International Standard

ISO 10803

Design method for ductile iron pipes

Méthode de calcul des tuyaux en fonte ductile

Third edition
2024-11

Reference number
ISO 10803:2024(en)

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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Foreword

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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*.

This third edition cancels and replaces the second edition (ISO 10803:2011), which has been technically revised.

The main changes are as follows:

— considering various applicable standards in different countries for the traffic loading, common new formulae have been developed to enable the calculation of the pressure on pipe due to traffic loads for any country;

— the previous formula to calculate the pressure on pipe due to traffic loads and the earth loads has no provision to consider the effect of the settlement of side fill and the effect of native soil; the modified formula now takes into account the effect of settlement of soil in terms of deflection lag factor and the effect of native soil by considering the soil modulus of native soil;

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Design method for ductile iron pipes

1 Scope

This document specifies the design of ductile iron pipes used for conveying water, sewerage and other fluids

— with or without internal pressure, and

— with or without earth and traffic loading.

The design method defined in this document is applicable to ductile iron pipes conforming to ISO 2531, ISO 7186 and ISO 16631.

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*

ISO 7186, *Ductile iron products for sewerage applications*

ISO 7268, *Pipe components — Definition of nominal pressure*

ISO 10802, *Ductile iron pipelines — Hydrostatic testing after installation*

ISO 16631, *Ductile iron pipes, fittings, accessories and their joints compatible with plastic (PVC or PE) piping systems, for water applications and for plastic pipeline connections, repair and replacement*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7268 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
allowable operating pressure
PFA
P_{FA}
maximum internal pressure, excluding surge, that a component can safely withstand in permanent service

[SOURCE: ISO 2531:2009, 3.2, modified — The symbol P_{FA} has been added.]

3.2
maximum allowable operating pressure
PMA
P_{MA}
maximum internal pressure, including surge, that a component can safely withstand in service

[SOURCE: ISO 2531:2009, 3.17, modified — The symbol P_{MA} has been added.]

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