

Supplementary Specification
MRC Supplementary Specification
8111 uPVC Stormwater Pits

Revision 3.0

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8111.1 Introduction

This supplementary specification refers to the supply and installation of proprietary uPVC pits for the purposes of stormwater drainage, including where short stubs are required to connect drainage pipes to the system.

8111.1.1 Definition of Terms

Term	Definition
uPVC	For the purposes of this Specification a rigid thermoplastic material manufactured without plasticisers, used in stormwater drainage systems conforming to AS/NZS 1260.
Minor Works Permit	Approved permit issued by Council which details conditions of works for the installation of stormwater to Council's assets.

8111.2 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 Embankment Slope Protections";
- MRS04 and MRTS04 "Earthworks General"
- 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";
- AS/NZS 1254 "PVC-u Pipes and Fittings for Stormwater and Surface Water Applications";
- MRC Standard Drawing A3-00870 "Details of Allotment Gradings and Allotment Drainage"; and
- the Project Drawings and Specifications

8111.3 Description of Work Items

Work items incorporated by this supplementary specification are identified in Section 8111.6 and 8111.7 with individual activities/tasks for measurement and payment sourced from the Bill of Quantities and listed in MRC Supplementary Specification Annexure 8111_1 uPVC Stormwater Pits Section 1

8111.4 Quality Systems Requirements

The contractor shall prepare a quality plan reflective of the requirements of this Specification and comply with MRTS 50. The quality plan is to be submitted to the Superintendent for approval four (4) weeks prior to site works commencing.

MILESTONE

8111.4.1 Std Test Methods (Testing Regime)

The following minimum testing regime applies to this specification:



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

Civil works activities associated with the installation of uPVC stormwater pits shall be tested as per the relevant MRTS specifications MRTS03, MRTS04, and MRTS70, unless otherwise approved by the Superintendent.

8111.4.2 Hold Points, Witness Points and Milestones

Milestone

Milestone is a point within a project which marks the start or completion of an activity or compliance requirement. Generally associated with provision of records or data for verification with the projects contract and specification.

Hold Points

Hold points are noted on various Sections of this Specification.

“HOLD POINTS” are critical stages of the work, which require inspection by the Superintendent (or his nominated representative) and beyond which the Contractor will not be permitted to proceed without the written approval of the Superintendent.

A written “request for inspection” form shall be submitted to the Superintendent at least 48 hours prior to reaching the relevant “HOLD POINT”. One copy shall be submitted for each inspection. The signed copy will be handed back to the Contractor after the inspection to sanction work to proceed to the next stage or noting what work has to be done prior to re-inspection. This may involve inspection of the work by the Superintendent or approval of test results forwarded to the Superintendent by the Contractor.

Witness Points

Witness points are also important stages of work. However, these are not necessarily critical work stages as defined by the hold points. Witness points are where the Superintendent (or his/her nominated representative) may review, witness, and inspect the work. The activities, however, may continue to proceed.

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

Activity	Inspection Type	When	Reference
Construction Procedure and other submissions as required by Clause 8107.5	Milestone	4 Weeks prior to works commencing	8111.5
Inspection of delivered items	Hold Point	At delivery time for each item.	8111.6.2
Site layout alignment and location of pit	Hold Point	Prior to excavation commencing	8111.6.3
Location of stormwater pit	Witness Point	Prior to excavation commencing.	8111.6.4
Base excavation floor (including unsuitable material)	Hold Point	At completion of excavation and compacting	8111.6.6
Bedding for stormwater pit	Hold Point	Prior to installing pit	8111.6.7
Stormwater pit installed,	Witness Point	Prior to commencing backfilling operations	8111.6.8



Pipes/stubs installed through walls, concrete laid to internal base	Witness Point	At completion of seating and stabilising installed pit	8111.6.9
Concrete laid external to pit around pipe inlets and outlets	Witness Point	Prior to backfilling of pit	8111.6.10
Backfilling of pit carried out as per specification	Witness Point	During backfilling activities	8111.6.10
Pit surround at design finished surface level	Hold Point	After completion of backfilling and finishing off pit works	8111.6.11
Clean up of site	Witness Point	Prior to "On Maintenance" inspection being requested	8111.6.12
Works "As Constructed" documentation	Hold Point	4 weeks prior to "On Maintenance" being requested.	8111.7.1
Maintenance and removal of ESC measures	Hold Point	During and after site has been revegetated.	8111.7.2

8111.4.3 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.
- Finished pit top level shall be as required by MRTS 03 for kerb, +/- 10mm's.

Tolerances specific to the project are detailed on the design drawings and are included in Clause 2 of MRC Supplementary Specification Annexure 8111_1 uPVC Stormwater Pits.

8111.5 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)
- Traffic Management Plan and TGS's (as required)
- Workplace Health and Safety Plan including specific to the work and site/s,
- Quality Plan outlining requirements of 8901.4 as a minimum, compliant with MRTS 50,
- Minor Works Approval (as required).

MILESTONE

Other preliminary requirements unique to the project will be listed in the MRC Supplementary Specification Annexure 8111_1 uPVC Stormwater Pits

MILESTONE

8111.5.1 Materials

The uPVC Stormwater pits are a proprietary item and must comply with Council's requirements unless otherwise approved by the Superintendent. The dimensions and sizing of the pit shall be as required by



the design drawings and documents, a minimum of 50mm's from the external wall of the pipe to the internal pit corner/s shall be provided. No pipes shall come through the corner of a pit.

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

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 8111_1 uPVC Stormwater Pits Section 3 and shall be the point of supply.

Where existing uPVC stormwater pit/s is to be salvaged unless otherwise instructed by the Superintendent MRC Supplementary Specification Annexure 8111_1 uPVC Stormwater Pits 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

8111.5.2 Ownership of Stormwater Connection and Pipes

Where the pit is for the purpose of collecting and discharging stormwater runoff to the Council drainage system of a legal point of discharge the pit (and pipes) 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.

8111.5.3 Contractor's Personnel

Personnel, sub-contractors and suppliers utilised in the demolition/removal, construction and installation of access culverts shall be experience in the processes and activities required to carry out the works.

The Contractor shall provide documented evidence for the Superintendent's approval to demonstrate the experience, qualification, skills and training of proposed personnel, sub-contractors a minimum 4 weeks prior to works commencing.

MILESTONE

8111.5.4 Environmental Plan

The Contractors Environmental Plan shall be reflective of the requirements of MRTS51 and MRS51 and be submitted for approval by the Superintendent 4 weeks prior to site works commencing.

MILESTONE

8111.5.4.1 General

The Contractor shall remove all rubbish, debris, disused materials etc., from the Site. The Site shall be maintained in a clean state.

The Contractor shall be responsible for ensuring no debris is deposited on public or private rights of way because of the works outside of the immediate work area, including any deposits arising from the movement of plant and vehicles.

The Contractor shall keep pollution in the vicinity of the Works within reasonable minimum limits noting that this clause does not exempt the Contractor from complying with the limits controlled or required by legislation.

The Contractor shall collect, transport and dispose of waste at a registered waste facility.



8111.5.5 Permits for Work

The Contractor must ensure applicable permits for the various work activities are completed and approval issued by the statutory body for those works, all requirements for submission, completion, and obtaining permits shall be at the Contractors cost.

8111.5.6 General Workplace Health and Safety Requirements

As a condition of this document, it is required that the Contractor and its workers (including all sub-contractors etc., and their workers) engaged to perform a service or work on site must at all times ensure (so far as reasonably practicable) the health and safety of all persons who are, or may be, affected by work under this Supplementary Specification or the services provided.

8111.5.6.1 Legislative Compliance

Without limiting the Contractor's other obligations, the Contractor must comply with all Acts, Regulations, Standards and Codes of Practice about work health and safety matters that are applicable to the scope of work undertaken or services being provided.

8111.5.6.2 Council Work Health Safety Contractor Requirements

As a minimum, the Contractor must ensure they and their workers (including all Contractor's sub-contractors etc.) comply with the following work health and safety requirements:

- Undertake Council Contractor and site inductions prior to commencing work.
- Ensure all workers are competent, and provide proof of competencies, licenses, and training on request.
- Have an approved safe system of work (including risk assessment) for the task and ensure the work is completed according to this safe system of work.
- Provide adequate supervision for all high-risk construction tasks.
- All incidents and near misses are to be reported to their Council representative within 60 minutes.
- Participate in Contractor pre-start meetings, safety interactions, site meetings and site inspections.
- Review information provided by Council such as site-specific hazards, risks and interaction issues and implement controls to, so far as reasonably practicable, eliminate, or if that is not possible, mitigate the risk.
- Supply safe plant and equipment with pre-start checks, maintenance/ service records and manufacturer's manual.
- For all hazardous chemicals, ensure current Safety Data Sheets (SDS) are available and that appropriate controls (including as required under SDS requirements) are implemented.
- Comply with Council Safety, Drug and Alcohol and Fitness for Work policies.
- Be familiar with applicable site emergency procedures, closest emergency assembly point and sign in and out of site registers where required.
- Compliance with any reasonable direction given by Council relating to work health and safety.

8111.5.6.3 Safe Systems of Work / Risk Assessment

The Contractor must prepare and submit a safe method of work (risk assessment) and relevant controls prior to commencement of work.

The completed risk assessment is to be provided to the Superintendent for review and approval prior to works commencing. Safe Work Method Statements (SWMS) are required for all high-risk construction activities (e.g. working on or adjacent to a road) and Job Safety Analysis (JSA) or similar risk assessments



are required for other tasks. The risk assessment (whether SWMS, JSA or other) must be reviewed and signed by the workers prior to undertaking the work.

MILESTONE

The Contractor shall implement a Safety Management System (SMS) that includes sections addressing the project scope.

8111.5.7 Works Procedure

The Contractor shall prepare a works procedure for all activities required under this specification which also address WH&S specific requirements for the site, this shall include but not be limited to the following;

- I. Site setup, including traffic management and public consultation,
- II. Identification of underground utilities which impact the works and the proposed treatment to address the impacts,
- III. Staging of works,
- IV. Traffic management and TGS's, as required,
- V. Individual activity construction procedures, earthworks, drainage, bedding, laying, connection to drainage system, concrete works, testing and inspections as required,
- VI. Timeline of works,
- VII. Collection of "As Constructed" data.

The works procedure shall be submitted to the Superintendent for approval four (4) weeks prior to site works commencing.

MILESTONE

8111.6 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.

uPVC stormwater pits shall be installed in the locations shown on the Project Drawings, and in accordance with the details shown on the Project Drawings and manufacturer's specifications.

Where the pit/s are to be installed in conjunction with a stormwater pipe system MRC Supplementary Specifications 8100 and 8102 shall be read in conjunction and also be complied with.

Specific construction requirements associated with these works is detailed in MRC Supplementary Specification Annexure 8111_1 uPVC Pipes and Fittings Section 5.

8111.6.1 Work Operations

Work operations incorporated in this item are those included in Clause 2.1.5 of MRS01 "Introduction to Standard Specifications" and the following work scope activities and associated sub activities;

8111.6.1.1 Work Scope

The scope of works (including all associated sub activities) covered under this specification is as follows:

- Procure, supply, and store all materials as required;
- Site Layout marked out and approval by Superintendent;



- As required, install and maintain ESC measures in accordance with approved Environmental Plan
- Carry out testing and inspections as required by the approved Quality Plan;
- Removal for re-use and/or demolition of existing pipes, pits/manholes, kerb adaptors, and fittings (as required);
- Earthworks (including stripping/clearing and grubbing) to site;
- Drainage works to the site as required;
- Embedment (bedding, haunch, overlay) and backfill to pit/s and stubs;
- Installation of pits and stubs (as required);
- Setting up of reinforcing and formwork;
- Pouring, finishing, stripping of formwork, and curing of concrete;
- Clean up of site
- Collection of “As Constructed” data and submission for approval.

8111.6.2 Supply and Delivery of Pit and Pit Cover

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

All materials are to be stored as required by the manufacturer’s specification and requirements. All materials are to be inspected when delivered to site prior to use for defects and also for compliance to the relevant specification requirement. All items which are damaged are not to be used and are to be returned to the supplier.

HOLD POINT

8111.6.3 Site Layout with Superintendent

The final location of the works is to be marked out on site and shall be inspected and approved by the Superintendent prior to excavation commencing. This includes any associated components of the proposed drainage system.

HOLD POINT

8111.6.4 Carrying Out Excavation to Design Depth and Alignment

Excavations for the stormwater pits are to be carried out in accordance with design drawings or development approvals, where there is a lack of detail the manufacturers specification and installation guidelines shall apply.

Excavation of material to level and grade as per design drawings, vertical tolerances shall not exceed +/- 10mm, horizontal tolerances +/- 100mm

Bed/Subgrade is to be inspected for areas of unsuitable material

HOLD POINT

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



8111.6.5 Utilising or Disposing of Excavated Material

Excess excavated materials shall be disposed of by the contractor or utilised as per Superintendents instructions. Material stockpiled shall ensure that all Environmental ESC measures are in place and maintained.

8111.6.6 Conformance of Bottom of Excavation, Inclusive of Testing (as required)

All loose material is to be removed from the bottom of the excavation.

Excavated floor preparation is to be carried out as per MRTS03 and MRTS04 and is to be presented for inspection by the Superintendent with inspections, geotechnical testing and geometric requirements applying unless otherwise stated in MRC Supplementary Specification Annexure 8111_1 uPVC Stormwater Pits.

HOLD POINT

8111.6.7 Supply and Installation of Bedding Materials

The contractor shall supply, install, and compact bedding material as required by the design drawings in accordance with MRTS03.

The bedding shall be finished as per the design levels with the pit to be seated firmly on the compacted bedding and the upper surface of the grate or pit cover being at the design finished surface level.

HOLD POINT

Any divergence of the pit top from the design finished surface level will require the pit to be removed and the bedding reshaped so the pit can be installed to the correct levels as per the design drawings. Vertical tolerance for the pit top shall be equal to the required tolerances kerb and channel, +/- 10mms in accordance with Clause 8111.4.3.

WITNESS POINT

8111.6.8 Installation of Pit and Pit Cover

Prior to seating the pit in place, the design levels for the inlet and outlet pipe/stubs shall be marked and the pit walls cut.

The pit shall be installed and haunched to stabilise while the pipes and/or stubs are inserted and sealed.

WITNESS POINT

8111.6.9 Installation of Stormwater Pipe Inlets and Outlets to Pit

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 penetrating pipe/stub. All connections (inlets and outlets) shall be via stubs (generally 600mm long) to ensure connection to drainage systems without the need for the pit to be excavated.

The stormwater pipes/stubs shall be fitted through the pit wall and be sealed with a suitable silicon-based adhesive/sealant. The use of flanges to support the pipe through the pit wall shall be used, these are to be installed as per the manufacturer's requirements.

Where the pit is designed to take roof water or an internal property stormwater system two (2) stubs shall be installed and capped until such time as required to be connected as detailed in MRC Standard drawing A3-00870. The openings in the pit shall be core drill and sealed with a suitable silicon-based adhesive/sealant.

Concrete is to be laid on the base of the inside of the pit up to the invert of the lowest stormwater pipe, where there is minimal grade between the pipes the concrete is to be shaped invert to invert and benched slightly to form a channel through the pit.



After concreting the inside the grate/lid shall be fixed in place to ensure the pit retains its shape during backfilling. Larger pits will be required to be braced on the inside.

WITNESS POINT

8111.6.10 Backfill and Compact to FSL.

Prior to backfilling mass concrete shall be poured around the external pipe entries outside the pit walls to provide support to pipes entering the Pit walls.

Concrete shall be left to harden and gain strength prior to backfilling the pit. The contractor shall supply, install, and compact the backfill material as required by the design drawings in accordance with MRTS03 and MRTS04.

WITNESS POINT

The backfill shall be finished at the levels required as per the design drawings and any concrete collar or pavement/paving which is required to be installed.

8111.6.11 Pit Surround Installation

The finished surface surrounding the pit shall be finished as required by the design drawings. Where required the pit surround (generally reinforced concrete) shall be installed flush with the level of the pit lid/grate ensuring the proposed drainage lines are compliant with the design and surface stormwater flows are directed to the pit.

HOLD POINT

8111.6.12 Clean Up of Site.

All disturbed areas are to be turfed and maintained until the turf is established in compliance with MRC Supplementary Specifications 8300 and 8317. The site is to be cleaned of all debris, excavated material, and construction materials.

WITNESS POINT

8111.7 Post construction

Items which close out the project and readies the project for the "On Maintenance" inspection. All items below **MUST** be complied with prior to the Contractor requesting an "On Maintenance" inspection and/or as required during the Defects/Liability (On Maintenance) period.

8111.7.1 Collection and Submission of All As Constructed Data.

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.

The Contractor is to supply and submit "As Constructed" documentation as required by *MRC D20 - Drawings and Documentation* for approval by the Superintendent 4 weeks prior to requesting an "On Maintenance" inspection.

HOLD POINT

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



8111.7.2 Erosion and Sediment Control Plan

ESC measures are to be kept in place and maintained until the Superintendent approves of the removal of such measures in accordance with Contractors approved ESC Plan.

HOLD POINT

8111.8 Measurement and Payment

Provision for these works shall be included in the scheduled unit rate for the items show in Clause 8111.3 of this Supplementary Specification and Annexure. No separate payment will be made for the works specified within this Supplementary specification or it's annexure.

Version Control:

Version	Description	Reviewed / Endorsed	Date
1.0	Previous Version	MRC	09.02.22
2.0	Specification Review	C. Sultana	02.06.2024
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