

INTERNATIONAL STANDARD

ISO
9327-1

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Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions —

Part 1: General requirements

*Pièces forgées et barres laminées ou forgées en acier pour appareils à
pression — Conditions techniques de livraison —*

Partie 1: Exigences générales



Reference number
ISO 9327-1:1999(E)

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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.

International Standard ISO 9327-1 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 10, *Steel for pressure purposes*.

This first edition, together with parts 2 to 5 of ISO 9327, cancels and replaces ISO 2604-1:1975.

ISO 9327 consists of the following parts, under the general title *Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions*:

- *Part 1: General requirements*
- *Part 2: Non-alloy and alloy (Mo, Cr and CrMo) steels with specified elevated temperature properties*
- *Part 3: Nickel steels with specified low temperature properties*
- *Part 4: Weldable fine grain steels with high proof strength*
- *Part 5: Stainless steels*

Annexes A, B and C form an integral part of this part of ISO 9327.

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Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions —

Part 1: General requirements

1 Scope

1.1 This part of ISO 9327 covers the technical delivery conditions for forgings (see note 1) and for rolled or forged bars for pressure purposes manufactured from the following internationally used steels (see note 2):

- a) non-alloy and alloy ferritic or martensitic steels with specified room temperature properties and supplementary requirements for elevated temperature properties covered in ISO 9327-2;
- b) nickel steels with specified low temperature properties covered in ISO 9327-3;
- c) weldable fine grain steels with high proof strength (room temperature, elevated temperature and low temperature grades) covered in ISO 9327-4;
- d) austenitic and austenitic-ferritic steels (room temperature and elevated temperature grades) covered in ISO 9327-5.

NOTE 1 In accordance with ISO 6929 the term forgings covers free open die forgings including ring rolled products as well as closed die forgings.

NOTE 2 Additional to the internationally used steels for pressure purposes covered in parts 2 to 5 of ISO 9327, there are other steels used regionally or nationally for the same application. These other steels shall not be precluded by this International Standard provided that they comply with the relevant International or National Standards for vessel constructions.

NOTE 3 The following International Standards also apply for steel products for pressure purposes: ISO 9328 parts 1 to 5, ISO 9329 parts 1 to 4, ISO 9330 parts 1 to 6, ISO 4978.

1.2 In special cases variations of the requirements of this International Standard or additions to them may form the subject of an agreement at the time of enquiry and order (see annex C).

1.3 In addition to the requirements of this International Standard the general technical delivery requirements in ISO 404 apply, unless otherwise indicated in the following.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9327. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9327 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 404:1992, *Steel and steel products — General technical delivery requirements*.

ISO 683-13:1986, *Heat-treatable steels, alloy steels and free-cutting steels — Part 13: Wrought stainless steels*.

ISO 3651-1:1998, *Determination of resistance to intergranular corrosion of stainless steels— Part 1: Austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in nitric acid medium by measurement of loss in mass (Huey test).*

ISO 3651-2:1998, *Determination of resistance to intergranular corrosion of stainless steels— Part 2: Ferritic, austenitic and ferritic-austenitic (duplex) stainless steels — Corrosion test in media containing sulfuric acid.*

ISO 4948-1:1982, *Steels — Classification — Part 1: Classification of steels into unalloyed and alloy steels based on chemical composition.*

ISO 4948-2:1982, *Steels — Classification — Part 2: Classification of unalloyed and alloy steels according to main quality classes and main property or application characteristics.*

ISO 6929:1987, *Steel products — Definitions and classification.*

ISO 9327-2, *Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions — Part 2: Non-alloy and alloy (Mo, Cr and CrMo) steels with specified elevated temperature properties.*

ISO 9327-3, *Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions — Part 3: Nickel steels with specified low temperature properties.*

ISO 9327-4, *Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions — Part 4: Weldable fine grain steels with high proof strength.*

ISO 9327-5, *Steel forgings and rolled or forged bars for pressure purposes — Technical delivery conditions — Part 5: Stainless steels.*

ISO/TR 9769:1991, *Steel and iron — Review of available methods of analysis.*

ISO 10474:1991, *Steel and steel products — Inspection documents.*

ISO/TR 15461:1997, *Steel forgings — Testing frequency, sampling conditions and test methods for mechanical tests.*

3 Terms and definitions

For the purposes of this part of ISO 9327 the following terms and definitions apply.

- For the terms “steel”, “non-alloy steel”, “alloy steel”, “quality steel” and “special steel” the definitions given in ISO 4948-1 and ISO 4948-2 apply.
- For the terms “bar” and “forging” the definitions given in ISO 6929 apply.
- For the terms “ruling section” and “equivalent diameter” or “equivalent thickness” see annex A.

NOTE The classification of the steels listed in ISO 9327-2 and ISO 9327-4, in accordance with ISO 4948, is indicated in Table 1, footnote a, of ISO 9327-2:1999 and ISO 9327-4:1999. All steels listed in ISO 9327-3 and ISO 9327-5 are alloy, special steels.

4 Ordering

4.1 The purchaser shall state on his enquiry and order the indications and requirements given below:

- a) the quantity of products required;
- b) an indication of the product form (e.g. “forging”);