

SPECIFICATION SERVICES

SPECIFICATIONS

TYPES OF SPECIFICATIONS

TOOLS AND REFERENCE MATERIAL

WELCOME TO SPECIFICATION SERVICES

SPECIFICATION WRITING

AMBIGUITY

RULES AND WRITING TIPS

USING DIPL WORKSECTION TEMPLATES



SPECIFICATION SERVICES

AIM OF THIS SESSION

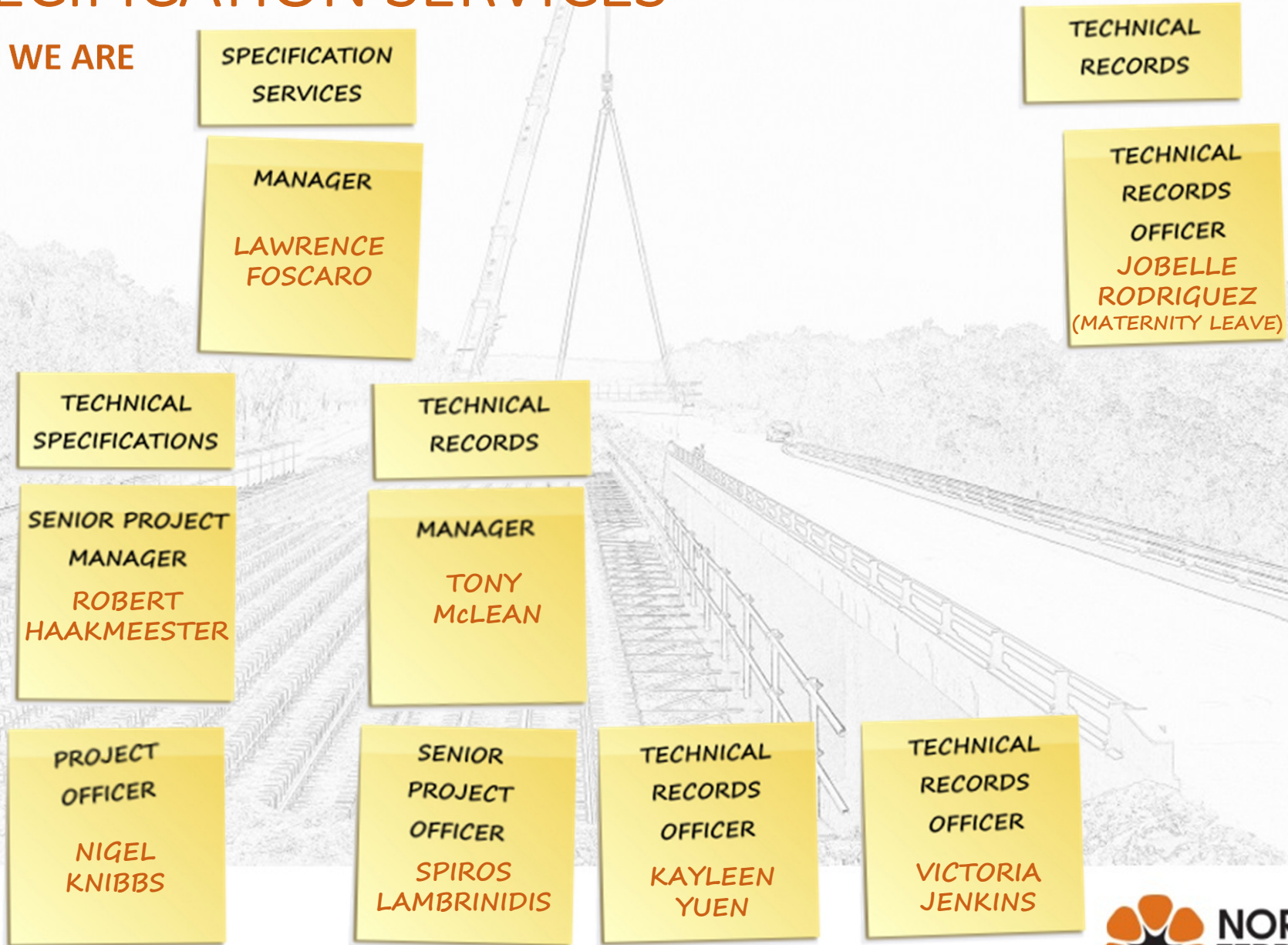
- An introduction of who we are.
- An overview of what services we provide.
- To help you with your specification writing skills.





SPECIFICATION SERVICES

WHO WE ARE





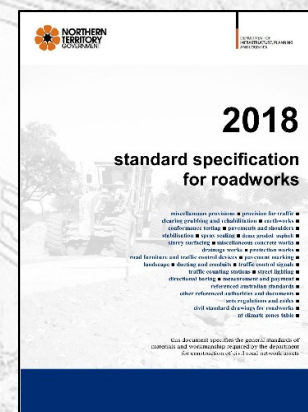
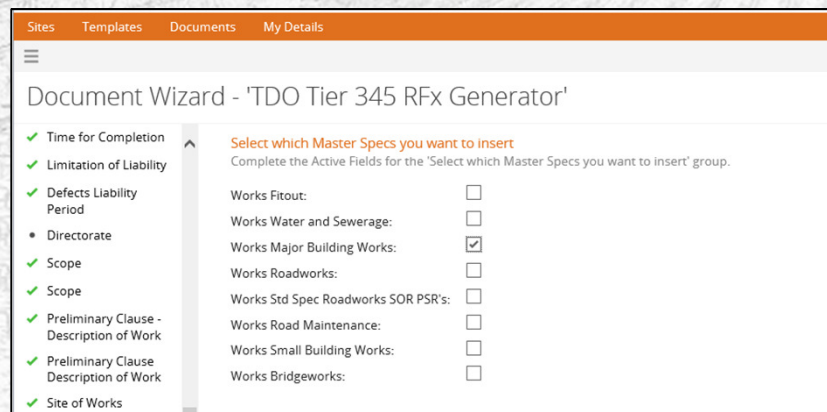
SPECIFICATION SERVICES

WHAT WE DO

Specification Services maintain a series of specifications used in the preparation of contract documents for the construction and maintenance of government infrastructure.

The specifications cover:

- Buildings.
- Roads and other civil works.
- Environmental management.
- Some technical content located in the Preliminary clauses.



SPECIFICATION SERVICES

RECENT UPDATES:

STANDARD SPECIFICATION CIVIL MAINTENANCE REFERENCE BOOK

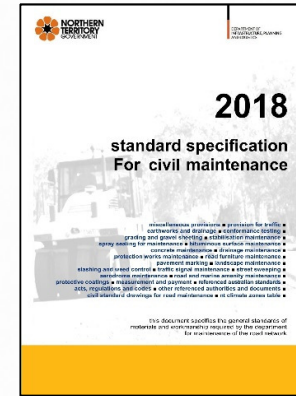
Formerly Standard Specification for Road Maintenance.

22 technical worksections

New worksections as of 2019

- Bus Stop Maintenance.
- Street Lighting Maintenance (Proposed).

A significant change has been made to the **Aerodrome Maintenance** worksection in reference to Aerodrome Reporting Officers (ARO's).



SPECIFICATION SERVICES

RECENT UPDATES:

MAJOR BUILDING WORKS SPECIFICATION

65 technical worksections

All Major Building Works worksections have undergone a major review. **Overview of Updates** are available from the Buildings webpage.

<https://dipl.nt.gov.au/infrastructure/technical-standards-guidelines-and-specifications/technical-specifications/buildings>

New worksections as of 2018-2019:

- Photovoltaic.
- Uninterrupted Power Supply.
- Generators.
- Liquid Fuels.
- Mechanical Systems.
- Mechanical Air Coils.
- Chillers Combined.
- Cooling Towers.
- Ductwork Insulation.
- Mechanical pipework Insulation.
- Water Treatment.
- Building Management System.
- Mechanical Commissioning.
- Mechanical Maintenance.
- Civil Works.

Document Wizard - 'TDO Tier 345 RFX Generator'

Commencement	Select which Master Specs you want to insert
✓ Time for Completion	Complete the Active Fields for the 'Select which Master Specs you want to insert' group.
✓ Limitation of Liability	Works Fitout: <input type="checkbox"/>
✓ Defects Liability Period	Works Water and Sewerage: <input type="checkbox"/>
• Directorate	Works Natspec: <input checked="" type="checkbox"/>
✓ Scope	Works Roadworks: <input type="checkbox"/>
✓ Scope	Works Std Spec Roadworks SOR PSR's: <input type="checkbox"/>
✓ Preliminary Clause - Description of Work	Works Road Maintenance: <input type="checkbox"/>
	Works Small Building Works: <input type="checkbox"/>
	Works Bridgeworks: <input type="checkbox"/>





SPECIFICATION SERVICES

RECENT UPDATES:

STANDARD SPECIFICATION SMALL BUILDING WORKS REFERENCE BOOK

23 technical worksections. Updates starting late 2019.

New worksections as of 2018

- Fabric Shade Structures.



STANDARD SPECIFICATION FOR ENVIRONMENTAL MANAGEMENT

The Standard Specification for Environmental Management has undergone a major review.

Version 2.0 is now available for download.

<https://transport.nt.gov.au/infrastructure/technical-standards-guidelines-and-specifications/technical-specifications/environmental-management>





SPECIFICATION SERVICES

LOOKING AHEAD

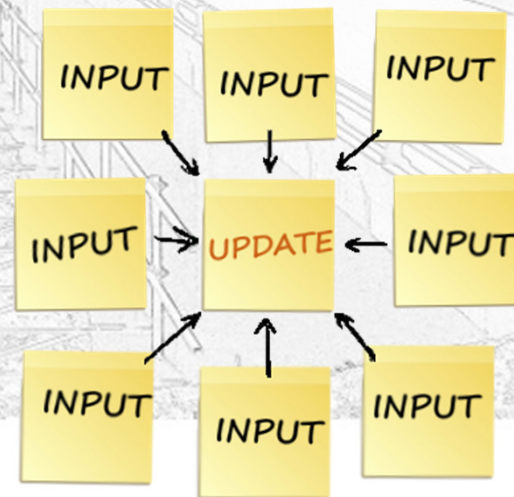
Specification Services are looking to host a series of specifications used in the preparation of contract documents for the construction of government infrastructure.

The hosted specifications cover:

- Housing.
- Subdivisions.
- Civil Works National Harmonization (Austroads).

Specifications are edited to contain the latest updates in policy and regional requirements. They ensure that assets constructed for the NTG reflect best industry practice.

Input from front line staff is essential for our documents to represent best practice for our Territory.





SPECIFICATION SERVICES

WHAT WE DO

Functions and services of the unit include:

- Review of Specifications (RFT's / RFQ's).
- Development and maintenance of specification templates and reference documents.
- Publishing of standard specifications reference text books.
- Development and maintenance of guides and supporting documents for staff, consultants, contractors, and tenderers.
- Training in specification writing.

Manage subscriptions:

- NATSPEC.
- Australian Paint Approval Scheme (APAS).
- Australian Standards.

TRAINING
TEXT BOOKS
MANAGE
SUBSCRIPTIONS
PUBLISH
REVIEW
TEMPLATES
DEVELOP
MAINTAIN



SPECIFICATION SERVICES

WHAT WE DO

Liaise with:

- Regions.
- Australian Building Codes Board (ABCB).
- Australian Institute of Architects (AIA).
- Australian Road Research Board (ARRB).
- Austroads.
- Civil Contractors Federation NT (CCFNT).
- NATSPEC.
- Standards Australia.
- Other Stakeholders.



Australian
Institute of
Architects

NATSPEC

the national building specification





SPECIFICATION SERVICES

WHAT WE DO NOT DO

Advice on Tender Documents Online (TDO).

Technical support for TDO.

For TDO training and assistance, TDO tools, and technical difficulties and errors, please contact **Procurement Operations and Delivery**.

Email: procurementadvice.dipl@nt.gov.au

Phone: 08 8924 7254





SPECIFICATIONS

WHY HAVE A SPECIFICATION

The primary function of the drawings and specification is to give effect to design decisions. There are many design decisions which cannot be expressed in drawn form. These must rely on being expressed in words.

The specification is created to complement, without duplication, the drawings. Together they convey all the design decisions.





SPECIFICATIONS

THE ROLES OF THE SPECIFICATION

The specification has many roles:

- A written record of design decisions taken.
- A document demonstrating compliance with statutory requirements.
- An estimating document.
- A tendering document.
- A legal (contractual) document.
- An on-site working document.
- A dispute settlement document.
- A project management tool.
- A facilities management tool.

DISPUTE SETTLEMENT

TENDERING

DOCUMENT

RECORD

STATUTORY

ON SITE

LEGAL

PROJECT MANAGEMENT

COMPLIANCE

DECISIONS

ESTIMATING



SPECIFICATIONS

SPECIFICATION USERS

It is important to ensure all users interpret the specification in the same way. A good specification is clear, concise and easily understood. Users include:

- Designers.
- Clients.
- Certifying authorities.
- Estimators.
- Tenderers.
- Contractors and subcontractors.
- Contract administrators.
- Legal representatives.
- Project managers.
- Construction managers.
- Facilities managers.





SPECIFICATIONS

USING SPECIFICATIONS TO DEFINE QUALITY

Quality must be defined. It cannot be managed if it is not defined. Quality can have different meanings for different people in different situations.

In construction this problem is amplified because the responsibility for a project is divided between many different people, within many organisations.

Therefore, agreement on a defined quality level between all parties, and how it is to be measured, is key to achieving the desired quality to the satisfaction of the Principal.

Communicating the requirements for quality is the main technical function of the specification.





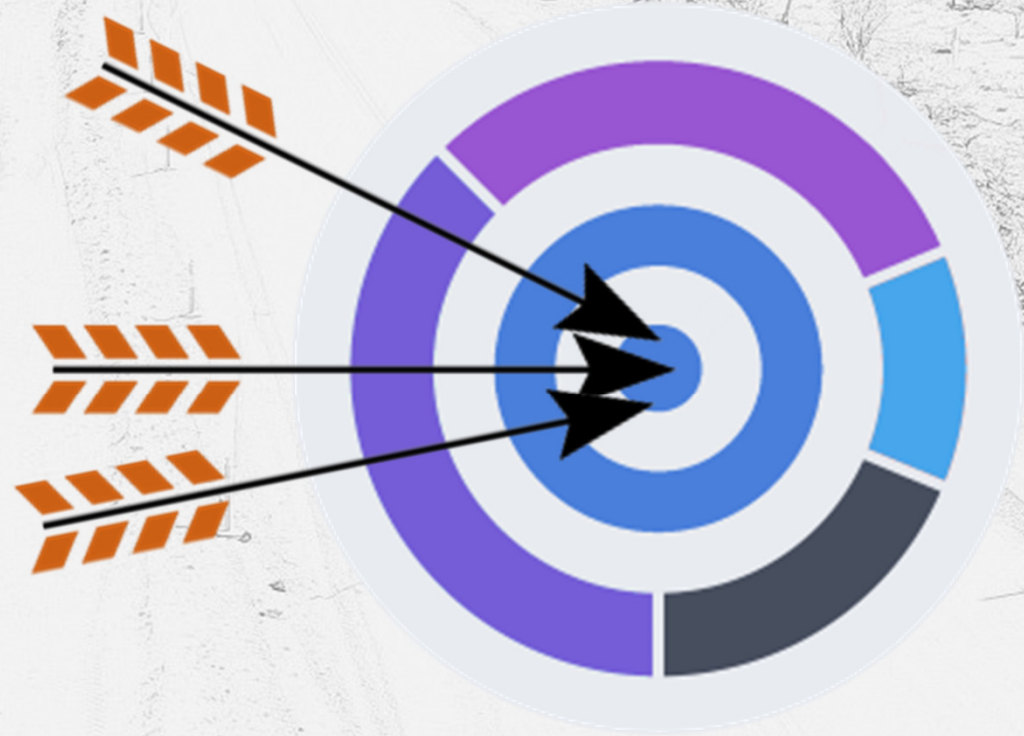
SPECIFICATIONS

USING DIPL WORKSECTION TEMPLATES TO ACHIEVE QUALITY

All worksection templates include the construction processes required for each particular item of work. They define clear industry standard acceptance criteria in the form of:

- Tolerances.
- Performance.
- Testing and Certification.

Modify the worksection templates to suit the defined quality levels for each project and its components.





SPECIFICATIONS

LAUNCHING TDO

Navigation bar with links: Login, Our Websites, Our Government, Key Systems, myHR, NTG Central, NTG Phones, NTG Jobs, Noticeboard. Main menu items: DIPL Intranet, My Employment, Manager Resources, Tools and Services, Health and Safety, Manage Projects, Our Department, Search.

TDO
+ Tender Documents Online
Tender Documents Online (TDO) has replaced TDMS to generate and maintain document sets for all procurement tiers.

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Tender Documents Online (TDO) a document generation system used to create documents for procurement tenders.

REQUEST TDO ACCESS

TDO is available to all employees by accessing the web based link.
Administrators can control and change other users work, for example the ability to view all documents for the agency.

[Launch TDO](#) [MORE](#)



TYPES OF SPECIFICATIONS

REFERENCE

An identifiable printed and published document is incorporated by reference to it. These may be Australian Standards or manufacturer's technical manuals. The DIPL published books are used as a reference specification in some of our contracts.

PERFORMANCE

Describing a desired end result and its acceptability.

DESCRIPTIVE

Detailing the materials, workmanship and installation requirements.

PROPRIETARY

Naming a proprietary trade name product.

BRADFORD THERMOFOIL 753HD

SUPER ALCOR

BUILDEX CLIMASEAL ® 5 WITH CYCLONIC ASSEMBLY

BOSTIK SEAL N FLEX 1

CEMENTAID CALBLACK

RAVEN RP4

PROPRIETARY ITEM:



TYPES OF SPECIFICATIONS

PROPRIETARY ITEM DEFINITION

Identification of a proprietary item does not imply exclusive preference for the item identified. It indicates the necessary properties of the item.

If alternatives are proposed, sufficient information needs to be submitted to permit evaluation of the proposed alternatives including the following:

- Evidence that the performance is equal to or greater than that specified.
- Evidence of conformity to a cited standard.
- Samples.
- Essential technical information, in English.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the works.

There is a clause on Substitutions in the Conditions of Contract. All proposed substitutions need to be approved by the Superintendent



TYPES OF SPECIFICATIONS

1. INSULATION, SARKING, AND PLIABLE MEMBRANES

1. MATERIALS AND COMPONENTS

1. Sarking-type material including vapour barriers

To AS/NZS 4200.1. Standards Mark required.

Proprietary Item: Bradford Thermofoil 753HD or Fletcher Metal Roof HD 453.

Where Sarking also forms a vapour barrier, the material must also be classified VCM Class 1 to AS/NZS 4200.1

Flammability index < 5 when tested in conformance with AS 1530.2.

Thermal performance labelling: To AS/NZS 4859.1 Reflective Insulation section.

Material must be classified as Water Barrier (AS/NZS 4200.1).

REFERENCE

PERFORMANCE

DESCRIPTIVE

PROPRIETARY



TYPES OF SPECIFICATIONS

1. SUSPENDED CEILINGS

1. CONSTRUCTION GENERALLY

1. Ceiling grid – Hold Point

Main tees at 600 mm centres unless noted otherwise.

Set out the ceiling grid so that panel joints and centrelines of visible suspension members coincide with grid lines if shown on the drawings. If not otherwise shown, set out so that opposite margins are equal. Use solid tiles around perimeter.

Follow manufacturer's installation guidelines and manuals.

Hold Point - Obtain approval of the set out before commencing the installation.

REFERENCE

PERFORMANCE

DESCRIPTIVE

PROPRIETARY



TYPES OF SPECIFICATIONS

1. ROAD FURNITURE AND TRAFFIC CONTROL DEVICES

1. GUIDE POSTS

1. General

Use THERMOPLASTIC guide posts manufactured from plastic alloy ASA/PC or similar.

Refer to Civil Standard Drawing CS 3500.

Posts to conform to the following:

- Colour: Opaque white.
- Finish: Smooth, glossy.
- Length: 1380 mm.
- Width: 95 mm minimum, 105 mm maximum, width to be constant to within 1 mm.
- Web thickness: 3 mm minimum, 5 mm maximum.

REFERENCE

PERFORMANCE

DESCRIPTIVE

PROPRIETARY



TYPES OF SPECIFICATIONS

1. EARTHWORKS

1. FILL MATERIAL

1. General fill

Use the best locally available material. Use fill material, whether cut or borrow, that is free of organic matter and has a minimum soaked CBR at 95% MMDD of 20%, to AS 1289, and a plasticity index between 2% and 15%.

REFERENCE

PERFORMANCE

DESCRIPTIVE

PROPRIETARY



SPECIFICATION WRITING

IMPERATIVE MOOD STYLE

Address the Specification to the Contractor in the direct instruction style; imperative mood of the verb; second person, singular; subject suppressed.

The Imperative mood style is adopted as policy by Masterspec (USA), NBS (UK), CSC (Canada) and NATSPEC (Australia and New Zealand).

For example:

- Supply and Install. **not** You shall Supply and Install.
- Lay tiles. **not** Tiles shall be laid.
- Provide light fittings. **not** The contractor shall provide light fittings.

The active verb is usually the first word in each sentence. The words “the Contractor shall” are usually made redundant, by putting the verb in the Imperative mood.

Using the imperative mood results in specifications that are shorter, crisper, and easier to understand.

CONFORM **DO NOT** **INSTALL** **DELIVER**
USE **SUBMIT** **IMPERATIVE MOOD:** **ENSURE**
SUPPLY



SPECIFICATION WRITING

REPETITION

Avoid repetition within the specification and between the specification, drawings and other contract documents. Say everything, but say it only once.

STRUCTURE

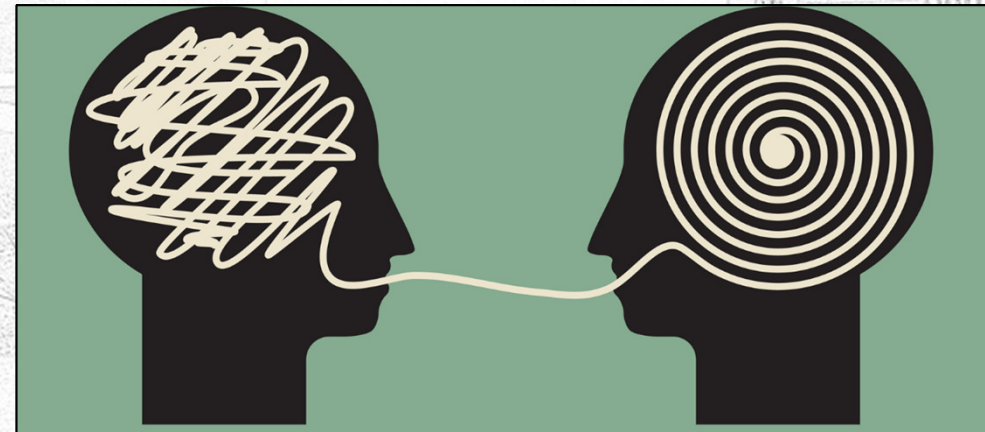
Break long clauses into subclauses, paragraphs, and subparagraphs with titles or bullet points.

Standardise text of common clauses and subclauses.

PLAIN LANGUAGE

Everyday language is easily understood by both the Layman and the Specialist. Use familiar and precise words and terms.

Avoid un-necessary words. Clearly convey the meaning, and avoid using Legal or Commercial phrases.





SPECIFICATION WRITING

CURRENCY

To be effective, project specifications should reflect current requirements and practices.

The best way of making sure a new specification is up-to-date is to use the latest worksection template available through Tender Documents Online (TDO).

The screenshot shows a web interface for a 'Document Wizard'. At the top, there are navigation tabs: 'Sites', 'Templates', 'Documents', and 'My Details'. Below the tabs is a hamburger menu icon. The main heading is 'Document Wizard - 'TDO Tier 345 RFX Generator''. On the left side, there is a vertical list of items, each with a green checkmark: 'Time for Completion', 'Limitation of Liability', 'Defects Liability Period', 'Directorate', 'Scope', 'Scope', 'Preliminary Clause - Description of Work', 'Preliminary Clause Description of Work', and 'Site of Works'. The 'Directorate' item is currently selected. The main content area is titled 'Select which Master Specs you want to insert' and includes the instruction 'Complete the Active Fields for the 'Select which Master Specs you want to insert' group.' Below this, there is a list of work categories with checkboxes: 'Works Fitout', 'Works Water and Sewerage', 'Works Major Building Works' (checked), 'Works Roadworks', 'Works Std Spec Roadworks SOR PSR's', 'Works Road Maintenance', 'Works Small Building Works', and 'Works Bridgeworks'.



SPECIFICATION WRITING

LISTS

Where several items need to be itemised within a single paragraph, the items should be in Bullet style.

The styles in Word in TDO include a heading for bullets. These are set back from the margin (indented).

For example:

Spread Topsoil to the following typical depths:

- Planting areas: 300 mm.
- Irrigated grassed areas generally: 150 mm.

6.12.2 Tolerances on placement

Maximum deviation from correct positions:

- Embedded items generally: $\pm 10^{\circ}\text{mm}$.
- Fasteners including anchor bolts: $\pm 3^{\circ}\text{mm}$.
- Anchor bolt groups for structural steel: To AS 4100 Erection clause, Location of anchor bolts sub-clause.

4.14. PROOF ROLLING
 Witness Point--Give the Superintendent witnessed

Location: Subgrade surface and base layers below slabs and pavements.
 Roller type and size; use plant in proof rolling procedures that comply with the following requirements:

- Static smooth wheeled rollers with a mass intensity under either the front or rear width of wheel. Or
- Pneumatic tyred plant with a mass of under either the front or rear width of wheel.

5.2 INSPECTIONS

5.2.1 Notice--Witness Point
 Witness Point--Give sufficient notice

- Chemical

4.8.6 Explosives--Hold-Point--Witness Point

Hold-Point-- Do not use explosives unless approval has been granted

[In residential areas edit to read "Do not use explosives unless approval has been granted by the relevant authority"]

Witness Point-- Provide evidence to the Superintendent of the following:

- Licence to carry and store explosives
- Vehicle licensed to carry explosives
- Shot fire's certificate

[Delete these requirements if explosives are not used]



SPECIFICATION WRITING

KEY WORDS

A key word followed by a colon (:) readily identifies the content of a paragraph. This allows the faster scanning of the text by the reader. Key words may also be used to make reference to an Australian Standard.

For example:

Cement: to AS 3972, type GP.

TABLES

Keep tables in the portrait or upright format and keep the complete table on one page (when possible). If a table overruns the page, repeat the table headings on the following page.

GROUP NUMBER CLASSIFICATION:

THICKNESS:

CBR:

PROTECTIVE COATINGS:

FIXING:

STANDARD:

DEPTH:

GRADIENT:

KEYWORDS:

REQUIREMENT:



USING DIPL WORKSECTION TEMPLATES

Worksection templates are for use with projects of many types and sizes. They will not contain all the technical requirements for every project. For each project the specification writer will need to select the appropriate worksections and edit the material to suit the project.

Editing may include:

- Deletion of inappropriate options.
- Deletion of lengthy descriptive or performance material where a proprietary specification is appropriate and is permitted.
- Deletion of Prototypes, Samples and Tests clauses where they are not warranted by the size and complexity of the project.
- Additional requirements not covered in the worksections.

63.2→INSPECTIONS¶¶

63.2.1·Notice--·Witness·Point¶¶

Witness·Point--Give notice so that inspection may be made of the following:¶¶

- Boundary survey location if applicable.¶¶
- Set-out before construction.¶¶
- Foundation conditions before placing concrete in footings.¶¶

[Amend to suit project requirements.¶¶]





USING DIPL WORKSECTION TEMPLATES

The following is a step-by-step guide on how to edit a specification from a worksection template:

- **Identify clauses not required:** Delete unnecessary clauses from the worksections. Highlight clauses you are not sure about and leave until later.
- **Identify subclauses not required:** Delete unnecessary subclauses from the worksection. Highlight subclauses you are not sure about and leave until later.
- **Identify paragraphs not required:** Delete unnecessary paragraphs. Refer to the hidden guide notes.
- **Complete the write-in options:** Complete the options, *[complete/edit]* prompts and schedules.
- **Add new material:** Add original material not captured in the worksection templates.

11.11 METAL CLADDING¶

Provide a proprietary system of prefinished profiled metal cladding complete with accessories, trims, and flashings.¶

Proprietary item: → → *[complete/edit]¶*

[Name the profile and name the Manufacturer.]¶

Material: Zinc coated steel sheet to AS 1397 – minimum coating AZ150.¶

Thickness: → → → *[complete/edit]¶*

[Generally 0.42 or 0.48 BMT]¶



USING DIPL WORKSECTION TEMPLATES

- **Edit standard text:** Edit standard worksection text where it conflicts with project requirements, the drawings, completed prompts, or with added new material.
- **Check cross-references:** Check all cross-references in the project specification to other worksections, standards, referenced documents, and contract documents. Make sure that cross-referenced material has not been accidentally deleted.
- **Proofread:** Check the format, Remove all guide notes, populate Hold Points and Witness Points, and update Table of Contents.
- We maintain the specifications but the templates might not cover all technical requirements and we are not experts in all technical areas. We require **FEEDBACK** and **COMMENTS** from **YOU** to improve our specification for future use.

F E E D B A C K



USING DIPL WORKSECTION TEMPLATES

PROJECT OFFICER FEEDBACK

1 PAINTING

DIPL Major Building Works - May 2019

1.1 POWDER COATING

1.1.1 Powder coat subcontractors – Witness Point

Witness point - Submit name and contact details of proposed specialist applicators as registered by the coating manufacturer.

1.1.2 Powder coat warranties – Witness Point

Witness Point - Submit the coating manufacturer's warranties in the name of the Principal.

Aluminium substrate

Minimum warranty period colour retention: 15 years.

Minimum warranty period film integrity: 20 years.

Steel surfaces

Minimum warranty period colour retention: 15 years.

Minimum warranty period steel corrosion: 10 years.



USING DIPL WORKSECTION TEMPLATES

PROJECT OFFICER FEEDBACK

1 SUSPENDED CEILINGS

DIPL Major Building Works - May 2019

1.1 CONSTRUCTION GENERALLY

1.1.1 Ceiling grid – Hold Point

Main tees at 600 mm centres unless noted otherwise

Set out the ceiling grid so that panel joints and centrelines of visible suspension members coincide with grid lines if shown on the drawings. If not otherwise shown, set out so that opposite margins are equal. **Use solid tiles around perimeter. Follow manufacturer's installation guidelines and manuals.**

Hold Point - Obtain approval of the set out before commencing the installation.

1.1.2 Service penetrations

Do not drill through or cut into ceiling tiles with acoustic insulation. Drill or cut through solid tiles only. Follow manufacturer's installation guidelines and manuals.

1.1.3 Cutting tiles

Do not cut ceiling tiles with acoustic insulation. Cut solid tiles only. Follow manufacturer's installation guidelines and manuals.



USING DIPL WORKSECTION TEMPLATES

PROJECT OFFICER FEEDBACK

1 LANDSCAPE

DIPL Roadworks Master - May 2019

1.1 BATTER PROTECTION BY HYDROSEEDING

1.1.1 General

Use an approved hydraulically-applied proprietary erosion control Engineered Fibre Matrix (EFM) product.

The EFM is to be 100% biodegradable, and is to be composed of 100% recycled, thermally refined (within a pressurized vessel) virgin wood fibres, crimped interlocking biodegradable fibres, mineral activators and wetting agents (including high-viscosity colloidal polysaccharides, cross-linked biopolymers, and water absorbents).



USING DIPL WORKSECTION TEMPLATES

PROJECT OFFICER FEEDBACK

1 ROAD FURNITURE AND TRAFFIC CONTROL DEVICES

DIPL Roadworks Master - May 2019

1.1 ROAD SIGNS

1.1.1 Anti-spear fixings for hazard markers (sight boards)

Hazard markers (D4-1-1A), and other signs at similar heights, which are installed parallel to the path of travel of traffic, require anti-spear fixings.

Hazard marker signs are to comprise two D4-1-1A signs, mounted end to end.

The bracing rails are to be aluminium extrusions, each made up of two equal length sections, spliced at the centre line. The aluminium extrusions are to be Capral EK8891S WA Type A, or Ullrich UA6490, or equal equivalent.

The construction details are shown on the Queensland Department of Transport and Main Roads Standard Drawing No. 1452, Sheets 1, 2, and 3. This Standard Drawing can be accessed via

<https://www.tmr.qld.gov.au/-/media/busind/techstdpubs/Specifications-and-drawings/Standard-Drawings-Roads/Roadworks-Drainage-Culverts-and-Geotechnical/SD1452.pdf?la=en>

Any annotation on the Queensland Standard Drawing Sheets which refer to additional Queensland specifications, concrete footings, and steel posts are to be disregarded, and the Northern Territory requirements are to be met – refer to Northern Territory specifications in this document and, if applicable, in other Northern Territory specifications documents.



RULES AND WRITING TIPS

Our communications need to be unambiguous, easily understood, and difficult to misinterpret.

RULES

1. BE CONCISE

A good specification is clear, concise and easily understood.

- Use plain English and basic terminology to convey the required information.
- Minimise alternatives and specify wanted results by using as few words as possible.
- Provide clear instructions.
- Provide specific directions, not suggestions, explanations or reasons.
- Do not include redundant information.

Ask yourself: Is it understandable, clear, simple and not ambiguous?





RULES AND WRITING TIPS

RULES

2. BE PRECISE

- Check source documents to ensure you use the correct words, phrases and terms.
- Use mandating terminology and avoid vague and ambiguous text.
- Be consistent in word use and phrase the same word throughout the document if the meaning is the same.
- Be specific: redundant information will reduce clarity.

3. BE UP TO DATE

Only use current information.

- Confirm dates and References.
- Old can be current. Some Australian Standards dating back to the 1970's have never been replaced.
- Check source documents for updated information.
- Use the latest TDO generated worksection templates.





RULES AND WRITING TIPS

RULES

4. DO NOT REPEAT

Decide what information is to be given in which documents early on in the project.

- Give that information once only. By showing information only once in the documents, if a change is made to one item, only one change needs to be made to the documents.
- If information is in the specification do not show it on the drawings.
- Keep notes on drawings to a minimum if a written specification is produced.
- Minimising repetition will minimise conflict.

5. DO NOT CONTRADICT

Ensure information in the various project documents is consistent.

- Cross reference, check and review all documents, if possible review by a third party.
- Delete redundant information which can contradict.
- State an order of precedence if required.

Ask yourself: Does the specification complement the drawings or other supplementary documents?





RULES AND WRITING TIPS

RULES

6. CO-ORDINATE

Inform all people contributing to the documentation what decisions were made in relation to the project.

- Update the project team on the necessary amendments.
- Decide what information will be shown where.

Co-ordination means:

- Direction.
- Organisation.
- Delegation.

Ask yourself: How will the information be co-ordinated and shared?

7. THE GOLDEN RULE

Interpret each rule as if followed by “unless context and common sense dictate otherwise.” Do not follow a rule if clarity is reduced.

This is the Golden RULE.





RULES AND WRITING TIPS

WRITING TIPS

Shall: Is indicative of a mandatory requirement unless the context clearly indicates otherwise.

Should or may: Indicates a recommendation (non-mandatory). It is best to avoid them.

By others: Use the words “by others” in a Project Specification to mean that it is not required in that contract.

Do not use the words “by others” to mean “by another trade” within that contract. Project specifications are a set of instructions to the Contractor. The Contractor will determine the tasks assigned to the trades.

Unless otherwise specified: Do not use the phrase “unless otherwise specified” as it requires the reader to scan the whole Specification to check for any exceptions. Specify the general requirements and clearly identify any exceptions in the relevant section of the Specification.



RULES AND WRITING TIPS

WRITING TIPS

Or equivalent: Do not use the words “or equivalent” or “or equal” as this is covered in the Proprietary Items clause in the Conditions of Contract.

As appropriate: Do not use “as appropriate”. Who decides what is appropriate?

Superintendent: Refer only to the Superintendent (or to the Principal in specific cases) and not to the Superintendent’s representative, the Engineer, the Architect or the Supervisor.

The Contract is administered by the Superintendent who will seek the assistance of the relevant Specialists when required.





AMBIGUITY

Ambiguity: The quality of being open to more than one interpretation.

Specifications need to be unambiguous, easily understood, and difficult to misinterpret.

Example 1: All surfaces shall be painted white to increase reflectivity.

Does it mean?

- Paint all surfaces white?
- Determine which surfaces have lower reflectivity than white paint, and paint them white?

The intent was to paint all surfaces white. The contractor interpreted the clause differently.





AMBIGUITY

Ambiguity: The quality of being open to more than one interpretation.

Example 2: Prior to accepting software or documentation developed by subcontractors, the contractor shall evaluate them for completeness, technical adequacy, and compliance with the contract.

What is to be evaluated? Is it the deliverables, or is it the subcontractors?

Example 3: The existing demountable will be relocated to an alternative location on the site within 50 m of the present location. Reconnect the demountable to power, water and sewerage services.

The contractor arrived on site and asked “When is the demountable going to be relocated so that I can reconnect the services?”





AMBIGUITY

Ambiguity: The quality of being open to more than one interpretation.

CONTEXTUAL AMBIGUITY

Example 4: The flange shall be fastened by three round-head screws, three flathead screws, and three fillister-head screws all of grade eight.

Means you've specified that three of the screws must be of grade eight.

The flange shall be fastened by three round-head screws, three flathead screws, and three fillister-head **screws**, all of grade eight.

Means you've specified all nine of the screws must be of grade eight.

Example 5: The flange shall be fastened by nuts and bolts of stainless steel.

Means you've specified that the bolts only are to be stainless steel.

The flange shall be fastened by nuts and **bolts**, of stainless steel.

Means you've specified that the nuts and bolts are to be stainless steel.



TOOLS AND REFERENCE MATERIAL

TECHNICAL SPECIFICATIONS WEBSITE

Information accessible via DIPL Technical Specifications website can assist consultants and project officers prepare specifications and contract documents.

Specification Writing Guidance Booklet is a compilation of articles created after research into Specification writing. Most of the articles are from sources outside Australia, but the selected sections are relevant to the Australian context.

<https://dipl.nt.gov.au/infrastructure/technical-standards-guidelines-and-specifications/technical-specifications>

Roads webpage. Master specifications, standard specification reference books, and supplementary documents all available for download.

<https://dipl.nt.gov.au/infrastructure/technical-standards-guidelines-and-specifications/technical-specifications/roads>

Buildings webpage. Master specifications, standard specification reference books, and supplementary documents all available for download.

<https://dipl.nt.gov.au/infrastructure/technical-standards-guidelines-and-specifications/technical-specifications/buildings>



TOOLS AND REFERENCE MATERIAL

NATSPEC

NATSPEC is a national not-for-profit organisation, owned by Government and industry, whose objective is to improve the construction quality and productivity of the built environment through leadership of information.

NATSPEC TECHnotes

<https://www.natspec.com.au/resources/technotes>

NATSPEC TECHreports

<https://www.natspec.com.au/resources/techreport>

Note: You will need to sign up (free) to be able to download NATSPEC technical resources.



TOOLS AND REFERENCE MATERIAL

HEMINGWAY APP

<http://www.hemingwayapp.com/>

Hemingway App can be used to make your writing bold and clear. The app highlights lengthy, complex sentences and common errors.

The screenshot displays the Hemingway App interface. At the top, there are navigation links for 'Feedback' and 'Help', and a menu with options: 'Bold', 'Italic', 'H1', 'H2', 'H3', 'Quote', 'Bullets', 'Numbers', and 'Link'. On the right side, there are buttons for 'Write' and 'Edit'. The main content area features the heading 'Hemingway App makes your writing bold and clear.' followed by two sub-headings: 'Major Building Works - Civil Works Worksection' and 'Road Marking Paint - Witness Point'. Below these, a paragraph of text is shown with several words highlighted in pink, indicating readability issues. On the right side of the interface, there is a 'Readability' section showing 'Grade 13' and 'OK. Aim for 9.'. Below this, there are four colored boxes providing feedback: a blue box stating '0 adverbs. Well done.', a green box stating '0 uses of passive voice. Nice work.', a purple box stating '1 phrase has a simpler alternative.', and a yellow box stating '0 of 5 sentences are hard to read.'. At the bottom of the feedback section, a red box states '2 of 5 sentences are very hard to read.'. On the left side of the interface, there is a 'Desktop App' button, a green callout bubble saying 'Just Released! Version 3.0!', a 'Like 67K' button, and a 'Tweet' button.



TOOLS AND REFERENCE MATERIAL

HEMINGWAY APP

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The screenshot shows the Hemingway App interface. At the top, there are navigation links for 'Feedback' and 'Help', and a menu with options: 'Bold', 'Italic', 'H1', 'H2', 'H3', 'Quote', 'Bullets', 'Numbers', and 'Link'. On the right side, there are buttons for 'Write' and 'Edit'. The main content area displays the following text:

Hemingway App makes your writing bold and clear.

Major Building Works - Civil Works Worksection

Road Marking Paint - Witness Point

Road marking paint: Approved water based white road marking paint conforming to APAS 0041/5

Suitable for application by spray equipment to asphalt and bituminous seal when tested to AS/NZS 1580.205.4

Suitable for use with Intermix drop on spherical glass beads.

On the left side, there is a 'Desktop App' button, a green callout bubble that says 'Just Released! Version 3.0!', a 'Like 67K' button, and a 'Tweet' button. On the right side, there is a 'Hemingway Editor' logo and a 'Readability' section showing 'Grade 10' and 'OK. Aim for 9.'. Below this, there are four colored boxes with feedback: a blue box with '0 adverbs. Well done.', a green box with '0 uses of passive voice. Nice work.', a purple box with '0 phrases have simpler alternatives.', and a yellow box with '2 of 7 sentences are hard to read.'. At the bottom of the readability section, there is a red box with '1 of 7 sentences is very hard to read.'.



TOOLS AND REFERENCE MATERIAL

HEMINGWAY APP

<http://www.hemingwayapp.com/>

The screenshot displays the Hemingway Editor interface. At the top, there are navigation links for 'Feedback' and 'Help', and a toolbar with options for 'Bold', 'Italic', 'H1', 'H2', 'H3', 'Quote', 'Bullets', 'Numbers', and 'Link'. On the right side, there are 'Write' and 'Edit' buttons. The main content area shows a document with the following text:

Hemingway App makes your writing bold and clear.

Major Building Works - Civil Works Worksection

Road Marking paint - Witness Point

Road marking paint: Conform to the following:

- Approved water based white road marking paint conforming to APAS 0041/5
- Suitable for application by spray equipment to asphalt and bituminous seal road surfaces, when tested to AS/NZS 1580.205.4
- Suitable for use with Intermix drop on spherical glass beads.

On the right side of the interface, there is a 'Readability' section showing 'Grade 7' and 'Good' readability scores. Below this, there are four colored boxes with feedback: a blue box stating '0 adverbs. Well done.', a green box stating '0 uses of passive voice. Nice work.', a purple box stating '0 phrases have simpler alternatives.', and a yellow box stating '1 of 7 sentences is hard to read.' At the bottom of the readability section, a red box states '0 of 7 sentences are very hard to read.'

On the left side of the interface, there is a 'Desktop App' button, a green callout bubble that says 'Just Released! Version 3.0!', a 'Like 67K' button, and a 'Tweet' button.



HOLD POINTS AND WITNESS POINTS

Hold Points and **Witness Points** are construction stages which may need additional inspection, verification and documentation.

HOLD POINT

A **Hold Point** is a mandatory verification point beyond which a work process cannot proceed without authorisation by the Superintendent.

Hold Points are usually assigned to those critical aspects of the work that cannot be inspected or corrected at a later stage.

The relevant work cannot proceed until the Superintendent is able to verify the quality of the completed work and releases the Hold Point.

Use **Hold Points** sparingly as each potentially affects project duration and cost.



HOLD POINTS AND WITNESS POINTS

WITNESS POINT

A **Witness Point** is an identified point in the work process where the Superintendent may review, witness, inspect or undertake tests on any component, method or process of works.

The contractor is required to notify the Superintendent who may or may not take the opportunity. The subsequent activity however, may proceed.



BIBLIOGRAPHY

REFERENCE

NATSPEC <https://www.natspec.com.au/>

Developing Specifications - Queensland Government.

Guide to Writing Specifications, Masterspec, New Zealand.

Specification and Writing Style Manual, Oregon Department of Transportation, USA.

Specification Style Guide, California Department of Transportation, USA.

A Guide to Writing Specifications, Los Angeles Unified School District, USA.

Writing Better Technical Specifications, G Covey & G Faber, Somerset, Tasmania.

Hemingway app <http://www.hemingwayapp.com/>

QUESTIONS?

