

Work Instruction

Design submission using DTC or Engineering Certified solution.

1. Overview

1.1. Objective

This work instruction provides the process that the Water Servicing Coordinator (WSC) is to follow to submit a design package for drinking water, recycled water or waste water in order to meet Quality Assurance (QA) requirements.

1.2. Scope

- **Covered in this Work Instruction**

It will provide instruction on using Deemed to Comply (DTC) drawings and instances where independent certification is provided where the DTC cannot be used or is deemed not suitable in the specific design solution.

- **Not covered in this Work Instruction**

This work instruction does not change the current process for reviewing stormwater design packages. These will continue to follow the existing process/submission requirements.

1.3. Summary

The accredited Designer will provide the completed design package to the WSC, address the pre-design questions and provide engineering certification for the design **OR** reference on the design plan the DTC's used and attach them with the design plan.

2. Background

The DTC drawings have been developed by Sydney Water in an attempt to streamline design acceptance, provide a detailed design solution that can be used by the industry and provide a minimum standard for engineering detail, constructability and design excellence that should eliminate the need to re-engineer a solution for high volume asset construction.

Sydney Water's position is where a DTC has been assessed by the designer as applicable in design preparation; then Sydney Water does not need to review that component of the detailed design. This is because the risks have already been addressed in the development of the DTC drawings.

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Use of standard drawings in the codes alone is not sufficient as the drawings are illustrative and provide general guidance to Designers for the preparation of detail design drawings. They are in themselves not adequate for construction purposes.

3. Roles and responsibilities

The Roles and responsibilities are clearly outlined in the instructions to WSC's and Designers.

Sydney Water may check or audit a design, however responsibility and liability for design preparation, verification and certification rests with the Designer.

4. Process

4.1 Using DTC in Design submission (All or Part)

The Designer responsible for the preparation of the design completes follows their quality system for design production. After the design has been developed, the DTC drawings are assessed to see where they can be applied. **It is an assumption that the Terms of Use of the DTC are accepted before incorporating the DTC into a design.**

The DTC Terms of Use and the DTC drawings can be found on the ['Standards & specifications'](#) page of Sydney Water's web site.

The detailed design references the relevant DTC components and the referenced DTC's are attached with the design to form the complete design package. (Complete design package only relates in this instance to a final design for submission, it is not in reference to if a constructor has been nominated at the design submission stage.)

Sewer DTC:

For **all sewer** DTC applications of maintenance hole construction; the Maintenance hole construction notes, DTC-2000 **must** be attached in addition to the specific DTC construction drawing.

Plan Notes:

Where only using one DTC MH option, it is sufficient to have a note on the plan saying "All MH's to be constructed in accordance to DTC-2000, DTC-2200, DTC-2221 & DTC-2222"

Where using MH 6m>10m DTC-2200 and MH 1.6 >10m DTC-2221 for separate applications on a design drawing, the plan should be noted at each MH to direct the constructor to a specific DTC, each plan reference should have a construction note referring the constructor to a specific plan note. A table could be provided on the design plan and identifying each MH on the plan and which DTC's the Constructor should refer to. A note could read "MH "A", - "F" to be constructed in accordance to DTC-2000, DTC-2200, DTC-2221 & DTC-2222 and

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“MH “G”, - “Z” to be constructed in accordance to DTC-2000, DTC-2201, DTC-2221 & DTC-2222”

In all cases the DTC's used in the design are to be attached with the design plan as part of the Design Package. This is so that the version used is attached for reference and the Constructor does not need to use a copy that may have been superseded.

Water DTC:

For some of the water DTC's there are still some dimensions that the designer will need to specify. See below for details:

eg For one crossing only using DTC 1124 “Crossings Under Obstructions Water Mains <300”

Show “A” on design drawing with construction box at the crossing and include table on Design plan for Constructor reference -

DTC 1124 Crossings Under Obstructions Water Mains <300	
Dimensions	Crossing “A” mm
W	
X1	
Z1	
L1	

(The table is part of the design drawing on the plan prepared by the Designer; whereas the DTC are attached with the design for the constructor to refer to from the detailed design drawings.)

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eg For multiple crossings using DTC 1124 “Crossings Under Obstructions Water Mains <300”

Show “A” – “G” on design drawing with construction box at each relevant crossing and include table on Design plan for Constructor reference -

DTC 1124 Crossings Under Obstructions Water Mains <300							
Dimensions	Crossing “A” mm	Crossing “B” mm	Crossing “C” mm	Crossing “D” mm	Crossing “E” mm	Crossing “F” mm	Crossing “G” mm
W							
X1							
Z1							
L1							

Show “A” – “G” on design with construction box referring for Constructor reference to relevant DTC

Plan Notes:

eg For a design only using one DTC crossing then the plan note should read something like “Crossings A – G are to be constructed in accordance with DTC-1124, refer to table on sheet ‘X’ for details” or words to that effect.

eg For a design only using different DTC crossings, then the plan note should read something like “Crossings A – G are to be constructed in accordance with DTC-1124; Crossings H – K are to be constructed in accordance with DTC-1121 refer to table 1 and 2 on sheet ‘X’ for details” or words to that effect.

Where using different type of DTC’s for various design solutions there should be different notes to indicate and refer the constructor clearly to the relevant DTC. (E.g. using DTC’s for: “Thrust block details DICL and PVC water mains ≤ DN300 Horizontal bends Type 1”, “Thrust block details DICL and PVC water mains ≤ DN300 Tapers” and “Major roadway crossing water mains ≤ DN300 Type 3 - Trenched installation SCL main concrete encased” there must be a separate note for each DTC used. See below:

Note 13

Crossings A – G are to be constructed in accordance with DTC-1124; Crossings H – K are to be constructed in accordance with DTC-1121 refer to table 1 and 2 on sheet ‘X’ for details.

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Note 14

All taper thrust blocks are to be constructed in accordance with DTC-1112.

Note 15

Thrust blocks for bends L – N are to be constructed in accordance to DTC-1110, and Thrust blocks for bends O – Q are to be constructed in accordance to DTC-1111.

General principle

Where multiple DTC's are to be used for similar issues, like major service crossings, the designer is to provide sufficient guidance and unique identification on plan, with construction boxes and relevant plan notes to enable the constructor to easily refer from a specific point on the plan to a specific DTC and associated table (if applicable).

4.2 Not Using DTC (all or Part)

Where a DTC exists for a design issue and the DTC is not used, the person responsible for the design preparation must:

- Produce a detailed design solution with the same level of detail as the DTC option. This will be part of the detailed design.
- Provide engineering certification for the design solution either as a reference on the plan to the engineering certification **or** attach the engineering certification as a separate document with the design. (For each component.)
- Designer is to provide sufficient guidance and unique identification on plan, with construction boxes and relevant plan notes to enable the constructor to easily refer from a specific point on the plan to a detail, engineers certification detail and associated table where applicable.
- Submit the supporting documentation with the design for detailed review

The Sydney Water DSO will follow Work Instruction "Reviewing designs not using Deemed To Comply design solutions" (refer to BMIS document number ACDP0363).

The person who has prepared the design will liaise with the WSC representative who is submitting the design package in e-Developer to answer the pre-submission design questions relating to DTC and certification in the "Submit Design Package" Work item.

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5. References

Document type	Title
Policies and procedures	Instructions for Water Servicing Coordinators (Major Works)
	Instructions for Designers
	Work instruction - Reviewing designs not using Deemed to Comply design solutions
	Work instruction - Risk categorisation roles & responsibilities for submitting design packages

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