CSA Z245.1:22

Steel pipe

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Preface

This is the eleventh edition of CSA Z245.1, *Steel pipe*. It supersedes the previous editions published in 2018, 2014, 2007, 2002, 1998, 1995, 1993, 1990, 1986, and 1982.

This Standard covers the requirements for steel pipe intended to be used for transporting fluids as specified in CSA Z662.

The main changes to this edition are the following:

a) updated optional product ordering requirements (Clause 4.1.2);
b) revised requirements for product analysis retests (Clause 6.3.5);
c) revised requirements for Charpy V-notch impact tests (Clause 7.6, Table 7, Figure 4, and Annex C);
d) revised weld notch-toughness test requirements for electric-welded pipe (Clause 8.5.2);
e) updated requirements for visual inspection of defects (Clause 11.6.1);
f) updated required markings (Clauses 15.2 and 15.4);
g) updated purchase order requirements for elevated temperature service pipe (Clause 17.2);
h) new requirements for pipe for strain-based design (Clauses 18 and 19.7);
i) new hydrostatic test pressure reporting requirements (Clause 19.10); and
j) new requirements for records (Clause 19.11).

This Standard was prepared by the Subcommittee on Materials, under the jurisdiction of the Technical Committee on Petroleum and Natural Gas Industry Pipeline Systems and Materials and the Strategic Steering Committee on Petroleum and Natural Gas Industry Systems, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
   a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

   Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at standardsactivities.csa.ca.*
5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
   a) *Standard designation (number);*
   b) *relevant clause, table, and/or figure number;*
   c) *wording of the proposed change; and*
   d) *rationale for the change.*

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Steel pipe

1 Scope

1.1 General

This Standard covers seamless pipe, electric-welded pipe (flash-welded pipe continuously welded and low-frequency electric-welded pipe excluded), and submerged-arc-welded pipe primarily intended for use in oil or gas pipeline systems.

Notes:

1) *Flash-welded pipe is pipe manufactured by a process using electric-resistance heating to produce a simultaneous coalescence over the entire area of the abutting edges and the application of pressure for joining.*
2) *Low frequency is less than 70 kHz.*

1.2 Outside diameter, grade, and category

Note: *It is not intended that pipe be available in all combinations of size, grade, category, and manufacturing process. The individual pipe manufacturers should be consulted to ascertain the availability of specific pipe items.*

1.2.1 Outside diameter

This Standard covers pipe having specified outside diameters (ODs) from 21.3 to 2032 mm. The standard ODs are given in Table B.1.

1.2.2 Grade

For other than sour service, this Standard covers pipe from Grade 241 to Grade 825. For sour service, this Standard covers pipe from Grade 241 to Grade 483.

Note: *The standard grades are Grades 241, 290, 359, 386, 414, 448, 483, 550, 620, 690, and 825; however, intermediate grades may also be used.*

1.2.3 Category

This Standard covers pipe in the following categories:

a) Category I: pipe without requirements for proven pipe body notch-toughness properties;
b) Category II: pipe with requirements for proven pipe body notch-toughness properties in the form of energy absorption and fracture appearance; and
c) Category III: pipe with requirements for proven pipe body notch-toughness properties in the form of energy absorption.

1.3 Terminology

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.