

TRANSPORT FOR NSW (TfNSW)

QA SPECIFICATION R131

INSTALLATION OF GUIDE POSTS

NOTICE

This document is a Transport for NSW QA Specification. It has been developed for use with roadworks and bridgeworks contracts let by Transport for NSW or by local councils in NSW. It is not suitable for any other purpose and must not be used for any other purpose or in any other context.

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REVISION REGISTER

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 1/Rev 1		First issued	GM, CMS	Jan 91
Ed 1/Rev 2		Clause numbers and lists have been restructured to suit the new format.	GM, CEC J Woodward	24.03.95
Ed 2/Rev 0		Specification Number changed from R68 to R131. Converted to MS Word 6.0c. References to RTA Specifications changed.	GM, RNIC; J Woodward	13.02.97
Ed 3/Rev 0		Revised to accommodate new supply specifications for timber and non-timber guide posts Revision of Clause 3.3 Installation	GM, RNIC	27.09.99
Ed 4/Rev 0	“Notice” Global Annex M	RTA PO Box and Fax numbers updated Specification reformatted. Text revised to direct imperative style. “Contractor” replaced by “you”. “Superintendent” replaced by “Principal”. “QUALITY PLAN” replaced by “PROJECT QUALITY PLAN”. Some clauses moved to Annexures. Some clauses re-written to improve clarity. References updated.	GM, IC	27.03.09
Ed 4/Rev 1	3.3.2 Annex M	Requirement for supply of proprietary guide and/or post driver for guide post installation removed. References updated.	GM, IC	06.04.09
Ed 4/Rev 2	Global	References to “Roads and Maritime Services” or “RMS” changed to “Transport for NSW” or “TfNSW” respectively.	DCS	22.06.20
Ed 5/Rev 0	Global	Spec title changed. References to spec 3142 removed, as spec 3412 is now combined with spec 3411.	EDCS	11.03.21

Ed/Rev Number	Clause Number	Description of Revision	Authorised By	Date
Ed 5/Rev 0 (cont'd)		References to “semi-flexible guide posts” removed, to accord with spec 3411.		
	1.1	Scope of spec clarified. Statement added that supply of guide posts covered by spec 3411.		
	2	Clause title changed to “Materials”. Headings added to form new clause 2.1.		
	2.2	New clause on backfill material, incorporating part of previous sub-clause 3.3.2.		
	3.1	Previous clause on scope of guide post installation deleted. Statement on type of guide posts to be erected moved here from previous clause 1.1, and combined with part of previous clause 3.2.		
	3.2	Heading title changed.		
	3.3	Heading title changed.		
	3.3.2	Previously clause 3.4, reworded.		
	3.4	Previously part of sub-clause 3.3.1.		
	3.5	New clause on method of installation.		
	3.5.1	Previous sub-clause 3.3.2 now split into this sub-clause and sub-clause 3.5.2.		
	3.5.2	Surplus excavated material to be disposed of by spreading it out within road reserve.		
	3.5.3	Previously sub-clause 3.3.3.		
	3.6	Previously sub-clause 3.3.4.		
	4	Headings added to form new clauses 4.1 to 4.3. Removal and disposal requirements clarified and simplified.		
	Annex B	Pay item scope clarified.		
Annex D	Planning documents updated.			
Annex M	Referenced documents updated.			



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VERSION FOR: DATE:

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FOREWORD

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When this document forms part of a contract

This document should be read with all the documents forming the Contract.

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REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TfNSW R131 Edition 4 Revision 2.

All revisions to the previous version (other than minor editorial and project specific changes) are indicated by a vertical line in the margin as shown here, except when it is a new edition and the text has been extensively rewritten.

PROJECT SPECIFIC CHANGES

Any project specific changes are indicated in the following manner:

- (a) Text which is additional to the base document and which is included in the Specification is shown in bold italics e.g. ***Additional Text***.
- (b) Text which has been deleted from the base document and which is not included in the Specification is shown struck out e.g. ~~Deleted Text~~.

TfNSW QA SPECIFICATION R131

INSTALLATION OF GUIDE POSTS

1 GENERAL

1.1 SCOPE

This Specification sets out the requirements for the installation of new guide posts, and removal and disposal of existing guide posts.

Supply of guide posts is covered in Specification TfNSW 3411.

1.2 STRUCTURE OF THE SPECIFICATION

This Specification includes a series of annexures that detail additional requirements.

1.2.1 Project Specific Requirements

Project specific details of work are shown in Annexure R131/A.

1.2.2 Measurement and Payment

The method of measurement and payment is detailed in Annexure R131/B.

1.2.3 (Not Used)

1.2.4 Planning Documents

The PROJECT QUALITY PLAN must include each of the documents and requirements listed in Annexure R131/D and must be implemented.

In all cases where this Specification refers to the manufacturer's recommendations, these must be included in the PROJECT QUALITY PLAN.

1.2.5 Referenced Documents

Unless otherwise specified, the applicable issue of a referenced document, other than a TfNSW Specification, is the issue current at the date one week before the closing date for tenders, or where no issue is current at that date, the most recent issue.

Standards, specifications and test methods are referred to in abbreviated form (e.g. AS 1234). For convenience, the full titles are given in Annexure R131/M.

1.3 DEFINITIONS

The terms “you” and “your” mean “the Contractor” and “the Contractor’s” respectively.

The following definitions apply to this Specification.

Guide post	Posts used to mark the edge of the road carriageway. They assist the road user by indicating the alignment of the road ahead, especially at horizontal and vertical curves, and under some circumstances, by providing a gauge with which to assess available sight distance.
Flexible guide post	A guide post that deflects when impacted by a vehicle and then returns to the vertical position, without maintenance intervention.
Rigid guide post	A guide post which either fractures, or remains intact and straight but not vertical, when impacted by a vehicle.
Delineator	Small retroreflectors or panels of retroreflective sheeting that are attached to guide posts to provide a coherent pattern of delineation of the edges of the carriageway as an aid to night driving.

2 MATERIALS

2.1 GUIDE POSTS

Guide posts must conform to TfNSW 3411.

2.2 BACKFILL

You may use material excavated previously for installation of the guide posts as backfill.

Where you consider that the excavated material is unsuitable as backfill, use imported backfill material with similar characteristics to that of the shoulder material.

3 INSTALLATION

3.1 GENERAL

Install guide posts of the type specified either on the Drawings or in Specification 3411, at the locations shown on the Drawings or as directed by the Principal, and complying with the requirements of AS 1742.2.

3.2 POSITION RELATIVE TO PAVEMENT

Unless shown otherwise on the Drawings or specified otherwise, install the guide posts at a uniform distance away from the pavement edge.

Where the carriageway shoulder is adjacent to an embankment or at the surrounding natural surface level, install the guide posts such that their inside edge is in line with the outside edge of the shoulder.

Where the carriageway shoulder is located within a cutting, install the guide posts on the pavement side of the table drain such that the flow of water in the drain is not impeded.

3.3 ORIENTATION

3.3.1 General

Erect each guide post with the 100 mm wide face at right angles to the centre line of the roadway.

Install those timber guide posts which are supplied with a bevelled top such that the higher 100 mm wide face is displayed to oncoming traffic in the near lane.

3.3.2 Delineators

Install the guide posts such that the retroreflective delineators displayed to the oncoming traffic is as follows:

- (a) for all guide posts located on the driver's left hand side, a red delineator is displayed;
- (b) for all guide posts located on the driver's right hand side for undivided (two way) carriageways, a white delineator is displayed;
- (c) for all guide posts located on the driver's right hand side on medians separating traffic travelling in opposite directions for divided (one way) carriageways, a yellow delineator is displayed.

As a corollary to items (a) and (b) above, guide posts that are installed on undivided (two way) carriageways will be fitted with two delineators: one red delineator on the face displayed to drivers in the lane nearest to the guide post, and one white delineator on the opposite face.

3.4 EMBEDMENT DEPTH

Install the guide posts in the (non-concrete) shoulder to a minimum embedment depth of 500 mm for rigid and timber guide posts, and a minimum embedment depth of 350 mm for flexible guide posts.

Where the surface of the shoulder is irregular, vary the embedment depths such that the top of the guide posts is along a smooth profile and following the grade of the road.

3.5 METHOD OF INSTALLATION

3.5.1 In Natural Ground – By Driving

Do not install timber guide posts by driving them into the ground. You may install non-timber guide posts by driving, but only where this method of installation is recommended by the guide post supplier.

With the Principal's approval, you may prebore pilot holes to assist in the guide post installation where hard driving conditions are encountered.

Where the guide post supplier has recommended the use of a guide and/or post driver for the proper and accurate driving of the guide posts, you must only install the guide posts using the guide and/or post driver.

3.5.2 In Natural Ground – By Excavation and Backfilling

For timber guide posts, or non-timber guide posts where installation by driving is not recommended, install them by inserting them in previously excavated holes in the ground which are subsequently backfilled and compacted around the guide posts.

Compact the backfill material in layers of maximum depth of 150 mm for the full depth of the guide post hole up to ground level to the same relative compaction as that of the adjacent shoulder material.

Dispose of any surplus excavated material by spreading it out neatly within the road reserve and compacting it lightly, unless directed otherwise by the Principal.

3.5.3 In Concrete Pavements

Where guide posts are to be installed in concrete pavements, include in the PROJECT QUALITY PLAN details of the proposed installation method, including details of fixing the guide posts to the concrete.

Typically, the guide post will be attached to a fixed or removable base plate which is attached to the pavement using hot-dip galvanized steel anchor bolts.

3.6 INSTALLATION TOLERANCES

Install each guide post within the installation tolerances shown in Table R131.2.

Table R131.2 - Installation Tolerances

Attribute	Tolerance
Plan Location	Within 200 mm longitudinally of the design spacing and 100 mm transversely of the plan position with reference to the control line for the road
Height	Within 25 mm of the uniform profile height (nominally 1,000 mm)
Verticality	Within 3° from the true vertical position

4 REMOVAL AND DISPOSAL OF EXISTING GUIDE POSTS

4.1 GENERAL

Remove any existing guide posts which are shown on the Drawings or directed by the Principal to be removed. The entire guide post, including any part or component that is in-ground, must be removed.

4.2 BACKFILLING

Backfill all holes arising from the removal of existing guide posts, and compact the backfill to the same relative compaction as that of the surrounding shoulder material, in layers of 150 mm.

4.3 DISPOSAL

Dispose of all guide posts that have been removed by you, off site in accordance with TfNSW G36, unless directed otherwise by the Principal.

If practical, recycle any unwanted guide posts.

ANNEXURE R131/A – PROJECT SPECIFIC REQUIREMENTS

NOTES TO TENDER DOCUMENTER: (Delete this boxed text after completing Annexure R131/A)

Insert any project specific requirements here. If there are none, delete this boxed text and change the heading title to “Not Used”.

ANNEXURE R131/B – MEASUREMENT AND PAYMENT

Refer to Clause 1.2.2.

Payment will be made for all costs associated with completing the work detailed in this Specification in accordance with the following Pay Items.

Where no specific pay items are provided for a particular item of work, the costs associated with that item of work are deemed to be included in the rates and prices generally for the Work Under the Contract.

Unless specified otherwise, a lump sum price for any of these items will not be accepted.

Pay Item R131P1 Supply and Installation of Guide Posts

The unit of measurement is “each” guide post installed. The rate must include all costs associated with the following:

- (a) supply of the guide post;
- (b) setting out of the location for installation of the guide post;
- (c) installation of the guide post, either by:
 - (i) driving of the guide post including where necessary excavation of a pilot hole; or
 - (ii) excavation of hole for the guide post, insertion of the guide post and backfilling around the guide post; or
 - (iii) surface mounting of the guide post on concrete pavements.

Provide separate rates for each type of guide post and method of construction.

Pay Item R131P2 Removal of Existing Guide Posts

The unit of measurement is “each” guide post removed.

The rate must include all costs associated with the removal of the guide post, backfilling of the resulting hole, and disposal off site of the removed guide posts.

ANNEXURE R131/C – (NOT USED)

ANNEXURE R131/D – PLANNING DOCUMENTS

Refer to Clause 1.2.4.

The following document must be included in the PROJECT QUALITY PLAN. The requirements of this Specification and others included in the Contract must be reviewed to determine additional documentation requirements.

Clause	Description
3.5.3	Installation method for guide posts in concrete pavement

ANNEXURES R131/E TO R131/L – (NOT USED)

ANNEXURE R131/M – REFERENCED DOCUMENTS

Refer to Clause 1.2.5.

TfNSW Specifications

TfNSW G36	Environmental Protection
TfNSW 3411	Supply of Guide Posts

Australian Standards

AS 1742.2	Manual of uniform traffic control devices – Traffic control devices for general use
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