

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios	
Building Water Distribution System – PPR Pipes and Accessories	Document No.: ARP/DEE/014
	Rev. No. : A
	Date : 2021/03/31
	Page No. : 1 of 4

1 Reference standard

Regulations No. 46/96/M	Regulamento de Águas e de Drenagem de Águas Residuais de Macau (RADARM)
AS/NZS 4020:2005	Testing of products for use in contact with drinking water
BS 6920-1:2014	Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water. Specification
GB 5749:2006	Standards for Drinking Water Quality
GB/T 17219:1998	Standard for safety evaluation of equipment and protective materials in drinking water system
GB/T 50349:2005	Engineering technical code of water supply polypropylene pipeline for buildings
GB/T 18742-1:2017	Polypropylene (PP) piping systems for hot and cold water installations - Part 1: General
GB/T 18742-2:2017	Polypropylene(PP) piping systems for hot and cold water installations - Part 2: Pipes
GB/T 18742-3:2017	Polypropylene(PP) piping systems for hot and cold water installations - Part 3: Fittings
ISO 15874-1:2013	Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 1: General
ISO 15874-2:2013+A1:2018	Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 2: Pipes — Amendment 1
ISO 15874-3:2013	Plastics piping systems for hot and cold water installations — Polypropylene (PP) — Part 3: Fittings

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios	
Building Water Distribution System – PPR Pipes and Accessories	Document No.: ARP/DEE/014
	Rev. No. : A
	Date : 2021/03/31
	Page No. : 2 of 4

2 Approval procedures

All materials (pipes, fittings/accessories, hose clam, etc) are required to be approved in advance, and the following documents should be submitted for the approval:

- Products specification
- Test reports or relevant certification documents
- Method statements
- Depending on the actual situation, inspections on the factory will be required to verify the technical and quality competence for the project

2.1 Product specification

1. Product specification should include at least but not limited to the following content :

Items	Content
General Parameters	Reference standards for product manufacture, dimensions, diameter, wall thickness, colour, transmittance, etc
Mechanical Properties	Product grade, longitudinal reversion rate, impact resistance , etc
Water-tightness Properties	Maximum working pressure, etc
Chemical Composition	Thermal stability, etc
Construction Guidelines	Storage, transportation, installation method and equipment required for installation, etc

2. Unless otherwise specified in the project design, the submitted materials should comply with the requirements of the reference standard.

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios	
Building Water Distribution System – PPR Pipes and Accessories	Document No.: ARP/DEE/014
	Rev. No. : A
	Date : 2021/03/31
	Page No. : 3 of 4

2.2 Test reports or related recognized documents

1. Test reports or certification documents should be issued by third-party organization.
2. The submitted test reports or certification documents should be valid. If the relevant documents have not specified the effective date, it is advisable to submit the documents issued in recent three years.
3. The test content of the test reports should include but not limited to the following :

Items	Content
General Parameters	Marking, diameter, wall thickness, colour, transmittance, etc
Mechanical Properties	Longitudinal reversion, impact resistance, etc
Water-tightness Properties	Pressure tests, etc
Chemical Composition	Thermal stability test, etc

In general, the reference standards of the test reports should be consistent with the reference standards for product manufacture.

4. If the installed pipelines are used for drinking water, valid certification documents that can be used for drinking water should be submitted for all materials of the pipelines (such as pipes, etc.) to ensure that the materials comply with AS/NZS 4020, GB/T 17219, BS 6920 (only for non-metal) or other equivalent standards. If the relevant documents have not specified the effective date, it is advisable to submit the documents issued in recent three years.

2.3 Method statements

The method statements should comply with the requirements of RADARM and the designer, and should be followed the construction guidelines of the product manufacturers. The contents of the method statements should state the transportation, storage, installation and cleaning, etc, of the materials.

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios	
Building Water Distribution System – PPR Pipes and Accessories	Document No.: ARP/DEE/014
	Rev. No. : A
	Date : 2021/03/31
	Page No. : 4 of 4

3 Reception procedure

3.1 Documents to be submitted

The mill certificates issued by the material manufacturers and the delivery note issued by the suppliers should be submitted.

The materials delivered on-site should be good in appearance and clearly marked. The content should include: brand, reference standard, dimension, grade, etc.

3.2 Pipe tests

Test items, test frequency and acceptance criteria are shown in *Table 1*.

Table 1

Test Items	Test Frequency	Acceptance Criteria
Color and appearance	Each batch is 100 tons; Batch: pipes of the same size, same raw material, same process and same specification	According to product standard
Dimenson		
Longituinal reversion		
Impact resistance		
Transmittance		

3.3 Site tests after installation

After installation, water-tightness tests should be performed in accordance with Article 191 of RADARM in all pipe sections.

3.4 Water quality testing

After flushing of the main water supply system, water quality testing should be performed in accordance with ARP/DEE/018.