

# INTERNATIONAL STANDARD

**ISO  
15649**

First edition  
2001-06-15

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## **Petroleum and natural gas industries — Piping**

*Industries du pétrole et du gaz naturel — Tuyauterie*



Reference number  
ISO 15649:2001(E)

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Printed in Switzerland

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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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15649 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

Annexes A and B of this International Standard are for information only.

## Introduction

This International Standard makes normative reference to ANSI/ASME B31.3, which is presently the worldwide basis for current standards and practices for piping systems for the petroleum and natural gas industries. It should be noted that ANSI/ASME B 31.3 itself does allow supplementary requirements if necessary for the particular application or service intended.

Users of this International Standard should be aware that further or differing requirements may be needed for individual applications. This International Standard is not intended to inhibit a vendor from offering, or the purchaser from accepting alternative equipment or engineering solutions for the individual application. This may be particularly appropriate where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this International Standard and provide details.

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# Petroleum and natural gas industries — Piping

## 1 Scope

**1.1** This International Standard specifies the requirements for design and construction of piping for the petroleum and natural gas industries, including associated inspection and testing.

**1.2** This International Standard is applicable to all piping within facilities engaged in the processing or handling of chemical, petroleum, natural gas or related products.

EXAMPLE Petroleum refinery, loading terminal, natural gas processing plant (including liquefied natural gas facilities), offshore oil and gas production platforms, chemical plant, bulk plant, compounding plant, tank farm.

**1.3** This International Standard is also applicable to packaged equipment piping which interconnects individual pieces or stages of equipment within a packaged equipment assembly for use within facilities engaged in the processing or handling of chemical, petroleum, natural gas or related products.

**1.4** This International Standard is not applicable to transportation pipelines and associated plant.

EXAMPLE Pipeline pump station, pipeline compressor station, pipeline tank farm, offshore platform risers up to and including pig launching facility.

## 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ANSI/ASME B31.3, *Process Piping*.

## 3 Terms and definitions

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

### 3.1

#### **ambient temperature**

temperature of the surrounding atmosphere in the immediate vicinity of the piping system

### 3.2

#### **chemical plant**

industrial plant for the manufacture or processing of chemicals, or of raw materials or intermediates for such chemicals

NOTE A chemical plant may include supporting and service facilities such as storage, utility and waste treatment units.

### 3.3

#### **design minimum temperature**

lowest temperature, at the mid-thickness of the piping wall, expected in service