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Z245.1-14

Steel pipe

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Preface

This is the ninth edition of CSA Z245.1, *Steel pipe.* It supersedes the previous editions published in 2007 (reaffirmed 2012), 2007, 2002, 1998, 1995, 1993, 1990, 1986, and 1982.

The main changes introduced in this edition are the following:

a) the definition, documentation, and qualification of coil/plate rolling practice for uniform and suitable mechanical properties have been revised;
b) the requirements for a quality program have been revised to explicitly include feedstock and accommodate other quality management systems at the discretion of the purchaser;
c) the requirements for tension specimen flattening procedure documentation have been revised;
d) the additional retest requirements for pipe Grades 414 and higher have been revised;
e) the mandatory requirements for Charpy V-notch impact tests of electric-welded pipe with a specified test temperature of less than -5 °C have been revised;
f) the min/max diameter criteria for outside diameter have been revised;
g) the requirements for the trim of the inside weld flash of electric-welded pipe have been revised;
h) the acceptance criteria for ultrasonic inspection of electric-welded production pipe in the dynamic mode have been revised;
i) the additional certification requirements to identify pipe and key sub-supplier manufacturers have been added; and
j) the summary of destructive testing requirements has been updated.

This Standard covers the requirements for steel pipe intended to be used for transporting fluids as specified in CAN/CSA Z662, *Oil and gas pipeline systems.*

In this 2014 edition, where a major change or addition to the previous edition of this Standard has been made, the clause, table, or figure affected is identified by the symbol delta (Δ) in the margin. Users of this Standard are advised that the change markers in the text are not intended to be all-inclusive and are provided as a convenience only; such markers cannot constitute a comprehensive guide to the revisions made to this Standard. Care must therefore be taken not to rely on the change markers to determine the current requirements of this Standard. As always, users of this Standard must consider the entire Standard.

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.*
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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 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 1 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 from 21.3 to 2032 mm. The standard outside diameters 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.

