



BSI Standards Publication

Life cycle analysis and recycling of ductile iron pipes for water applications

National foreword

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A list of organizations represented on this committee can be obtained on request to its secretary.

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of ductile iron pipes for water
applications**

Coût du cycle de vie et recyclage des tuyaux en fonte ductile pour l'eau





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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 5, *Ferrous metal pipes and metallic fittings*, Subcommittee SC 2, *Cast iron pipes, fittings and their joints*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Life cycle analysis and recycling of ductile iron pipes for water applications

1 Scope

This document specifies the evaluation method of life cycle analysis of ductile iron pipes used for water applications as specified in ISO 2531 and ISO 16631.

Studies on economic and environmental impacts are important for utility decision-makers as they seek to balance budget concerns over immediate and long-term needs across acquisition, operations and maintenance, and planned end of life. For authorities and engineers designing pipeline systems, the life cycle cost analysis serves as a tool to study various scenarios to determine the right solution for site-specific conditions and community values, as well as to provide the necessary data to support those decisions.

Informative annexes are included in this document as a compilation of reference and consensual factors (pumping cost, leakage incident rate, etc.).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2531, *Ductile iron pipes, fittings, accessories and their joints for water applications*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 2531 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1 life cycle cost LCC

cost of an asset throughout its life cycle, while fulfilling the performance requirements

3.2 acquisition cost

all costs included in acquiring an asset by purchase/lease or construction procurement route, excluding costs during the occupation and use or end-of-life phases of the life cycle of the constructed asset

[SOURCE: ISO 15686-5:2017, 3.1.1]

3.3 operation cost

total running costs for water conveyance, including the pumping cost

Note 1 to entry: Operation costs could include rent, rates, insurances, energy and other environmental/regulatory inspection.