INTERNATIONAL STANDARD

ISO 16528-1

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Boilers and pressure vessels —

Part 1: Performance requirements

Chaudières et récipients sous pression —

Partie 1: Exigences de performance

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16528-1 was prepared by Technical Committee ISO/TC 11, *Boilers and pressure vessels*.

This first edition of ISO 16528-1, together with the first edition of ISO 16528-2, cancels and replaces ISO/TS 16528:2002, which has been technically revised.

ISO 16528 consists of the following parts, under the general title *Boilers and pressure vessels*:

— *Part 1: Performance requirements*

— *Part 2: Procedures for fulfilling the requirements of ISO 16528-1*

Introduction

This part of ISO 16528 specifies performance requirements for boilers and pressure vessels, to ensure the integrity of the pressure boundary.

An important safety requirement is the suitable provision of technical requirements taking into account the various modes of failure that can occur in boilers and pressure vessels. Guidance is given on these modes together with the criteria for satisfying these.

There are significant differences among countries in regulating the supply and operation of boilers and pressure vessels. These differences include compliance with specific standard(s) limiting source or specification of materials, use of specific inspection bodies and discriminatory certification systems or import licenses. However, these standards have a proven history of supporting public safety and good commercial operating experience.

This part of ISO 16528, which is performance-based, enables these standards to co-exist, providing an approach that can accommodate technical innovations, existing regulatory frameworks and market needs. Compliance with the requirements of this part of ISO 16528 does not relieve parties from obligations under local, national or international laws or regulations.

ISO 16528-2 provides a procedure to identify existing prescriptive standards that fulfil the requirements of this part of ISO 16528.

Boilers and pressure vessels —

Part 1:
Performance requirements

1 Scope

This part of ISO 16528 defines the performance requirements for the construction of boilers and pressure vessels.

It is not the intent of this part of ISO 16528 to address operation, maintenance and in-service inspection of boilers and pressure vessels.

In relation to the geometry of the pressure-containing parts for pressure vessels, the scope of this part of ISO 16528 includes the following:

a) welding end connection for the first circumferential joint for welded connections;

b) first threaded joint for screwed connections;

c) face of the first flange for bolted, flanged connections;

d) first sealing surface for proprietary connections or fittings;

e) safety accessories, where necessary.

In relation to the geometry of pressure-containing parts for boilers, the scope of this part of ISO 16528 covers the following:

f) feedwater inlet (including the inlet valve) to steam outlet (including the outlet valve), including all inter-connecting tubing that can be exposed to a risk of overheating and cannot be isolated from the main system;

g) associated safety accessories;

h) connections to the boilers involved in services, such as draining, venting, desuperheating, etc.

This part of ISO 16528 does not apply for nuclear components, railway and marine boilers, gas cylinders or piping systems or mechanical equipment, e.g. turbine and machinery casings.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
boiler
assembly intended for generation of steam or hot water above atmospheric pressure