SDC-30-SS. Stainless steel.

Skate deterrent dome:

- Product code: SKU:SDD-30-SS. Stainless steel.

Skate deterrent anti-skate nosing:

- Product code: SK8N-100x40x25-SS. Stainless steel.

Skate deterrent button series:

- Product code: SDB-30-SS for stainless steel, or SDB-30-BR for brass.

Skate deterrent protector bar series:

- Product code: SDB-110x13x10-SS. Stainless steel.

Skate deterrent wedge series:

- Product code: SDW-80x80-SS. Stainless steel.

Concrete properties schedule

	A	B	C
Strength grade/characteristic compressive strength f'_c (MPa)			
Air entrainment – air volume (%)			
Slump (mm)			
Maximum aggregate size (mm)			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Concrete kerb and channel (gutter) schedule

	A	B	C
Unit size			
Face finish			
Edge profile			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Unit size: Dimensions, volume, or both.

Face finish: e.g. Steel trowel.

Edge profile: e.g. Chamfered, Bullnosed, Square.

Concrete kerb and channel (gutter) joints schedule

	A	B	C
Type			
Location			
Joint width (mm)			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Type: Contraction (shrinkage), Construction or Expansion.

Location: Nominate a spacing such as 2.5 m intervals for concrete kerbs or nominate the location such as at kerb transition zones or at vehicle crossings.

Joint width (mm): Nominate the joint width if required. e.g. 15 mm.

Stone kerb and channel (gutter) schedule

	A	B	C
Material			
Source of supply			
Unit size			
Face finish			
Edge profile			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Material: e.g. Sandstone, bluestone, granite.

Source of supply: e.g. Quarry.

Unit size: Dimensions, volume, or both.

Face finish: e.g. Exfoliated.

Edge profile: e.g. Chamfered, Bullnosed, Square.

Linemarking schedule

	A	B	C
Pavement marking paint			
Pavement marking paint colour			
Glass beads			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Pavement marking paint: e.g. Solvent-borne, Waterborne, High performance.

Pavement marking paint colour: e.g. white, yellow. AS/NZS 2890.1 (2004) clause 4.4 on pavement markings specifies either white or yellow for car parking spaces and pedestrian crossings within car parks. Also refer to state roads and traffic authority or relevant local authority for requirements.

Raised pavement markers schedule

	A	B	C
Marker category			
Retroreflective marker class			
Retroreflective marker type			
Adhesive			

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Marker category: To AS/NZS 1906.3 (2017).

- Category D: Non-retroreflective marker of distinctive body colour designed for day-time use.
- Category N: Retroreflective raised pavement marker designed for night-time use where body colour is unimportant.
- Category G: Retroreflective marker where the marker body colour generally represents the colour of the primary retroreflective element combining the characteristics of both Category D and Category N markers.
- Category S: Large glass spherical retroreflective marker with a round extended base.
- Category T: Retroreflective pavement marker designed for temporary use to provide day-time and night-time guidance for the road user before the completion of permanent markings.

Retroreflective marker class: To AS/NZS 1906.3 (2017) clauses 2.2.

- Class A: An initial level of photometric performance as specified in Table 3.2.
- Class B: An intermediate level of initial photometric performance as specified in Table 3.3.
- Class C: An intermediate level of initial photometric performance as specified in Table 3.4.

Retroreflective marker type: To AS/NZS 1906.3 (2017) clauses 2.3.

- Type 1: One-way retroreflective markers, one colour.
- Type 2: Two-way retroreflective markers, one colour.
- Type 3: Two-way retroreflective markers, two colours.

Adhesive: e.g. Hot melt bitumen adhesive.

REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1289		Methods of testing soils for engineering purposes
AS 1289.5.1.1	2017	Soil compaction and density tests - Determination of the dry density/moisture content relation of a soil using standard compactive effort
AS 1289.5.4.1	2007	Soil compaction and density tests - Compaction control test - Dry density ratio, moisture variation and moisture ratio
AS 1379	2007	Specification and supply of concrete
AS 1742		Manual of uniform traffic control devices
AS 1742.2	2022	Traffic control devices for general use
AS 1906		Retroreflective materials and devices for road traffic control purposes
AS/NZS 1906.3	2017	Raised pavement markers (retroreflective and non-retroreflective)
AS 2009	2024	Glass beads and particles for pavement-marking materials
AS 2890		Parking facilities
AS/NZS 2890.1	2004	Off-street car parking
AS 2890.3	2015	Bicycle parking
AS 3972	2010	General purpose and blended cements
AS 4049		Paints and related materials - Pavement marking materials
AS 4049.1	2005	Solvent-borne paint - For use with surface applied glass beads
AS 4049.3	2005	Waterborne paint - For use with surface applied glass beads
AS 4049.4	2006	High performance pavement marking systems
EN 1343	2012	Kerbs of natural stone for external paving - Requirements and test methods

The following documents are mentioned only in the **Guidance** text:

AS 1742		Manual of uniform traffic control devices
AS 1742.9	2018	Bicycle facilities
AS 2876	2000	Concrete kerbs and channels (gutters) - Manually or machine placed
HB 160	2006	Soils testing
NATSPEC GEN 006		Product specifying and substitution
NATSPEC GEN 024		Using NATSPEC selections schedules
EN 15804	2012	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
ISO 14025	2006	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 21930	2017	Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services