

Steel flanges



CSA Standard

Z245.12-09
Steel flanges



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Contents

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

Subcommittee on Materials ix

Preface xi

1 Scope 1

- 1.1 General 1
- 1.2 Size, grade, nominal pressure class, and category 1
 - 1.2.1 Size 1
 - 1.2.2 Grade 1
 - 1.2.3 Nominal pressure class 1
 - 1.2.4 Category 1
- 1.3 Assemblies 1
- 1.4 Terminology 1

2 Reference publications 2

3 Definitions 3

4 General requirements 3

- 4.1 Product ordering requirements 3
 - 4.1.1 Standard requirements 3
 - 4.1.2 Optional requirements 4
 - 4.1.3 Additional requirements 4
- 4.2 Weldability 4
- 4.3 Rounding procedure 4
- 4.4 Quality program 4

5 Design 4

- 5.1 Flange ring design 4
- 5.2 Flange hub design 4
- 5.3 Design of flanges with non-standard dimensions 5

6 Materials and manufacture 5

- 6.1 Steelmaking process 5
- 6.2 Deoxidation practice 5
- 6.3 Manufacturing practice 6

7 Chemical test requirements 6

- 7.1 General 6
- 7.2 Heat analysis 6
- 7.3 Product analysis 6

8 Heat treatment procedures 6

- 8.1 General 6
- 8.2 Normalizing 6
- 8.3 Normalizing and tempering 6
- 8.4 Quenching and tempering 7
- 8.5 Post-weld stress relieving 7

9 Mechanical test requirements 7

- 9.1 General 7
- 9.1.1 Selection of test specimens 7
- 9.1.2 Defective test specimens 7
- 9.1.3 Test frequency 7
- 9.2 Tension tests 8
- 9.2.1 General 8
- 9.2.2 Requirements 8
- 9.3 Notch-toughness tests — Category II flanges 8
- 9.3.1 General 8
- 9.3.2 Test specimen orientation 8
- 9.3.3 Test specimen size 8
- 9.3.4 Requirements 8
- 9.4 Macrohardness tests 9

10 Dimensions and tolerances 9

- 10.1 Standard dimensions and tolerances 9
- 10.2 Non-standard dimensions and tolerances 9
- 10.3 Recommended end preparations 9
- 10.4 Contact face finish 9

11 Inspection, work quality, and repair of flanges containing defects 9

- 11.1 Plant inspection 9
- 11.2 Inspection notice 10
- 11.3 Plant access 10
- 11.4 Work quality 10
- 11.5 Repair of flanges containing defects 10

12 Non-destructive inspection 11**13 Sour service 11****14 Markings 12**

- 14.1 General 12
- 14.2 Required markings 12
- 14.3 Examples 12

15 Certification 12**Annexes**

- A** (informative) — Pipeline component size 37
- B** (informative) — Nominal pressure class 39
- C** (informative) — Recommended practice for the calibration and survey of heat-treating equipment 40

Tables

- 1** — Maximum cold working-pressure ratings 14
- 2** — Type of contact faces and contact face finish 15
- 3** — Chemical composition limits for heat and product analyses 16
- 4** — Tensile requirements 17
- 5** — Dimensions of PN 20 standard flanges, raised face 18
- 6** — Dimensions of PN 50 standard flanges, raised face and ring joint 20
- 7** — Dimensions of PN 68 standard flanges, raised face and ring joint 22
- 8** — Dimensions of PN 100 standard flanges, raised face and ring joint 24
- 9** — Dimensions of PN 150 standard flanges, raised face and ring joint 26

- 10** — Dimensions of PN 250 standard flanges, raised face and ring joint 28
 - 11** — Dimensions of PN 420 standard flanges, raised face and ring joint 30
 - 12** — Tolerances of standard flanges 31
 - 13** — Permissible sizes and separation of imperfections in flange facing finish for raised-face flanges 32
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Figures

- 1** — Hub designs 33
- 2** — Recommended end preparations 35
- 3** — Welding procedure qualification macrohardness test locations 36

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Preface

This is the sixth edition of CSA Z245.12, *Steel flanges*. It supersedes the previous editions published in 2005, 2001, 1996, 1991, and 1985.

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

Changes to this edition include the following:

- (a) new grades have been added, together with the corresponding tensile requirements;
- (b) Charpy test specimen sizes have been modified;
- (c) chemical composition limits for product analysis for Grades 290 and higher have been revised; and
- (d) marking requirements have been revised.

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.

September 2009

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 publication 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 publication.
- (4) CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.
- (5) All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.
Requests for interpretation should
 - (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) be phrased where possible to permit a specific “yes” or “no” answer.

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Z245.12-09

Steel flanges

1 Scope

1.1 General

This Standard covers wrought steel welding neck and blind flanges primarily intended for use in oil or gas pipeline systems.

1.2 Size, grade, nominal pressure class, and category

1.2.1 Size

This Standard covers flanges in sizes from NPS 1/2 to NPS 60. (See [Table A.1](#).)

1.2.2 Grade

For other than sour service, this Standard covers flanges from Grade 248 to Grade 690. For sour service, this Standard covers flanges from Grade 248 to Grade 483.

Note: The standard grades are Grades 248, 290, 317, 359, 386, 414, 448, 483, 550, 620, and 690 (see [Table 4](#)); however, intermediate grades are also permitted.

1.2.3 Nominal pressure class

This Standard covers flanges having cold working-pressure rating, designated by nominal pressure classes from PN 20 to PN 420. The standard nominal pressure classes are shown in [Table 1](#). (ASME class designations are shown in [Table B.1](#).)

1.2.4 Category

This Standard covers flanges in the following categories:

- (a) Category I: flanges without requirements for proven notch-toughness properties; and
- (b) Category II: flanges with requirements for proven notch-toughness properties.

1.3 Assemblies

This Standard does not cover assemblies.

Note: An assembly is a grouping of fittings or flanges, or both, joined by one or more circumferential welds.

1.4 Terminology

In CSA Standards, “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; “may” is used to express an option or that which is permissible within the limits of the standard; and “can” is used to express possibility or capability. 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. Notes to tables and figures are considered part of the table or figure and may be written as requirements. Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.