

Steel pipe



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Contents

Technical Committee on Petroleum and Natural Gas Industry Pipeline Systems and Materials 6

Subcommittee on Materials 11

Preface 14

1 Scope 15

- 1.1 General 15
- 1.2 Outside diameter, grade, and category 15
 - 1.2.1 Outside diameter 15
 - 1.2.2 Grade 15
 - 1.2.3 Category 15
- 1.3 Terminology 15

2 Reference publications 16

3 Definitions 18

4 General requirements 20

- 4.1 Product ordering requirements 20
 - 4.1.1 Standard requirements 20
 - 4.1.2 Optional requirements 21
- 4.2 Joinability 21
 - 4.2.1 Weldability 21
 - 4.2.2 Mechanical interference fit method 21
- 4.3 Rounding procedure 22
- 4.4 Quality program 22

5 Materials and manufacture 22

- 5.1 Steelmaking process 22
- 5.2 Deoxidation practice 22
- 5.3 Skelp 22
- 5.4 Pipe manufacture 22
 - 5.4.1 Weld passes 22
 - 5.4.2 Skelp end welds 23
 - 5.4.3 Pipe expansion 23
 - 5.4.4 Weld zone 23
 - 5.4.5 Heat-treated pipe identification 23
 - 5.4.6 Welding procedure qualification 23

6 Chemical test requirements 24

- 6.1 General 24
- 6.2 Heat analysis 24
- 6.3 Product analysis 24
 - 6.3.1 General 24
 - 6.3.2 Frequency 24
 - 6.3.3 Sampling methods 24

6.3.4 Preparation 24

6.3.5 Retests 24

7 Mechanical test procedures 25

7.1 General 25

7.2 Tension tests 25

7.2.1 General 25

7.2.2 Yield strength 26

7.2.3 Longitudinal tension tests 26

7.2.4 Transverse body tension tests 26

7.2.5 Transverse weld tension tests 27

7.2.6 Retests 27

7.3 Flattening tests — Electric-welded pipe 28

7.3.1 General 28

7.3.2 Electric-welded pipe produced in single lengths 28

7.3.3 Electric-welded pipe produced from coiled skelp 29

7.3.4 Hot reduced electric-welded pipe 29

7.4 Bend tests — Electric-welded pipe 30

7.4.1 Procedure 30

7.4.2 Retests 30

7.5 Guided-bend tests 30

7.5.1 Submerged-arc-welded pipe 30

7.5.2 Electric-welded pipe 31

7.6 Charpy V-notch impact tests 32

7.6.1 General 32

7.6.2 Test specimen size 33

7.6.3 Test specimen type, orientation, and location 33

7.6.4 Retests — Pipe body 34

7.6.5 Retests — Pipe weld 34

7.7 Drop-weight tear tests 35

7.7.1 General 35

7.7.2 Orientation and location 35

7.7.3 Test specimen evaluation 35

7.7.4 Retests 36

7.8 Hardness tests 36

8 Mechanical properties 36

8.1 General 36

8.2 Tensile properties 36

8.2.1 Body tension tests 36

8.2.2 Transverse weld tension tests 37

8.3 Ductility tests 37

8.3.1 General 37

8.3.2 Flattening tests — Electric-welded pipe 37

8.3.3 Guided-bend tests 38

8.3.4 Bend tests 38

8.4 Notch-toughness tests — Pipe body 38

8.4.1 Frequency 38

8.4.2 Test temperature 38

8.4.3	Category I pipe notch-toughness requirements	38
8.4.4	Category II pipe notch-toughness requirements	38
8.4.5	Category III pipe notch-toughness requirements	39
8.5	Notch-toughness tests — Weld	39
8.5.1	Submerged-arc-welded pipe	39
8.5.2	Electric-welded pipe	40
8.6	Hardness tests	41
9	Mill hydrostatic testing	41
9.1	Mill hydrostatic testing requirements	41
9.2	Test duration	41
9.3	Verification of test	41
9.4	Test pressures	41
10	Dimensions, masses, and lengths	42
10.1	General	42
10.2	Outside diameter	42
10.3	Wall thickness	43
10.4	Mass	43
10.5	Nominal length	43
10.6	Mill-jointers	43
10.6.1	General	43
10.6.2	Single-jointers	43
10.6.3	Double-jointers	43
10.6.4	Triple-jointers	44
10.7	Pipe ends	44
10.7.1	Plain end pipe	44
10.7.2	Special end pipe	44
11	Inspection, tolerances, and work quality	45
11.1	Inspection	45
11.2	Inspection notice	45
11.3	Plant access	45
11.4	Tolerances on dimensions and mass	45
11.4.1	Tolerances on outside diameter — Pipe body	45
11.4.2	Tolerances on outside diameter — Pipe ends	46
11.4.3	Tolerances on out-of-roundness	46
11.4.4	Tolerances on wall thickness	47
11.4.5	Tolerances on mass	47
11.4.6	Tolerances on length	47
11.5	Work quality	47
11.5.1	Radial offset at weld seams	47
11.5.2	Tack welds in submerged-arc-welded pipe	47
11.5.3	Misalignment of weld seam of submerged-arc-welded pipe	47
11.5.4	Height of inside and outside weld beads of submerged-arc-welded pipe	47
11.5.5	Trim of outside weld flash of electric-welded pipe	47
11.5.6	Trim of inside weld flash of electric-welded pipe	48
11.5.7	Hard spots	48
11.5.8	Location of weld seams	48

11.5.9	Straightness	49
11.5.10	Geometric deviations	49
11.6	Defects	49
11.7	Residual magnetism	51
12	Nondestructive inspection	52
12.1	General	52
12.2	Methods of inspection	52
12.2.1	Electric-welded pipe	52
12.2.2	Submerged-arc-welded pipe	53
12.2.3	Skelp end welds	53
12.2.4	Circumferential jointer welds	54
12.2.5	Seamless pipe	54
12.3	Qualifications of personnel	54
12.4	Radiological inspection	54
12.4.1	Equipment	54
12.4.2	Procedure	54
12.4.3	Sensitivity	55
12.4.4	Image quality indicators	55
12.4.5	Acceptance limits	56
12.5	Ultrasonic inspection	57
12.5.1	Equipment	57
12.5.2	Reference standards	57
12.5.3	Standardization	58
12.5.4	Acceptance limits	59
12.5.5	Alarm limits	60
12.5.6	Inspection sensitivity checks	60
12.6	Electromagnetic inspection	60
12.6.1	Weld inspection	60
12.6.2	Body inspection	62
12.7	Magnetic particle inspection	64
12.7.1	Procedure	64
12.7.2	Equipment	64
12.7.3	Reference standard	64
12.8	Liquid penetrant inspection	64
13	Repair of pipe containing defects	64
13.1	General	64
13.2	Grinding	64
13.3	Welding	64
13.4	Procedure for repair of defective welds by welding	64
13.5	Repair welding procedure tests	65
13.5.1	General	65
13.5.2	Radiographic test	65
13.5.3	Transverse weld tension test	65
13.5.4	Transverse guided-bend test	65
13.6	Repair welder performance tests	66
14	Procedure for welded mill-jointers	66

15	Markings and coating	67
15.1	General	67
15.2	Required markings	67
15.3	Marking location and method of application	68
15.4	Sequence of required markings	69
15.4.1	Requirements	69
15.4.2	Examples	69
15.4.3	Sequence of markings	70
15.5	Die-stamped markings	70
15.6	Coating	70
16	Sour service	70
17	Elevated temperature service	71
18	Pipe for strain-based design	72
19	Certification	75
19.1	Certificate of compliance	75
19.2	Steelmaking and casting	75
19.3	Rolling mill	75
19.4	Chemical analysis	75
19.5	Inclusion shape control	75
19.6	Elevated service	75
19.7	Strain-based design	75
19.8	Tensile properties	75
19.9	Notch toughness	75
19.10	Hydrostatic pressure	76
19.11	Records	76

Annex A (informative)	— Steel pipe dimensions, weight classes, and schedule numbers	103
Annex B (informative)	— Steel line pipe and component size nomenclature	106
Annex C (informative)	— Summary of destructive testing requirements	108

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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.*
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CSA Z245.1:22

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.