

Approval & Reception Procedure

DEE – Departamento de Estruturas e Edifícios

Building Water Distribution System – Ductile Iron Pipes and Accessories

Document no. :	ARP/DEE/012
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)
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
BS EN 545:2010	Ductile iron pipes, fittings, accessories and their joints for water pipelines. Requirements and test methods
GB/T 13295-2013	Ductile iron pipes, fittings and accessories for water or gas 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, 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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2. 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.
3. The test contents of test reports include dimensions, mechanical properties, water-tightness properties, analysis of external coating and internal lining.
4. If the installed pipelines are used for drinking water, all materials of the pipelines are required to submit valid certification documents that can be used for drinking water. 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 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

1. After installation, water-tightness tests should be performed in accordance with Article 191 of RADARM in all pipe sections.
2. After flushing of the main water supply system, under the permission of the owner, water sampling tests should be performed.