



Section 11: Road signage

Sutherland Shire Public Domain Technical Manual
Part D: Specification

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11 Road signage

11.1 Scope

This part of the Specification sets out the requirements for:

- the manufacture, supply and installation of permanent and temporary traffic signs and parking regulatory signs;
- the manufacture, supply and installation of sign support structures to support the signs; and
- the manufacture, supply and installation of street nameplates.

The works could arise from road construction projects, programmed replacement/modification to existing signposting not associated with construction projects or reactive maintenance.

11.2 Standards and guidelines

Unless stated otherwise in this specification, the drawings or elsewhere in the documents, work shall comply with the RMS on-line signs register, RMS QA Specification documents and relevant Australian Standards.

The following table indicates the Australian Standards, RMS QA specifications and Sutherland Shire Council manuals applicable to this section. This table is not exhaustive and may not include all standards which may apply to the work to be undertaken.

AS 1163	<i>Structural steel hollow sections</i>
AS 1214	<i>Hot-dip galvanized coatings on threaded fasteners</i>
AS 1379	<i>Ready-mixed concrete</i>
AS/NZS 1554.1	<i>Structural steel welding - Welding of steel structures</i>
AS 1627.0	<i>Metal finishing - Preparation and pretreatment of surfaces - Method selection guide</i>
AS 1627.1	<i>Metal finishing - Preparation and pretreatment of surfaces - Removal of oil, grease and related contamination</i>

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AS 1627.4		<i>Metal finishing - Preparation and pretreatment of surfaces - Abrasive blast cleaning of steel</i>
AS 1650		<i>Hot-dipped galvanized coatings on ferrous articles</i>
AS 1734		<i>Aluminium and aluminium alloys - Flat sheet, coiled</i>
AS 1742.1-13		<i>Manual of uniform traffic control devices</i>
AS 1743		<i>Road signs - Specifications</i>
AS 1744		<i>Forms of letters and numerals for road signs (known as Standard alphabets for road signs)</i>
AS 1866		<i>Aluminium and aluminium alloys - Extruded rod, bar, solid and hollow shapes</i>
AS 1906.1		<i>Retroreflective materials and devices for road traffic control purposes - Retroreflective materials</i>
AS 1906.2		<i>Part 2. Rector-reflective Devices (Non Pavement Application)</i>
AS 1906.4		<i>Retroreflective materials and devices for road traffic control purposes - High-visibility materials for safety</i>
AS 2700		<i>Colour standards for general purposes</i>
AS 3600		<i>Concrete structures;</i>
AS 3678		<i>Structural steel - Hot-rolled plates, floorplates and slabs</i>
AS 3679		<i>Hot-rolled bars and sections</i>
AS 4100		<i>Steel structures</i>
AS 4506		<i>Metal finishing - Thermoset powder coatings</i>
AS/NZS ISO 9002		<i>Quality systems - Model for quality assurance in production, installation and servicing</i>
RMS Specification R143	QA	<i>QA Specification R143 Signposting;</i>
RMS Specification 3400	QA	<i>Manufacture/delivery of signs;</i>
SAA HB 81.1		<i>Field guide for traffic control at works on roads - Short- term urban works, daytime only</i>

*Sutherland Shire Signage style guide
Council*

*Sutherland Shire SSC sign installation guide
Council (Building
Works Unit)*

11.3 Materials for Signposting

11.3.1 Road sign blanks

The dimensions, legend and background for each sign shall be in accordance with this Specification, AS 1742, AS 1743 and AS 1744, the RMS *Signs and Markings Manual* and standard *approved design drawings*.

Sign blanks, except for street nameplates, shall be either:

- 1.6mm thick aluminium sheet alloy. The aluminium alloy shall be Type 5251 or 5052, temper H38 or H36 in accordance with AS 1743. They shall be free of cracks, tears and other surface blemishes; or
- other sustainable option approved by Council.

Sign blanks for permanent or temporary traffic signs shall be of dimension and material specified in accordance with RMS guidelines or AS 1743.

Street nameplates shall be 6mm thick UV treated PVC and produced in accordance with Council's Style Guide. All Street nameplates shall be supplied by Council's Signshop.

11.3.2 Retro reflective material

The retro reflective materials used in the background or legend of the signs shall conform in colour and grade to Appendix C of AS 1743 for Class 1 and Class 2 materials and comply with AS 1906, Part 1.

11.3.3 Non-reflective material

Non-reflective material specified for figures, letters, symbols and borders shall be of uniform density and compatible with the background material, both in application and durability.

All R5 series parking signs should be fully screen ink printed.

Screening ink shall be a high quality, full gloss, non-fade, non bleed and scratch resistant type compatible with the material to which it is applied. Screening inks shall have durability at least equal to the material to which they are applied.

Unless otherwise authorised by Council, non-reflective sheeting (e.g. vinyl printing) must not be used as an alternative to screen printing.

If the use of non-reflective adhesive sheeting is proposed, the *contractor* shall submit full details of the adhesive material methods to be used to *Council's representative* for approval.

11.4 Manufacture of signs

11.4.1 Sign blanks

Preparation

Sign Blanks shall be one piece except where the sign is of such a size as to require more than one full sheet of aluminium or plastic, in which case a multi piece sign will be allowed.

The face of each sign blank shall be chemically cleaned and etched or mechanically abraded. The back of each sign blank shall be rendered dull and non-reflective either by mechanical or chemical means and shall be free of scratches and blemishes.

Anti graffiti

All sign faces are to be laminated with an anti graffiti film. Council's Signshop can provide this service on request at the cost of the contractor.

Dimensions and Tolerances

Sign Blanks shall be free of cracks, tears and other surface blemishes and the edges shall be true and smooth. The dimensions of the sign blanks shall be within +/- 1.5mm of those specified and the finished sign shall be flat within a maximum allowable bow of 0.005(D) in any direction where (D) is the maximum dimension of the sign blank in any direction.

11.4.2 Provision for mounting signs

Non-reinforced signs

Non reinforced signs shall be manufactured with square holes for mounting purposes.

The holes shall be cleanly punched 11mm square to accept 10mm diameter cuphead square neck bolts. Except where specified otherwise, two holes at 520mm centres shall be placed on the nominal vertical centre line, so that the bolt heads do not obscure the legend.

Reinforced Signs

For normal use, all large signs over 750mm width (size C and larger) and narrow signs with a width to height ratio of 2.5 or greater, shall have aluminium reinforcement extrusions fixed to the rear of the sign in accordance with RMS QA *Specification 3400*.

The sign shall be fixed to the sign structure in accordance with RMS QA *Specification 3400*.

11.4.3 Forms of letters and numerals

The requirements for letter styles, shapes and letter heights are specified in AS 1744 - *Forms of Letters and Numerals for Road Signs*. Word and letter spacings are to be as specified on individual drawings. Stroke width of letter and numerals are to comply with AS 1744 and all individual letters are to have neat clearly defined edges with smooth curves on round letters.

11.4.4 Retro reflective

Sheet Material

Retro reflective sheeting shall be applied in accordance with the manufacturer's instructions with pressure sensitive adhesive or track-free heat-activated adhesive and by a method such that it is securely fixed to the sign and the surface is free of any bubbles and blemishes.

Screening Ink

Transparent screening ink shall be applied over the retro reflective sheeting by the silk screening process, using the materials and techniques recommended by the

sheeting and ink manufacturers. The ink shall be compatible with the background material, both in application and durability.

11.4.5 Non-reflective

Screening ink

The legend shall be applied by the screen printing process, using the materials and techniques recommended by the ink manufacturer. The legend shall be compatible with the background material, both in application and durability.

11.4.6 Overlays or stick-ons

Alterations to signs must not be carried out using overlays and/or stick-ons, nor will signs be produced using second hand material (e.g. new overlay over old signs), unless otherwise directed and approved by *Council's representative*.

11.4.7 Street name signs

Street nameplates shall be 6mm thick UV treated PVC and produced in accordance with Council's Style Guide. All Street nameplates shall be supplied by Council's Signshop.

11.4.8 Transport and storage of signs

Signs shall be packaged/wrapped to prevent damage during storage, transit and handling. Interleaves of suitable material shall be provided between adjoining surfaces.

11.5 Manufacture of Sign Posts

11.5.1 Manufacture

Sign support structures shall be standard round galvanised posts of 50, 65 or 80 mm nominal bore or purpose designed steel structures as shown on the relevant drawings and manufactured in accordance with the requirements of *AS 1250*.

Splices in members shall be restricted to a maximum of one splice per member. Splices shall be full penetration butt welds.

All welding shall be in accordance with the requirements of *AS 1554.1*.

11.5.2 Protective treatment

All steel components, including brackets, shall be protected by hot dip galvanising after all fabrication processes are completed.

Prior to galvanising, the surface shall be treated in accordance with AS 1627.1 and AS 1627.4 (Class 2.5 Blast).

The steel components shall be finished by the hot dip galvanising process in accordance with AS1650 to provide a minimum thickness of 100 microns and a bright finished surface free from white rust and stains.

Splices in standard galvanised posts shall be painted by using a zinc rich paint in accordance with Appendix G of AS 1650 to provide a zinc rich coating at least equal to the thickness specified for the galvanised layer.

Bolts, nuts, washers and brackets shall be galvanised in accordance with AS 1214.

11.5.3 Caps on top of sign support structures

All new installations of posts are to be fitted with a galvanized post cap.

11.6 Installation of signs

All signs shall be precisely located and carefully fixed by specialist tradesperson skilled in this work. Particular care shall be taken to fix all signs at the correct height and position.

The works shall be carried out with care and practices necessary to prevent any damage to any building or property. In the event that any damage is caused as a result of the failure by the *contractor* to take necessary precautions, the *contractor* shall repair the damage at their expense.

All components shall be accurately positioned and supported during installation.

11.6.1 Setting out

The contractor shall set out the work to ensure that all signs and support structures are placed in accordance with the relevant drawings and/or schedule of notices as directed by Council Authorised Officer.

Signs shall be installed with a minimum 300mm from face of kerb to edge of sign and a pedestrian height clearance of 2m from the base of the sign face to the pavement surface in accordance with AS 1742. 2 Appendix D.

Signs shall be aligned at appropriate angles to the direction of the traffic they are intended to serve in accordance to AS 1742.2 Appendix D. On curved alignments the angle of placement should be determined by the course of approaching traffic under the orientation of the road at the point where the sign is located.

11.6.2 Reporting of obstructions

Any trees and undergrowth within three metres of the sign support structure and along a motorist's line of sight to the front of the sign shall be noted and advice made to *Council's representative*.

11.6.3 Sign structure foundations

The foundations for sign support structures shall be as shown on the relevant drawings.

The foundation footings shall be neatly excavated to the depth and width shown on the relevant drawings.

When anchor bolt assemblies are specified they shall be accurately placed and firmly supported. Anchor bolt assemblies shall be provided with levelling nuts under the sign structure base plates to allow adjustment of the structure after installation.

Concrete placed in the foundations shall be normal class concrete with strength 20MPa in accordance with AS 3600 and with 20 mm maximum nominal size of aggregate.

11.7 Installation onto galvanised posts

The top of each post shall extend sufficiently beyond the upper extrusion section or bolt holes on the sign panels to enable attachment of the signs.

In multi-post installations, the top of each post shall be at the same level.

During installation the sign panels shall be suitably supported and braced with the sign face protected from damage. Signs damaged during installation shall be

repaired to a standard equivalent to the original sign or replaced by the *contractor*.

Galvanised coatings which are scratched or slightly damaged during installation shall be renovated by using a zinc rich paint in accordance with Appendix F of AS 1650 to provide a zinc rich coating of a minimum of 100 microns thick. This method of renovation shall be restricted to areas not exceeding 2500 mm². Any structure with total damaged coating areas exceeding 2500 mm² shall be re-galvanised by the *contractor*.

11.8 Core drilling for signposting

The *contractor* may use a core drill to excavate for a pole footing if they are fully aware of the extent of underground infrastructure. The *contractor* is responsible for any service utility damage caused during excavation.

11.8.1 Lock sockets

Unless otherwise specified, galvanised V Lock wedge sockets installed flush with the finished surface level are to be used at the base of all sign posts.

After poles and/or lock sockets are removed, the footpath surfaces are to be repaired to match existing footpath level.

11.9 Installation onto electricity or light poles

Installation of signs on steel electrical light poles is to be undertaken using the bandit fastening system and appropriate brackets. No drilling of steel poles is permitted.

11.9.1 Trees

No signs are to be mounted to trees under any circumstances. Attaching a sign to a tree will be considered as vandalism and the *contractor* will be held liable for any damage to the tree.

11.9.2 Speed regulatory signs

All signs with speed limits shall be supplied and installed by the RMS.

11.9.3 Street name signs

The height, location and orientation of street name signs shall be installed in accordance with AS 1742.5 and Council's Style Guide. Generally, street name signs shall be installed on galvanised poles as detailed above in this Specification.

Street name signs installed on buildings and other structures are to be approved by *Council's representative*.

All Street nameplates shall be supplied by Council's Signshop.

11.9.4 Labelling signs

All signs shall be clearly and permanently marked with the date and time of installation.

11.9.5 Cleaning of signs

The *contractor* is required to remove all grime, grease and dust build-up on signs, in order to make all sign markings clearly visible. Where build-up material is removed and sign marking is found to be damaged or faded, the *contractor* is to report the location of damaged sign to *Council's representative*.

The removal of build-up material is to be carried out with cleaning agents and tools approved by *Council's representative*.

11.10 Quality

All new signs and poles shall be installed free from scratches, dents and any other defects. Any signs or posts found by *Council's representative* to have defects, are to be replaced by the *contractor*.

11.10.1 Sample signs

If requested by *Council's representative*, a sample of the acceptable standard that will be used for the work, will be provided by the *contractor* prior to work commencing. Approved sign samples will be stored at Council's depot and will be regarded as the acceptable standard against which other signs will be compared. These signs will be available for the *contractor* to see upon request.

11.10.2 Tolerances

Activity	Tolerances
Setout	All signs shall be installed within 100mm of the location shown on the construction drawings.

11.10.3 Inspections

Give at least two (2) working days notice for all inspections.

11.10.4 Schedule of hold points—New signage

Where the contractor is not one of Council’s Preferred Suppliers and/or is undertaking works on behalf of a third party other than Council a schedule of hold points will apply as specified below.

New Signage	
1. Work process:	Installing signs onto any structure other than poles
<i>Hold point or check point:</i>	<i>Check point</i>
Notice:	At least two (2) working days prior to installing new signs.
Action:	<i>Council’s representative</i> will inspect the new signs, prior to authorising the release of the Hold Point.
2. Work process:	Acceptance of completed works/payment
<i>Hold point or check point:</i>	<i>Hold point</i>
Notice	At least two (2) working days prior to inspection with written certification from the contractor that all signs have been installed in accordance with the relevant Design Plans and Council’s <i>specification</i> .
Action:	<i>Council’s representative</i> will inspect the completed works, prior to authorising the release of the <i>Hold point</i> .