CANADIAN STANDARDS ASSOCIATION

Z245.12-09

Steel flanges

CSA Standard

Z245.12-09
Steel flanges

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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 specific "yes" or "no" answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are published in CSA's periodical* Info Update*, which is available on the CSA Web site at www.csa.ca.*

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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 ratings 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.