

Specification for

**Bitumen seal coatings on
cement mortar linings in
ductile iron pipes and fittings**

ICS 75.140

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PSE/10, Iron pipes and fittings, upon which the following bodies were represented:

- Adhesive Tape Manufacturers' Association
- British Foundry Association
- Ductile Iron Pipe Committee
- Institute of British Foundrymen
- Institution of Mechanical Engineers
- Institution of Water and Environmental Management
- Pipeline Protection Association
- Society of British Water Industries
- Water Companies Association
- Water Research Centre
- Water Services Association of England and Wales

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1997

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The following BSI references relate to the work on this standard:
Committee reference PSE/10
Draft for comment 93/712099 DC

ISBN 0 580 27195 1

Amendments issued since publication

Amd. No.	Date	Text affected

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Foreword

This British Standard has been prepared by Technical Committee PSE/10. It has been issued to satisfy the requirements of both users and suppliers for a standard specification for bitumen seal coats on cement mortar linings in ductile iron pipes and fittings.

WARNING. This specification calls for the use of substances and/or procedures that may be injurious to health, if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Product certification. Users of this British Standard are advised to consider the desirability of third party certification of product conformity with this British Standard based on testing and continuing product surveillance which may be coupled with assessment of a supplier's quality systems against the appropriate Part of BS EN ISO 9000.

Enquiries as to the availability of third party certification schemes are forwarded by BSI to the Association of Certification Bodies. If a third party certification scheme does not already exist, users should consider approaching an appropriate body from the list of Association members.

Attention is drawn to the following statutory regulations:

Water Supply (Water Quality) Regulations 1989 as amended by the Water Supply (Water Quality) (Amendment) Regulations 1991.

Water Supply (Water Quality) (Scotland) Regulations 1990.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

1 Scope

This British Standard specifies requirements for bitumen seal coatings, factory applied to the surface of cement mortar linings, which in turn are factory applied to the interior of ferrous pipes and fittings; it is not intended to exclude the use and development of suitable alternatives.

The intended purpose of the bitumen seal coat is to prevent leaching of lime ($\text{Ca}(\text{OH})_2$) and other hydroxides from the cement into the water supply, potentially causing an elevation of pH in excess of the prescribed concentration or value of 9.5, as laid down by the Water Supply (Water Quality) Regulations 1989 as amended by the Water Supply (Water Quality) (Amendment) Regulations 1991[1]; and the Water Supply (Water Quality)(Scotland) Regulations 1990[2].

This standard is intended to cover the following service application areas:

- factory applied bitumen seal coatings for cement mortar lined ductile iron pipes and fittings;
- potable water applications.

This standard gives requirements for routine testing for visual appearance, coating thickness, adhesion and odour; it also gives type test requirements for water quality effects (pH and alkalinity), durability, and abrasion resistance.

The test methods referred to in this standard are either specified in British Standard or other appropriate national and/or international standards, or in the annexes of this standard.

2 References

2.1 Normative references

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back page, but reference should be made to the latest editions.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1 batch

Pipes produced in a discrete production run.

3.2 cement mortar lining

A cementitious lining internally applied to ductile iron pipes and fittings. (See BS EN 545 : 1995.)

3.3 ductile iron

A cast iron in which graphite is present substantially in spheroidal form.

3.4 fitting

Casting other than a pipe which allows pipeline deviation, change of direction or bore. In addition flanged-socket pieces, flanged-spigot pieces and collars are also classified as fittings.

3.5 manufacturer

The producer of the bitumen seal coated, cement mortar lined pipe or fitting.

3.6 polyethylene terephthalate polyester film

A polyester film of consistent thickness and density used to measure coating thicknesses.

3.7 pipe

A casting of uniform bore, straight in axis, having either spigot, socket, flange or plain ends except for flanged socket pieces, flanged spigot pieces and collars, which are classified as fittings.

3.8 product

The bitumen seal coated, cement mortar lined iron pipe or fitting.

3.9 seal coat

A bitumen coating applied over a cement mortar lining to provide a barrier between the lining and the contents of the pipeline.

3.10 test sample

A seal coated, cement mortar lined pipe taken from a batch.

3.11 type test

Proof of design test which is done once and only repeated after change of design.