

**SPECIFICATIONS FOR
LEAD AND LEAD
ALLOY PIPES
FOR OTHER THAN
CHEMICAL PURPOSES**

BS 602, 1085 : 1970



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The Institution desires to call attention to the fact that these British Standards do not purport to include all the necessary provisions of a contract.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook. The BS Yearbook may be consulted in many public libraries and similar institutions.

These standards make reference to the following British Standards:

BS 3908. Methods for the sampling and analysis of lead and lead alloys.

CP 310. Water supply.

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on these standards:
Committee references NFE/22, NFE/22/2 Draft for comment 70/22010

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BS 1085 LEAD-SILVER-COPPER ALLOY PIPES

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CO-OPERATING ORGANIZATIONS

The Non-Ferrous Metals Industry Standards Committee under whose supervision these British Standards were prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Aluminium Federation
 Association of Bronze and Brass Founders
 Association of Consulting Engineers
 Board of Trade
 British Bronze and Brass Ingot Manufacturers' Association
 *British Lead Manufacturers' Association
 British Non-ferrous Metals Federation
 British Non-ferrous Metals Federation—High Conductivity Copper Group
 *British Non-ferrous Metals Research Association
 Copper Development Association
 Crown Agents for Oversea Governments and Administrations
 *Electric Cable Makers' Confederation
 Institute of British Foundrymen
 Institute of Metals
 Institution of Mechanical Engineers (Automobile Division)
 Institution of Mining and Metallurgy
 Institution of Production Engineers
 Institution of Structural Engineers
 *Lead Development Association
 Light Metal Founders' Association
 London Metal Exchange
 Magnesium Industry Council
 Ministry of Defence, Army Department
 Ministry of Defence, Navy Department
 National Brassfoundry Association
 Non-ferrous Metal Stockists
 *Post Office
 *Royal Institute of British Architects
 Society of Motor Manufacturers and Traders Ltd.
 Tin Research Institute
 Zinc Development Association
 Individual manufacturers

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the sub-committee entrusted with the preparation of these British Standards:

Association of Public Health Inspectors
 British Waterworks Association
 Gas Council
 Greater London Council
 Institute of Plumbing
 Institution of Municipal Engineers
 Royal Institution of Chartered Surveyors

BS 602, 1085 : 1970

BRITISH STANDARD SPECIFICATIONS FOR LEAD AND LEAD ALLOY PIPES FOR OTHER THAN CHEMICAL PURPOSES

FOREWORD

British Standard 602, which was first published in 1935, and British Standard 1085, first published in 1943, were in 1956 first published together as BS 602, 1085 under the authority of the Non-Ferrous Metals Industry Standards Committee.

In this present revision the British Standards still retain their identity but those clauses which are common to both specifications have been grouped in Section 1 and clauses specific to BS 602 or BS 1085 have been grouped in separate Sections 2.

All dimensions in this edition are quoted in metric units and the opportunity has also been taken to review the requirements of both standards in the light of changes of usage and, therefore, of production since 1956, in line with the principal objectives of the British Standards Institution '... to co-ordinate the efforts of producers and users for the improvement, standardization and simplification of engineering and industrial materials; to simplify production and distribution; to eliminate the waste of time and material involved in the production of an unnecessary variety of patterns and sizes of articles for one and the same purpose...'. The number of sizes specified for all applications has, therefore, been reduced and the complete table of standard bores and wall thicknesses is given in Appendix A. A code number has been given to each standard size and, in order to make smoother the transition period, for each size the nearest equivalent size from the earlier specifications has also been quoted.

The method of specifying tolerances has also been brought more into line with that specified in British Standards for pipes in other materials, namely the previous practice of specifying a nominal bore and weight per yard together with limits on eccentricity is replaced by specifying a nominal bore with an appropriate tolerance; a nominal wall thickness with an appropriate tolerance replaces the earlier tolerance on weight.

In specifying these new tolerances adequate safeguards have been calculated so that even if the permitted tolerances are all in the minus direction the wall stress is still below the recommended maximum.

SPECIFICATIONS

1. GENERAL REQUIREMENTS APPLICABLE TO BS 602 AND BS 1085

1.1 SCOPE

These British Standards specify requirements for:

- (1) lead pipes in three different compositions (BS 602 Compositions Nos. I, II and III) in sizes up to and including 125 mm bore and
- (2) lead-silver-copper alloy pipes (BS 1085) in sizes up to and including 40 mm bore intended to be used for the applications listed below:
 - a.* service and distributing pipes to be laid underground*,
 - b.* service pipes to be fixed above ground*,
 - c.* cold water distributing pipes to be fixed above ground*,
 - d.* hot water distributing pipes to be fixed above ground*,
 - e.* soil, waste and soil-and-waste ventilating pipes and flushing and warning pipes,
 - f.* gas pipes in heavier and lighter weights.

A table of standard metric sizes is given in Appendix A and for each application minimum dimensions are specified in the appropriate table.

1.2 GENERAL

The pipes shall comply with the general requirements set out in the following clauses and with the specific requirements given in Section 2 for BS 602 or BS 1085 as appropriate.

1.3 FREEDOM FROM DEFECTS

The pipes shall be sound in all respects, free from laminations, flaws, pronounced extrusion marks or other harmful defects, and shall as far as practicable be cylindrical and smooth.

1.4 SELECTION OF TEST SAMPLES

When tests are specifically called for by the purchaser a sample 500 mm in length shall be selected from each consignment, and an additional sample or samples which in the aggregate shall not exceed 200 mm in length shall be selected for each 30 m of each size of pipe ordered.

* See BS Code of Practice CP 310, 'Water supply', for further information on the use of these pipes.

1.5 TURN PIN TEST

When required by 2.6 of Section 2, pipes shall be subjected to a turn pin test at ambient temperature under the conditions specified in 2.6 of Section 2 of BS 602 or BS 1085 as appropriate and shall be examined for cracking.

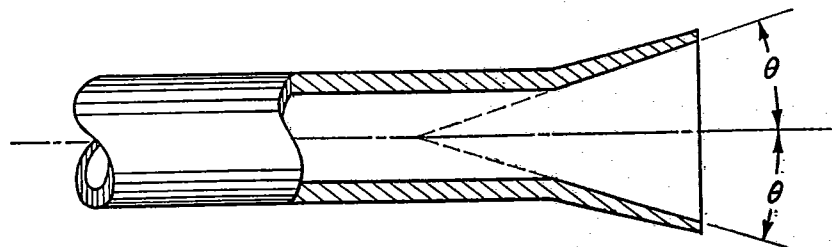


Fig. 1. Turn pin test

1.6 METALLOGRAPHIC EXAMINATION

When required a cross section of a pipe shall be smoothly polished and etched as described in Appendix B and shall be subjected to metallographic examination.

1.7 CERTIFICATE OF COMPLIANCE

The supplier shall if required certify that the pipes comply with the requirements of the appropriate standard.

1.8 INSPECTION

The purchaser shall notify the supplier when placing the order if it is his intention to inspect the pipes. The supplier shall afford the purchaser all reasonable facilities to satisfy himself that the pipes are in accordance with the appropriate standard. For this purpose the purchaser or his representative may, by prior arrangement, attend to inspect the pipes, select and identify the test samples for testing and witness the tests being made.

1.9 INDEPENDENT TEST

Should there be a dispute about the compliance of the pipes with the appropriate standard, the purchaser and the supplier shall have the right to have tests made by a mutually acceptable testing authority.

The results obtained by the independent testing authority shall be accepted as final. If the pipes do not comply with the appropriate standard, the cost of independent testing shall be borne by the supplier: if the material complies with the appropriate standard the cost shall be borne by the purchaser.

The methods of sampling and analysis shall be in accordance with BS 3908, 'Methods for the sampling and analysis of lead and lead alloys', where the appropriate method exists.