

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios

Building Drainage System – Cast Iron / Ductile Iron Pipes and Accessories

Document no. :	ARP/DEE/016
Rev. no. :	A
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1 Reference standards

Regulations No. 46/96/M	Regulamento de Águas e de Drenagem de Águas Residuais de Macau (RADARM)
BS EN 877:1999+A1:2006	Cast iron pipes and fittings, their joints and accessories for the evacuation of water from buildings. Requirements, test methods and quality assurance
GB/T 12772-2016	Cast iron pipes, fittings and accessories with flexible joint sewerage for drainage
BS EN 598:2007+A1:2009	Ductile iron pipes, fittings, accessories and their joints for sewerage applications. Requirements and test methods
GB/T 26081-2010	Ductile iron pipes, fittings and accessories for sewage applications

2 Approval procedures

All materials (pipes, fittings/accessories, couplings, 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

2.1 Product specification

1. Include product dimensions, mechanical properties, water-tightness properties, chemical composition, coatings' composition and thickness of external layer and internal lining, construction guidelines, etc.
2. Unless otherwise specified in the engineering design, the submitted materials should comply with the requirements of the reference specification.

2.2 Test reports or related recognized documents

1. Test reports or certification documents must be issued by third-party organization.

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- The submitted test reports or certification documents should be valid. If the relevant documents have not specified the valid date, it is advisable to submit the documents issued in recent three years.
- The test contents of various components should include test items listed in Table 1.

Table 1

Type	Component	Test item
Cast iron pipeline	Pipes, fittings/accessories, etc	BS EN 877:1999+A1:2006 (Table D.1 、 Table 10)
Ductile iron pipeline	Pipes, fittings/accessories, etc	BS EN 598:2007+A1:2009 (Table 12)

2.3 Method statements

The method statements should comply with the requirements of RADARM and the designer, and should follow the construction guidelines of the product manufacturers. The contents of the method statements must state the transportation, preservation, installation and cleaning, etc, of the materials. If welding is included in the method statements, the information of solders and the welding methods must be provided.

3 Reception procedure

3.1 Documents to be submitted

The mill certificates issued by the material manufacturers and the delivery notes issued by the suppliers must be submitted.

3.2 Site tests after installation

- For gravity drainage pipelines, water-tightness tests should be performed in accordance with Article 270b) of RADARM after installation.
- For pressure drainage pipelines, water-tightness tests should be performed in accordance with Annex. 8-F of RADARM after installation