



# 8100 uPVC Pipes and Fittings

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REVISION 15/06/2024

## 8100.1 Introduction

This supplementary specification refers to the supply and installation of uPVC pipes and associated fittings, for property drainage purposes only (generally within an easement or reserve). It does not refer to the connection of roof water or property drainage to kerb or drainage components, refer instead to MRC Supplementary Specification 8102.

## 8100.2 Referenced Documents

This supplementary specification shall be read in conjunction with the following:

- MRS01 *“Introduction to Specifications”*;
- MRTS01 *“Introduction to Technical Specifications”*;
- MRS03 and MRTS03 *“Drainage, Retaining Structures and Protective Treatments”*;
- MRS04 and MRTS04 *“General Earthworks”*
- MRS70 and MRTS70 *“Concrete”*
- MRS71 and MRTS71 *“Reinforcing Steel”*
- Mackay Regional Council Planning Scheme Policy (PSP) – *“Stormwater Drainage Design”* Mackay Regional Council’s Supplementary Specification 8111 *“uPVC Stormwater Pits”*
- AS/NZS 1260 *“PVC-U Pipes and Fittings for drain, waste and vent applications”*;
- MRC Standard Drawing A3-00870 *“Details of Allotment Gradings and Allotment Drainage”*; and
- the Project Drawings and Specifications

## 8100.3 Description of Work Items

Work items incorporated by this supplementary specification are identified in Section 8102.6 and 8102.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8100\_1 uPVC Pipes and Fittings Section 1

## 8100.4 Quality Systems Requirements

### 8100.4.1 Std Test Methods (Testing Regime)

The following minimum testing regime applies to this specification:

Unless otherwise stated the manufacturer certification of the precast pit and components shall form the basis of the requirements.

Civil works activities associated with the installation of property drainage pipes, fittings, and pits shall be tested as per the relevant TMR specification MRTS03 and MRTS04, unless otherwise approved by the Superintendent.



### 8100.4.2 Hold Points, Witness Points and Milestones

The following table represents the minimum inspection requirements for this specification;

Activity	Inspection Type	When
Construction Procedure and other submissions as required by Clause 8100.5	Milestone	4 Weeks prior to works commencing
Inspection of delivered items	Hold Point	At delivery time for each item.
Site layout marked out and as per project drawings	Hold point	Prior to excavations commencing
Excavated floor of pipe run/s	Hold Pont	Prior to installing bedding for pipes
Bedding installation	Hold Point	Prior to laying pipes
Installation of uPVC pipes and fittings	Witness Point	After laying before backfilling for alignment, grade and levels
Backfilling of pipes	Witness Point	During process to ensure the correct procedure is being followed
Break into existing pit (as required)	Hold Point	Prior to commencing coring to verify break in
Excavated floor of new pit/s (as required)	Hold Point	Prior to installing new pit
Concrete prepour inspections of new pit floor and walls (as required),	Hold Point	Prior to pouring concrete
Backfilling to new pit (as required)	Witness Point	After installation of pit, stubs and connection of stormwater pipes.
Connection to allotment pit within MRC Easement, installing capped stubs only (as required)	Witness Point	At completion of excavation
Backfilling, turfing, cleaning of site	Witness Point	At completion of works
Works as Executed documentation	Hold Point	4 weeks prior to practical completion being requested.
Site inspection	Hold Point	At completion of all works and after submission and approval of As Constructed documentation

### 8100.4.3 Construction Tolerances

Unless otherwise approved by the Superintendent the following construction tolerances shall apply as to this Specification;

The construction activity outcome shall not depart from the widths, lengths, heights, and shapes specified by the relevant specifications as applies to this specification;

- Concrete tolerances in accordance with MRTS70 Concrete.
- Bedding, laying, and backfill to culvert tolerances in accordance with MRTS03 and MRTS04



Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8100\_1 uPVC Pipes and Fittings

## **8100.5 Preliminary**

The Contractor is to submit the following documentation 4 weeks prior to commencing work or a prestart is conducted.:

- Works procedure
- Erosion and Sediment Plan (as required for site/s)
- Workplace health and safety Plan (as required for site)

**MILESTONE**

Other preliminary requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8100\_1 uPVC Pipes and Fittings

**MILESTONE**

### **8100.5.1 Materials**

#### **Pipe and Fittings**

The uPVC Stormwater pipes, and fittings are a proprietary item and must comply with SN10 to AS/NZS 1260 “PVC-U Pipes and Fittings for drain, waste and vent applications” as per Council’s requirements, its use shall be limited to internal property drainage reticulation and **not** for use in the road reserve unless otherwise approved by the Superintendent.

#### **Pits (insitu and precast)**

Where uPVC precast pits are utilised within the property these shall comply with MRC Supplementary Specification 8111. Where concrete insitu poured pits are utilised within the property these shall comply with design drawings, MRTS70 and MRTS71.

#### **Other materials**

As applies to this specification materials also include fixings, lubricants, and sealing agents which form part of the manufacturers specification and installation requirements for the proprietary product specified in the design drawings.

Civil materials for the purpose of bedding and backfilling shall comply with MRTS03 and MRTS04.

#### **Supply and salvaging**

Supply of materials to site is the responsibility of the Contractor at their cost, where items are Principal supplied the nominated storage site shall be obtained from MRC Supplementary Specification Annexure 8100\_1 uPVC Pipes and Fittings Section 3 and shall be the point of supply.

Where existing stormwater pipes and fittings are to be salvaged MRC Supplementary Specification Annexure 8100\_1 uPVC Pipes and Fittings Section 4 will detail the items to be salvaged and the nominated storage site. This will also include any reuse of existing items.

All civil items and materials shall be supplied in accordance with MRTS03, MRTS04 and MRTS70

### **8100.5.2 Ownership of Stormwater Connection and Pipes**

The stormwater pipes, stubs, and fittings required to connect to Council’s stormwater network remain private infrastructure owned by the respective property owner and shall be the responsibility of the property owner to maintain. This includes in commercial and industrial developments or properties.



## 8100.6 Construction

This section lays out the works operations with more detail based on specific requirements of this supplementary specification. Some activities may appear to include items which are stated within other specifications, the purpose is to reinforce that requirement specific to this supplementary specification.

Connection to all stormwater pits shall be approved and where a stub does not exist carried out by core drilling the wall with the diameter being the same size as the discharging pipe. The connection to the pit shall be sealed with an approved mega poxy sealant.

### 8100.6.1 Work Operations

Work operations incorporated in this item include:

**a) Work Operations included in Clause 2.1.5 of MRS01 “Introduction to Specifications”;**

**b) Supply of all materials;**

All materials, plant, and labour required to carry out the works under this Specification is to be supplied by the Contractor, where the materials are Principal supplied the designated storage site will be the point of supply for the purposes of this Specification.

All materials are to be inspected when delivered to site prior to use for defects and also for compliance to the relevant specification requirement. Any materials which are damaged or not within the specification requirements are not to be used and are to be returned to the supplier.

**HOLD POINT**

**c) Site layout with Superintendent**

The final location of the works is to be marked out on site and shall be inspected and approved by an MRC representative prior to excavation commencing, including any pits that require installation or breaking into.

**HOLD POINT**

**d) Carrying out excavations;**

Prior to excavations commencing the contractor shall ensure all services are located. Any excavation of material shall be to level and grade as per design drawings, with all works carried out in accordance with MRTS03 and MRTS04.

Testing of the excavated floor shall be carried out as per MRTS 04

Bottom of excavation is to be inspected for areas of unsuitable material at completion of excavation and compaction of excavated bed.

**HOLD POINT**

If unsuitable material is identified this is to be removed and replaced with approved material as per the instructions of the Superintendent.

**e) Utilizing or disposing of excavated material;**

The contractor is to ensure all materials identified for reuse are removed to an agreed storage site. All materials not identified for reuse shall be disposed of by the Contractor as identified in their Works procedure and Environmental Plan at no cost to the Principal.



**f) Break into stormwater pit (as required)**

Where the design drawings or project documents approve of connecting to an existing stormwater pit this shall be carefully excavated to avoid damage to the pit and other infrastructure.

The connection to and through the pit wall shall be core drilled, the diameter of the drill core shall be the same as the outside diameter of the discharge pipe. No breaking in by sledge hammers, concrete saws or other destructive methods is allowed.

A stub shall be inserted square and flush with the inside of the pit and protrude a minimum of 500mm outside of the pit for connection of the stormwater pipe. The inserted stub shall be sealed with an approved epoxy sealant.

**HOLD POINT**

**g) Installation of stormwater pit (as required)**

Where required for a stormwater pit to be installed, the pit can either be precast uPVC or insitu poured concrete.

The excavated floor for the pit shall be tested as required by MRTS03 unless otherwise approved by the Superintendent. The installation shall be as per the project drawings or documentation and MRC Standard Drawing A3-00870.

**WITNESS POINT**

Where approval to install a uPVC pit this shall be carried out as required by MRC Supplementary Specification 8111 "uPVC Stormwater Pits" including a full concrete surround.

Insitu poured concrete pit shall be tested and inspected as per MRTS70. **(HOLD POINT)**

Backfilling shall comply with MRTS03 and MRTS04, or as approved by the Superintendent

**WITNESS POINT**

**h) Installation of uPVC pipe and associated fittings as shown on the Project Drawings**

The installation of uPVC drainage pipes shall be carried out as per design drawings or project documentation in accordance with MRTS03. Within the verge area uPVC pipes and fittings shall not be used

The contractor shall survey the alignment, grades, and levels of the installed pipes for verification to the project drawings or documentation and submit to the Superintendent for approval to backfill.

**HOLD POINT**

**i) Allotment pit connections as per MRC Standard drawing A3-00870 (as required)**

Where connection to an existing pit internally within the property (easement) is required, this shall be carried out as required by MRC Standard Drawing A3-00870. Once excavated if it is found no stubs exist or only one exists the contractor shall install a second stub and cap for future connection.

**WITNESS POINT**

Breaking into the pit shall be carried out via core drilling and sealing the stub/s with an epoxy sealant.



**j) Backfill, compaction and testing, turfing, and clean up as per project specifications.**

Any disturbed areas are to be backfilled as per MRTS03 and MRTS04 including any testing and inspections unless otherwise approved by the Superintendent. All disturbed areas are to be turfed and maintained until the turf is established. The site is to be cleaned of all debris, excavated material, and construction materials.

**WITNESS POINT**

**8100.7 Post Construction**

**a) Collection and submission of all As Constructed data including QA data requirements.**

The contractor shall verify all stormwater connections have been constructed as approved. Variations require a marked up plan be submitted with the Council Superintendents approval of the variation.

Any works performed as part of a commercial or industrial development shall submit As Constructed detail and documentation as required by MRC D20 - *Drawings and Documentation* for submission and approval.

**HOLD POINT**

Format of submitted “As Constructed” documentation shall be compliant with MRC Supplementary Specification 8919.

**b) Final Inspection of Works**

At the completion of works and after As Constructed documentation has been submitted and approved an inspection of the works is to be carried out between the contractor and the Superintendent.

**HOLD POINT**

**8100.8 Measurement and Payment**

The length of pipe under this item shall be measured as the distance along the centre line of the pipe where it is being installed. Any works required for the connection of roofwater or property drainage to kerb or drainage components shall be deemed to be included in special Item 8102.

Provision for these works shall be included in the scheduled unit rate for the items show in Clause 8100.3 of this Supplementary Specification and Annexure. No separate payment will be made for the works operations specified within this Supplementary specification or it’s annexure.

Version Control:

Version	Description	Reviewed / Endorsed	Date
1.0	Original issue	MRC	09.08.12
1.1	Specification review	MRC	20.11.2020
2.0	Specification Review	C. Sultana	15.06.2024