

ICS 23.020.30

English version

Pressure Equipment - Part 5: Compliance and Inspection Documentation of Materials

Equipements sous pression - Partie 5: Documents de
conformité et de contrôle des matériaux

Druckgeräte - Teil 5: Prüfbescheinigungen für metallische
Werkstoffe und Übereinstimmung mit der
Werkstoffspezifikation

This European Standard was approved by CEN on 19 August 2002.

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Foreword

This document EN 764-5:2002 has been prepared by Technical Committee CEN/TC 54 "Unfired pressure vessels", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2003, and conflicting national standards shall be withdrawn at the latest by April 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of the EU Directive 97/23/EC.

For relationship with the EU Directive, see informative annex ZA which is an integral part of this document.

This European Standard "Pressure equipment" consists of seven Parts which are:

- *Part 1: Pressure, temperature, volume, nominal size.*
- *Part 2: Quantities, symbols and units.*
- *Part 3: Definition of parties involved.*
- *Part 4: Establishment of technical delivery conditions for materials.*
- *Part 5: Compliance and Inspection Documentation of Materials;*
- *Part 6: Operating instructions.*
- *Part 7: Safety systems and unfired pressure equipment.*

Annex A is normative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This Part of this European Standard specifies the materials for pressure equipment to comply with the requirements of the relevant pressure equipment material specification. This Part describes how this shall be applied to materials intended for the manufacturing of pressure bearing parts and attachments to them.

A simplified diagram of the routes for inspection documentation and compliance with the material specification is shown in Figure 1. Guidance on the approval and appraisal procedures for materials is given in annex A.

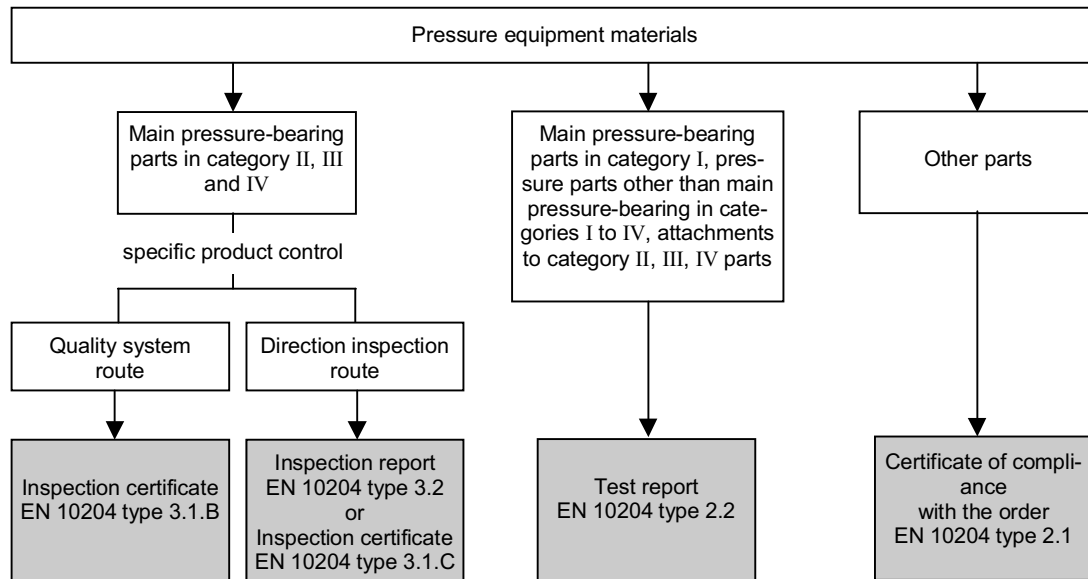


Figure 1 — Types of inspection documents required

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 10204:1991, *Metallic products — Types of inspection documents*.

3 Requirements with respect to pressure equipment categories

3.1 General

For material intended for use as-pressure bearing parts of pressure equipment of all categories and for attachments (e. g. support feet, lifting lugs, baffles, pipe supports, stiffening rings) welded directly to pressure containing parts of pressure equipment of all categories, the pressure equipment manufacturer shall assure compliance of these materials by obtaining from the material manufacturer a declaration of compliance, which is traceable to the material, as specified in 3.2 to 3.6.

The declaration of compliance consists of a declaration of the material manufacturer that the product supplied is in compliance with the requirements of the specification and the order and an inspection document as defined in 3.2 to 3.4.

NOTE Inspection documents to EN 10204:1991 type 2.1 and 2.2 include the declaration of the material manufacturer.

3.2 Material for main pressure bearing parts in category II, III and IV

For material intended for use as main pressure bearing parts of pressure equipment classified in categories II, III and IV, a specific inspection and testing route according to clauses 4 or 5 shall be followed. This shall be either:

- a) by a material manufacturers quality system route (production under QM system coverage) according to clause 4; or
- b) by direct inspection route (production without QM system coverage) according to clause 5.

3.3 Material for pressure parts not covered by 3.2 and for attachments in category II, III and IV

For material intended for use as main pressure bearing parts of pressure equipment classified in category I, pressure parts other than main pressure bearing parts in categories I to IV and for attachments welded directly to pressure containing parts of pressure equipment classified in categories II, III and IV at least a test report, EN 10204:1991 — type 2.2 shall be obtained from the material manufacturer.

3.4 Other material

For material for other parts and for attachments welded directly to pressure containing parts not covered under 3.3, at least a certificate of compliance with the order, EN 10204:1991 — type 2.1 shall be obtained from the material manufacturer.

3.5 Welding consumables

For welding consumables for all categories at least a test report EN 10204:1991 type 2.2 shall be obtained from the welding consumable manufacturer.

3.6 Use of higher document levels

An inspection document of a higher level is always acceptable.

4 Material manufacturers quality system route

4.1 General

The pressure equipment manufacturer shall assure himself that the material manufacturer has a certified quality system for manufacture, inspection and testing in accordance with 4.2 and obtain inspection documents in accordance with 4.3.3.

4.2 Quality system

4.2.1 Assessment of the quality system

The material manufacturer shall have undergone a material related assessment of his quality system by a competent body of his choice.

4.2.2 Certification of the quality system

The quality system and its assessment shall fulfil the following requirements:

- a) At least one member of the auditing team of the competent body responsible for assessment who has experience of assessing the material manufacturing and material groups concerned shall take part in the certification procedure;
- b) The assessment procedure shall include a visit to the material manufacturers premises;
- c) The assessment shall include a review of:
 - 1) the type of manufacturing processes applied for the manufacture of the products covered by the scope of the intended certification;
 - 2) the type of equipment utilized;
 - 3) the essential parameters to be controlled during production in order to consistently achieve the required quality;
 - 4) the function of the persons responsible for the quality system, the manufacture and the inspection and testing;
- d) The competent body shall evaluate by interviews or by the examination of documents:
 - 1) that the manufacturing equipment and the equipment controlling the essential parameters are available. They shall be capable of permitting the consistent delivery of products in the required quality;
 - 2) that competent personnel are available for operating and maintaining the equipment and supervising the manufacturing and inspection and testing activities.
- e) Where valid results of preceding reviews of the quality system are available, these reviews shall not be repeated.

NOTE The QA system can be based on EN ISO 9001 [2].

4.2.3 Reassessment and periodic audits

The competent body shall carry out periodic audits to make sure that the material manufacturer maintains and applies the quality system. The frequency of periodic audits shall be such that a full reassessment is carried out every three years, with at least one visit per year.

4.2.4 Assessment reports

The result of the assessment and periodic audits of the quality system shall be summarised in an assessment report, which shall be retained by the material manufacturer for a period of 10 years.

4.3 Material testing and inspection documents

4.3.1 First production

NOTE Where a material manufacturer starts production of an established material, EN 764-4:2002, A.4, should be taken into account. Where a material manufacturer starts production of a new material, EN 764-4:2002, A.5, should be taken into account.

Where test results of comparable materials are available these shall be taken into account.

4.3.2 Ordering and delivery of material

When ordering the material the pressure equipment manufacturer shall specify:

- a) the technical delivery conditions; and

- b) any additional requirements, where applicable.

The material manufacturer shall supply an inspection document in accordance with 4.3.3 on delivery as well as a declaration that the material supplied is in compliance with the requirements of the specification and the order.

4.3.3 Inspection documents

The material manufacturer shall issue inspection certificates to EN 10204:1991 type 3.1.B traceable to the product, to ensure compliance with the applicable material specification and order requirements. At the request of the pressure equipment manufacturer, inspection reports to EN 10204:1991 type 3.2 or inspection certificates to EN 10204:1991 type 3.1.C may be issued instead of type 3.1.B certificates.

NOTE The material inspection certificates type 3.1.B should be accompanied by or contain information concerning the certification of the material manufacturers quality system in accordance with this Part together with the name of the competent body carrying out the quality system assessment and surveillance, the proof of applicability of the quality system to the inspected material, the certificate number and its expire date.

5 Direct inspection route

5.1 First production

NOTE Where a material manufacturer starts production of an established material, EN 764-4:2002, A.4, should be taken into account. Where a material manufacturer starts production of a new material, EN 764-4:2002, A.5, should be taken into account.

Where test results of comparable materials are available, these should be taken into account.

5.2 Inspectors

The pressure equipment manufacturer may carry out direct inspections himself or appoint an experienced and competent body to act on his behalf.

The material manufacturer shall ensure that the inspector has access to the manufacturing facility of the material manufacturer.

5.3 Material testing and inspection documents

5.3.1 Testing and traceability of the test samples

The inspector to 5.2 shall see the material prior to parting off the samples to be tested and ensure the traceability of the test samples to the product by stamping with an identification mark or other appropriate means.

The inspector to 5.2 shall test or witness the testing of the material in accordance with the order.

5.3.2 Ordering and delivery of the material

When ordering, the pressure equipment manufacturer shall specify

- a) the technical delivery conditions; and
- b) additional requirements, where applicable.

The material shall be accompanied by an inspection document in accordance with 5.3.3 on delivery as well as a declaration that the material supplied is in compliance with the requirements of the specification and the order.

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5.3.3 Inspection documents

The inspection documents, which certify compliance with the applicable material specification and order requirement, shall ensure traceability to the product.

The pressure equipment manufacturer shall specify in his order an inspection report to EN 10204:1991 type 3.2 or inspection certificate to EN 10204:1991 type 3.1.C.

6 Material from stockists

6.1 Inspection documents and marking

Material bought by the pressure equipment manufacturer from a material stockist shall be accompanied by inspection documents as defined in clause 3. Material with inspection documents according to clause 5 shall only be bought from a stockist if the direct inspection was carried out by a competent inspection body (definition see EN 764-3:2002) at the material manufacturers works. Inspection outside the manufacturing plant shall not be excluded, if agreed by the material manufacturer.

In addition, the material shall also contain the original material manufacturers marking and if applicable the cast number except as permitted in 6.2 and shall be traceable to the material certificates.

6.2 Cut off material pieces

6.2.1 General

When the original marking, is cut out by the stockist, an identification shall be applied to the other parts of the material before cutting as defined below.

6.2.2 Transfer of marking by material stockists with a certified quality system

Where the material stockist has a quality system which has been certified to EN ISO 9001 [2] (except manufacturers name or mark) by an accredited body, he shall transfer the original material markings and add his own mark to confirm traceability. He shall also issue a transfer report, containing transferred item, his name and date of transfer.

6.2.3 Transfer of marking by material stockists without a certified quality system

Where the material stockist does not have a quality system certified by an accredited body then the transfer of the original marking shall be witnessed by either the pressure equipment manufacturer or authorized inspection body in charge. A transfer report shall be issued as referenced in 6.2.2.

7 Specific requirements for material containing welds - components

7.1 General

Where the material manufacturer also supplies components (starting materials jointed by welding, with or without filler metal) the pressure equipment manufacturer shall ensure that the accompanying inspection documents enable traceability to the starting materials.

The inspection documents shall confirm that the ESRs regarding welding and non-destructive testing are fulfilled.

7.2 Welding procedures and welders qualification

For material which forms part of pressure equipment in categories II, III and IV, the qualification of welding procedures and welder qualifications shall be approved by a competent third party. Welding procedures shall be assessed by the equipment manufacturer for suitability.

7.3 Non-destructive testing of permanent joints

Non-destructive testing shall be carried out by suitably qualified personnel. For material which forms part of pressure equipment in categories III and IV, non-destructive testing shall be carried out by personnel approved by a recognised third party.

Annex A (normative)

Approval and appraisal procedures for materials

A.1 General

This annex gives guidance concerning the applicable bodies mentioned in the main part, when pressure equipment is being manufactured in accordance with the requirements of the Pressure Equipment Directive (PED [1]).

A.2 Competent body

A competent body as mentioned in clause 4 shall be:

- established within the Community and;
- a body which has been subject to accreditation. The accreditation body shall be authorized to grant accreditation by a EU Member State.

A.3 Experienced and competent body

The experienced and competent body referred to in 5.2 shall be:

- a body which has been subject to accreditation. The accreditation body shall be authorised to grant accreditation by a EU Member State or
- a notified body as required by Article 11 paragraph 1 of the PED, except as required by A.5.2 or
- a user inspectorate, where applicable.

A.4 Accredited body

An accredited body as mentioned in 6.2.2 shall be a body which is accredited to perform a certification of quality system.

A.5 Competent third party inspection body

The competent third party inspection body as mentioned in 7.2 shall be either a notified body according to article 12 or a third party organisation recognized by a EU Member State as provided for in article 13 of the PED.

The competent third party inspection body, referred to in 7.3, shall be a recognized third party organisation in accordance with article 13 of the PED.

A.6 Conformity assessment of pressure equipment materials

A.6.1 Conformity assessment of materials listed in the relevant pressure equipment standard or contained in a European approval for materials shall be as described in 3.2 to 3.5.

A.6.2 Conformity assessment of material with a Particular Material Appraisal shall only be as described in clause 5. For pressure equipment in categories III and IV the assessment shall be performed by the notified body in charge of conforming assessment procedures for the pressure equipment.

Annex ZA (informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

This European Standard has been prepared under a mandate given to CEN by the European Commission and supports essential requirements of the PED [1] with regard to material requirements.

The clauses of this standard given in Table ZA.1 are likely to support requirements of the PED.

Compliance with this standard provides one means of conforming with the specific essential requirements of the Directive concerned and associated EFTA regulations.

WARNING Other requirements and other EU Directives can be applicable to the product(s) falling within the scope of this standard.

Table ZA.1 — Comparison between PED and this European Standard with respect to material of pressure equipment

EN 764-5, harmonized clauses	Content	PED
all clauses	technical documentation for materials taken from harmonized standards, EAM or particular appraisals	Annex I, 4.2 (b)
all clauses	conformity of materials and inspection documents	Annex I, 4.3

Bibliography

- [1] Directive 97/23/EC of the European Parliament and the Council of 29 May 1997 on the approximation of the laws of the Member States concerning pressure equipment (PED), Official Journal of the European Communities, L181, 1997.
- [2] EN ISO 9001, *Quality management systems – Requirements (ISO 9001:2000)*.
- [3] prEN 764-3, *Pressure equipment — Part 3: Definition of parties involved*.
- [4] EN 764-4, *Pressure equipment — Part 4: Establishment of technical delivery conditions for materials*.