

TRANSPORT FOR NSW (TfNSW)

QA SPECIFICATION R49

CONSTRUCTION OF VERGES

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 2 | R21.1.2 | Test Methods amended | GM,CMS | 30.01.92 |
| Ed 2/Rev 0 | | Clause numbers and lists restructured to suit the new format. Test Method T122 has been withdrawn. | GM,PSP; J Woodward | 02.03.95 |
| Ed 2/Rev 1 | 1.2, 4.2 4 Annexure R49/1 | Specification Number changed from R21 to R49. Converted to MS Word 6.0c. References to RTA Specifications changed. Specification RTA Q included Heading changed Formulae clarified New annexure showing details previously in Clause 2.1 | GM, RNIC; J Woodward | 08.01.97 |
| Ed 3/Rev 0 | Various Foreword 1.2 5 3, 4, R49/1 Annex A | Text revised to direct imperative style "Superintendent" replaced by "Principal" "Shall" replaced by "must" References updated Reformatting and minor editing New clause after the Table of Contents New clause, references transferred to Annexure R49/M Transferred to Annexure R49/B Renumbered 4, 5, R49/A respectively Moisture range to be specified. | GM, RNIC | 14.10.05 |
| Ed 3/Rev 1 | Guide Notes 1.1 | Notes added that R49 must not be used in conjunction with R44. "removal of dyke" deleted from "Scope"; clarification added that verge material is supplied by Principal. | GM, IC (M Andrew) | 07.02.12 |

| Ed/Rev Number | Clause Number | Description of Revision | Authorised By | Date |
|------------------------|-----------------------------------|--|----------------------|-------------|
| Ed 3/Rev 1 (cont'd) | 5.4 Annex A Annex B | Clause deleted; formulae for calculating relative compaction replaced by Test Method reference. Table reformatted. Words “supply” and “removal of earth dyke” deleted from Pay Item description. | | |
| Ed 3/Rev 2 | Global | References to “Roads and Maritime Services” or “RMS” changed to “Transport for NSW” or “TfNSW” respectively. | DCS | 22.06.20 |

GUIDE NOTES

(Not Part of Contract Document)

Using Specification R49

TfNSW R49 is a QA specification and the use of QA specifications requires the implementation of a quality management system by the Contractor that meets the quality management system requirements specified in TfNSW Q. To comply with the intention of government policy as well as TfNSW R49, construction of verges using TfNSW R49 require adequate surveillance and audit by the Principal.

TfNSW R49 is intended for use in minor works involving construction of verges. It must not be used in conjunction with specification TfNSW R44.



CONSTRUCTION OF VERGES

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| VERSION FOR: DATE: |
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CONTENTS

| CLAUSE | PAGE |
|--|------|
| FOREWORD | I |
| TfNSW Copyright and Use of this Document | i |
| Revisions to Previous Version | ii |
| Project Specific Changes | ii |
| | |
| 1 GENERAL | 1 |
| 1.1 Scope | 1 |
| 1.2 Structure of the Specification | 1 |
| | |
| 2 VERGE MATERIAL | 1 |
| 2.1 Source | 1 |
| 2.2 Haulage | 2 |
| | |
| 3 (NOT USED) | 2 |
| | |
| 4 CONSTRUCTION OF VERGES | 2 |
| 4.1 Spreading | 2 |
| 4.2 Layer Thickness | 2 |
| | |
| 5 COMPACTION AND TRIMMING | 2 |
| 5.1 General | 2 |
| 5.2 Relative Compaction Control Criteria | 3 |
| 5.3 Sampling and Testing | 3 |
| | |
| ANNEXURE R49/A – PROJECT SPECIFIC REQUIREMENTS | 4 |
| | |
| ANNEXURE R49/B – MEASUREMENT AND PAYMENT | 4 |
| | |
| ANNEXURES R49/C TO R49/L – (NOT USED) | 4 |
| | |
| ANNEXURE R49/M – REFERENCED DOCUMENTS | 5 |
| | |
| LAST PAGE OF THIS DOCUMENT IS | 5 |

FOREWORD

TfNSW COPYRIGHT AND USE OF THIS DOCUMENT

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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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Internet website: <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/specifications/index.html>

REVISIONS TO PREVIOUS VERSION

This document has been revised from Specification TfNSW R49 Edition 3 Revision 1.

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 R49

CONSTRUCTION OF VERGES

1 GENERAL

1.1 SCOPE

This Specification sets out the requirements for the loading, haulage, spreading, compacting and trimming of verge material adjacent to the pavement supplied by the Principal.

Undertake all inspection and testing necessary to demonstrate that the requirements of this Specification have been achieved.

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 requirements are shown in Annexure R49/A.

1.2.2 Measurement and Payment

The method of measurement and payment is detailed in Annexure R49/B.

1.2.3 Referenced Documents and Definitions

Unless specified otherwise or is specifically supplied by the Principal, the applicable issue of a referenced document, 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 R49/M.

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

2 VERGE MATERIAL

2.1 SOURCE

The material for placing in the verge will be made available to you in a stockpile. The location of the stockpile is given in Annexure R49/A.

2.2 HAULAGE

Transport verge material from the stockpile to the work in vehicles which are so constructed and operated that loss of material does not occur. The material must be suitably moistened to prevent segregation during transit.

3 (NOT USED)

4 CONSTRUCTION OF VERGES

4.1 SPREADING

Spread and compact the verge material in uniform layers such that no segregation will occur.

Do not spread verge material on material which is excessively wet. If at any time the underlying material should become rutted, or mixed with the material being placed, remove the contaminated material, re-shape and re-compact the underlying material, and replace the verge material with suitable fresh material, at no cost to the Principal.

4.2 LAYER THICKNESS

Each layer must have a thickness, when compacted, of between 100 mm and 200 mm inclusive.

5 COMPACTION AND TRIMMING

5.1 GENERAL

Trim each layer of verge material as construction proceeds, and compact uniformly to the required density and thickness.

You may compact adjacent to a concrete pavement after 10 days has elapsed since the placement of the concrete, or after joint sealing has been completed, whichever is the later.

At the time of compaction of each layer, adjust the moisture content of the material to within the range specified in Annexure R49/A as determined by Test Method TfNSW T111 and TfNSW T162.

Do not compact material containing excessive moisture until it has been dried out to the specified moisture content.

If there is insufficient moisture in the material for it to be compacted as specified, water must be added.

No additional payment will be made for wetting or drying the material to be compacted.

Achieve the specified relative compaction for the full depth of the layer for the full width of the verge over each section of the work. Complete compaction promptly to minimise the possibility of rain damage.

Do not place subsequent layers until the underlying layer has achieved the required relative compaction.

Construct the slope of the verge material to conform to that shown on the Drawings without undulations.

Clear the verge of any loose material laying on the surface following the backfilling of the edge and outlet drains.

5.2 RELATIVE COMPACTION CONTROL CRITERIA

Control compaction control on Lots using statistical techniques in accordance with Specification TfNSW Q. Conformity of a Lot is achieved if the characteristic relative compaction of that Lot is not less than a value of 98.0 %.

A Lot must contain only areas of work which are essentially homogeneous, i.e. when material origin, general appearance, moisture content during compaction, compaction technique, response to compactors, and state of underlying materials are substantially alike.

Exclude from the Lot and test independently any areas which fail to meet these conditions.

5.3 SAMPLING AND TESTING

Provide a smooth surface at each sampling location for the purpose of obtaining samples.

Obtain a field density test, field moisture test and a sample for a laboratory maximum dry density test at each sample location.

Carry out the field (in-situ) density test in accordance with either Test Method TfNSW T119 or TfNSW T173.

Conduct all tests within a particular Lot using only one of the above test methods. Results obtained from more than one test method must not be combined for a statistical assessment of a particular Lot.

Where TfNSW T173 is used for the in-situ density determination, extend the probe to a depth as close as practicable to the layer thickness. Once the test is completed, take a sample from below the test site, within the circle of area between the probe and the detector. The size of this sample must be sufficient for the laboratory determination of maximum density.

Irrespective of the test method used to determine the in-situ density, determine the proportion and density of oversize (material retained on the 37.5 mm AS sieve) in the sample for the laboratory maximum dry density test, in accordance with the procedure described in TfNSW T119.

Determine field moisture content in accordance with TfNSW T120, TfNSW T121, or TfNSW T180. Use TfNSW T121 and TfNSW T180 only where results have previously been calibrated against those of TfNSW T120 for the range of materials being compacted.

Determine the maximum density using Test Method TfNSW T111 or TfNSW T162.

Calculate the relative compaction in accordance with Test Method TfNSW T166.

ANNEXURE R49/A – PROJECT SPECIFIC REQUIREMENTS

| Source of verge material | Moisture Content * |
|---|---------------------------|
| Verge material will be available to the Contractor in stockpile/s located at the following chainage/s: (a) (b) (c) | 60 – 90 |

* Expressed as % of the optimum moisture content in accordance with Test Method TfNSW T111

ANNEXURE R49/B – MEASUREMENT AND PAYMENT

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

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.

A lump sum price for this item will not be accepted.

Pay Item R49P1 - Haul and Place Verge Material from Stockpiles

The unit of measurement is the cubic metre of compacted verge in place. The width and depth must be as specified on the Drawings.

ANNEXURES R49/C TO R49/L – (NOT USED)

ANNEXURE R49/M – REFERENCED DOCUMENTS

TfNSW Specifications

TfNSW Q Quality Management System

TfNSW Test Methods

TfNSW T111 Dry Density/Moisture Relations of Road Materials (Standard Compaction)

TfNSW T119 Determination of Density of Road Materials In-Situ Using the Sand Replacement Method

TfNSW T120 Determination of Moisture Content of Road Materials (Standard Method)

TfNSW T121 Determination of Moisture Content of Road Materials (Sand Bath or Hot Plate Method)

TfNSW T162 Compaction Control Test (Rapid Method)

TfNSW T166 Determination of Relative Compaction

TfNSW T173 Determination of Field Dry Density and Moisture Content of Pavement Materials using a Nuclear Gauge in Direct Transmission Mode

TfNSW T180 Determination of Moisture Content of Road Materials (Microwave Oven Method)