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INTERNATIONAL STANDARD 2604/I

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Steel products for pressure purposes — Quality requirements — Part I : Forgings

Produits en acier pour appareils à pression — Spécifications de qualité — Partie I : Pièces forgées

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2604/1 was drawn up by Technical Committee ISO/TC 17, *Steel*, and circulated to the Member Bodies in October 1971.

It has been approved by the Member Bodies of the following countries :

Australia	Germany	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	India	Spain
Bulgaria	Israel	Switzerland
Canada	Italy	Thailand
Czechoslovakia	Japan	Turkey
Denmark	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Netherlands	U.S.S.R.
Finland	New Zealand	
France	Portugal	

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Norway
Sweden
U.S.A.

Steel products for pressure purposes – Quality requirements – Part I : Forgings

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the quality requirements for solid steel forgings up to 250 mm diameter or equivalent cross-section and hollow forgings with up to 200 mm wall thickness manufactured from the steel types listed in table 1, for pressure purposes.

NOTE – The term "forgings" used in this International Standard shall be understood to include flanges, fittings, covers, heads, component sections, or complete vessels intended for the containment of gaseous or liquid material under pressure.

2 REFERENCES

ISO 82, *Steel – Tensile testing.*

ISO 148, *Steel – Charpy impact test (V-notch).*¹⁾

ISO/R 205, *Determination of proof stress and proving test for steel at elevated temperatures.*

ISO/R 377, *Selection and preparation of samples and test pieces for wrought steel.*

ISO/R 404, *General technical delivery requirements for steel.*

ISO/R 643, *Micrographic determination of the austenitic grain size of steels.*

ISO/R 783, *Mechanical testing of steel at elevated temperatures – Determination of lower yield stress and proof stress and proving test.*

ISO 2566/1, *Steel – Conversion of elongation values – Part I : Carbon and low alloy steels.*

ISO 2605/1, *Steel products for pressure purposes – Derivation and verification of elevated temperature properties – Part I : Yield or proof stress of carbon and low alloy steel products.*²⁾

ISO 2605/11, *Steel products for pressure purposes – Derivation and verification of elevated temperature properties – Part II : Proof stress of austenitic steel products.*²⁾

ISO/DATA No. 1, *Summary of average stress rupture properties for wrought boiler and pressure vessel steels for times of 10 000 hours to 250 000 hours and master curves.*

1) At present at the stage of draft (revision of ISO/R 148).

2) At present at the stage of draft.

3 GENERAL REQUIREMENTS

3.1 Information to be supplied by the purchaser

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

- a) the forging dimensions, tolerances and surface finishes (see 3.7 and 3.8);
- b) the steel type (see table 1);
- c) the inspection procedures and type of documents (see 3.9, 3.14, 4.2 and 5.2);

3.1.2 Certain alternatives are permitted by this International Standard and the purchaser may also state on his enquiry and order his requirements as follows, but if no such statement is made supply will be at the option of the manufacturer :

- d) the deoxidation practice (see 3.2.1);
- e) heat-treatment condition of supply (see 3.4);
- f) if a product (check) analysis is required (see 3.5.2);
- g) if additional mechanical tests are required (see 3.6.1.2);
- h) any special requirements for freedom from defects (see 3.7.2);
- i) any special requirements regarding the method of providing samples and test pieces (see 3.11.1.2);
- j) the number of room temperature impact tests (1 or 3) required (see 3.11.1.4 b));
- k) details of non-destructive tests, if required (see 3.12.4);
- l) any special marking requirements (see 3.15.2);
- m) if elevated temperature proof stress tests are required and, if so, the testing temperature selected from table 3 (see 4.2.1.2);