

## Guidelines

5/18/07

## 7. ESRs on Material

## Guideline 7/1

[Original version as adopted on: *26 Jun 2001*]

Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"

Guideline related to: [Annex I Section 4.2](#)

**Question:** What is to be understood by harmonised standard as referred to in Annex I, section 4.2 b)?

**Answer:** A harmonized standard in this context can be a harmonized product standard for an item of pressure equipment or an assembly which may be CE marked.

It could also be a harmonized supporting standard for materials, that contains technical data clearly indicating the field of application.

In the case of a harmonised supporting standard for materials, presumption of conformity to the ESRs is limited to technical data of materials in the standard and does not presume adequacy of the material to a specific item of equipment. Consequently the technical data stated in the material standard shall be assessed against the design requirements of this specific item of equipment to verify that the ESRs of the PED are satisfied.

**NOTE:** Subsequent manufacturing processes affecting properties of the base material shall be taken into account when assessing the conformity of the pressure equipment to the material requirements of the directive.

Accepted by WPG on: **21 Feb 2001**

Accepted by Working Group "pressure": **26 Jun 2001**

Remarks:

## Guideline 7/2

[Original version as adopted on: *29 Jan 1999* and modified on *31 Mar 2006*]

Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"

Guideline related to: [Annex I Section 4.3](#)

**Question:** What is a "competent body" for the certification of the quality (assurance) systems of material manufacturers?

**Answer:** A "competent body" for certification of the quality systems of material manufacturers can be any third party body established as a legal entity within the Community which has recognized competence in the assessment of quality (assurance) systems for the manufacture of materials and in the technology of the materials concerned. Competence can be demonstrated, for example, by accreditation.

See also guideline [7/7](#).

**Note 1:** A body not established as a legal entity within the Community, even if it has a recognition agreement through the International Accreditation Forum, does not comply with the requirements of Annex I section 4.3.

**Note 2:** A notified body may perform this task only if it has a recognized competence in the field of quality assurance, materials and related process technology. For this certification, the possible use of the notification number for PED is irrelevant.

**Note 3:** The certificate of quality system shall make reference to the legal entity established in the Community and its address

Accepted by WPG on: **28 Nov 2005**

Accepted by Working Group "pressure": **31 Mar 2006**

**Remarks:**

### Guideline 7/3

[Original version as adopted on: *29 Jan 1999*]

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to:** [Article 11 Paragraph 2](#)

**Question:** A notified body is in the process of giving a European approval for materials. In Article 11.2 an information process with delays is given. Having sent out the information the notified body must wait for comments. How long must the body wait?

**Answer:** The approval can be given three months after the mailing date of the information, with one exception: if a Member State or the Commission refers the matter to the Standing Committee set up by Article 5 of Directive 98/34/EC (ex 83/189/EEC), it must inform the notified body which must wait for a letter from the Commission giving the conclusions of the Committee.

Accepted by WPG on: **26 Nov 1998**

Accepted by Working Group "pressure": **29 Jan 1999**

**Remarks:**

### Guideline 7/4

[Original version as adopted on: *23 May 2002* and modified on *21 Nov 2006*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 3.1.5](#)

**Question:** What are the 'suitable means' for traceability referred to in annex I, section 3.1.5 ?

**Answer:** The objective of traceability is to avoid any doubt about the material specification used for a type of equipment. The suitable means shall be determined according to the type of equipment and its manufacturing conditions: for instance, complexity of the product, unitary or serial products, risk of mixing of material grades, etc.

These means range from physical marking of individual items by stamping or colour coding to procedural methods. It is not always necessary for the identification of material to be linked to a specific delivery.

The traceability system should be proportionate to the risk of mixing material grades during the manufacturing process. When there is no such a risk, the system may be limited to administrative means.

**Note 1:** The traceability system of the manufacturer shall allow him to provide to a market surveillance authority, upon request, the technical documentation related to a specific item of pressure equipment and the material certificate.

**Note 2:** When a national authority applies the safeguard clause for a particular product due to the material, the decision will relate to all products made from the same material grade specification, if the traceability system does not allow the identification to relate to (a) specific delivery(ies). The same will apply if a manufacturer withdraws non-compliant or defective products from the market.

Accepted by WPG on: **18 Oct 2006**

Accepted by Working Group "pressure": **23 May 2002**

**Remarks:**

### Guideline 7/5

[Original version as adopted on: *28 Jun 2005* and modified on *18 Apr 2007*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.3](#)

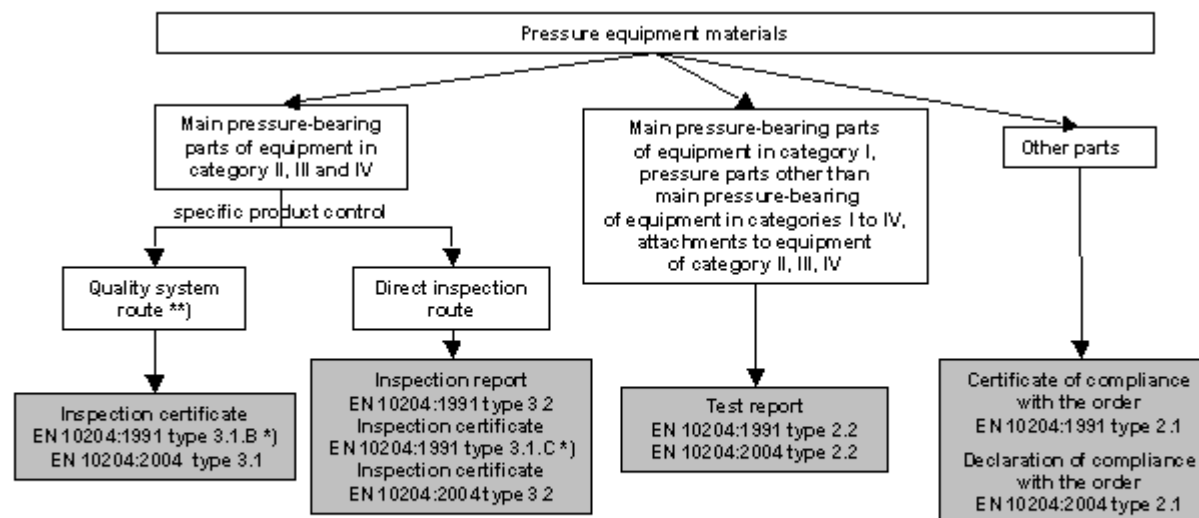
**Question:** Annex I, section 4.3 of the PED requires that the equipment manufacturer must take appropriate measures to ensure that the material used conforms with the required specification. In particular, documentation prepared by the material manufacturer affirming compliance with a specification must be

obtained for all materials.

How may these requirements be applied in terms of required inspection documents?

**Answer:**

1. According to the 1st paragraph of Annex I, section 4.3, the material manufacturer shall certify, that the delivery complies with the requirement of the specification and the order he has received. This affirmation of compliance shall be stated on or appended to the certificate, whichever type is issued.
2. According to the 2nd paragraph of Annex I, section 4.3 a certificate of specific product control is required for the main pressure-bearing parts of pressure equipment in categories II, III and IV. Account shall be taken of the requirements in 4.1 and 4.2 (a) of Annex I.
3. According to the 3rd paragraph of Annex I, section 4.3 a distinction is made for the material manufacturer's fabrication system: where he has an appropriate quality (assurance) system certified by a competent body established within the Community, and having undergone a specific assessment for materials, an inspection document from the manufacturer is appropriate (see also guidelines 7/7 and 7/16).
4. The general requirements for all other cases are given in the first 2 paragraphs of Annex I, section 4.3.
5. A scheme of the relevant inspection documents when following EN 10204:1991 or EN 10204:2004 is given in the following diagram:



\*) see also item 1) of the answer

\*\*) see also item 3) of the answer

**Notes:**

1. An inspection document of a higher level is always acceptable.
2. Material from stockists shall be accompanied by inspection documents from the material manufacturer.
3. For traceability and transfer of marking, see also guideline [7/4](#).
4. For main pressure bearing parts, see also guideline [7/6](#), and for attachments see definition 2.1 of Article 1 of the Directive.
5. For components, see guideline [7/19](#).
6. As regards joining materials, see guideline [7/10](#).
7. Previously, the affirmation of compliance was not included in the definition of certificate 3.1.B or 3.1.C according to EN 10204:1991, but is now included in the definition of certificate 3.1 of EN 10204:2004.

Accepted by WPG on: **27 Mar 2007**

Accepted by Working Group "pressure": **18 Apr 2007**

**Remarks:** Integration of guideline 7/20

### Guideline 7/6

**[Original version as adopted on: 26 Jun 2001]**

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.3](#)

**Question:** The 2nd paragraph of section 4.3 of Annex I gives requirements for the main pressure-bearing parts.  
How are they defined?

**Answer:** The main pressure-bearing parts are the parts, which constitute the envelope under pressure, and the parts which are essential for the integrity of the equipment.

Examples of main pressure-bearing parts are shells, ends, main body flanges, tube sheet of exchangers, tube bundles.

The materials for these main pressure-bearing parts of equipment of categories II to IV shall have a certificate of specific product control (see Guideline [7/5](#)).

See also guideline [7/8](#) for bolting parts (fasteners).

Accepted by WPG on: **29 Jan 2000**

Accepted by Working Group "pressure": **26 Jun 2001**

**Remarks:**

### Guideline 7/7

[Original version as adopted on: **08 Nov 1999**]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.3](#)

**Question:** To what apply the terms "having undergone a specific assessment for materials" of third § of 4.3 of annex I ?

**Answer:** It is the quality (assurance) system of the material manufacturer which shall have undergone a specific assessment for materials (and not the competent body).

**NOTE:** see also guideline [7/2](#).

Accepted by WPG on: **05 Jul 1999**

Accepted by Working Group "pressure": **08 Nov 1999**

**Remarks:**

### Guideline 7/8

[Original version as adopted on: **07 Nov 2000**]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4](#)

**Question:** What are the certificates required for bolting parts?

**Answer:** The bolting parts (screw, nut, stud, etc) are joining components.

When these components contribute to the pressure resistance, their materials shall fulfil the relevant requirements of annex I, section 4.

Regarding section 4.3 of Annex I, a bolt is not considered to be a main pressure bearing part unless its failure would result in a sudden discharge of pressure energy.

When bolts are used as

- main pressure bearing parts a certificate of specific product control is required (unless the item of pressure equipment itself is in Category I)
- pressure bearing parts a test report is sufficient,
- non pressure bearing part a certificate of compliance is sufficient (refer to guideline [7/5](#)).

Accepted by WPG on: **02 Oct 2000**

Accepted by Working Group "pressure": **07 Nov 2000**

**Remarks:**

### Guideline 7/9

[Original version as adopted on: *24 Mar 2000*]

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4](#)

**Question:** Can a material manufactured according to a standard or another publicly available specification for which a European Approval of Materials (EAM) is available, but for which the inspection document only refers to the standard or the specification on which the EAM has been based, be used for pressure equipment manufactured under the PED ?

**Answer:** Yes, if the EAM does not have any additional technical specification compared to the standard or the specification. The inspection document must satisfy the requirements of section 4.3 of Annex I (see also guidance [7/5](#)).

Accepted by WPG on: **26 Oct 1999**

Accepted by Working Group "pressure": **24 Mar 2000**

**Remarks:**

### Guideline 7/10

[Original version as adopted on: *03 Oct 2002*]

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 3.1.2](#) , [Annex I Section 3.1.5](#) , [Annex I Section 4.1](#) , [Annex I Section 4.2](#) , [Annex I Section 4.3](#)

**Question:** What are the requirements for the documentation and traceability of welding consumables :  
- Inspection documents  
- Suitable procedures for traceability?

**Answer:** Manufacturers of welding consumables shall provide inspection documents affirming compliance with the specification.

Based on section 4 of Annex I and guideline 7/5 manufacturers of welding consumables shall provide test report "2.2" as an inspection document in accordance with the standard EN 10204.

The traceability requirement of Annex I section 3.1.5 applies also for welding consumables. It can be maintained by procedural methods that cover receipt, identification, storage, transfer to production, temporary storage and use in production, availability of correct inspection documents at the final inspection (see also guideline [7/4](#)).

**NOTE :**

Welding consumables are defined by trade name, designation and relevant EN classification standard. Inspection documents of welding consumables should give test results, for technical characteristics according to designation and classification standard, such as:

- Chemical composition of welding filler metal or all-weld metal as appropriate
- Tensile properties of all-weld metal: tensile and yield strength, elongation
- Impact properties of all-weld metal at temperature according to designation. Test results are based on non-specific inspection and testing. They can be given for example as typical values based on quality control tests.

Accepted by WPG on: **19 Jun 2002**

Accepted by Working Group "pressure": **03 Oct 2002**

**Remarks:**

### Guideline 7/11

[Original version as adopted on: *29 Jun 2000*]

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I](#)

**Question:** Do the essential safety requirements of annex I apply to pressure equipment manufactured from plastic, GRP and other non metallic materials ?

**Answer:** Yes

Accepted by WPG on: **15 Dec 1999**

Accepted by Working Group "pressure": **29 Jun 2000**

**Remarks:**

### Guideline 7/12



[Original version as adopted on: 29 Jun 2000]

Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"

Guideline related to: [Annex I Section 4](#)

**Question:** Shall welding consumables and other joining materials comply with harmonised standards, European approvals of materials or particular material appraisal ?.

**Answer:** No

**Reason:** The PED does not require that these materials fulfil the requirement of Annex I. 4.2b).

Accepted by WPG on: 17 Feb 2000

Accepted by Working Group "pressure": 29 Jun 2000

Remarks:

#### Guideline 7/13

[Original version as adopted on: 27 Jan 2003]

Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"

Guideline related to: [Annex I Section 4.1](#) , [Annex I Section 7.5](#)

**Question:** What is meant by *Where appropriate*, in the context of section 4.1a when it refers to the quantitative values of section 7.5?

**Answer:** *Where appropriate* refers to steel, since this is the only material cited in 7.5.  
For impact properties see also guideline [7/17](#).

Accepted by WPG on: 05 Dec 2002

Accepted by Working Group "pressure": 27 Jan 2003

Remarks:

#### Guideline 7/14

[Original version as adopted on: 26 Jun 2001]

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to: [Annex I Section 7.1.2](#)**

**Question:** What does the exclusion of fine-grained steel in the first dash of section 7.1.2 of Annex I of the directive mean ?

**Answer:** Those fine grained steels are micro-alloyed steels for pressure purposes as, for example, those given in EN 10028-3 or in EN 10222-4.

For these steels, the quantitative value of permissible membrane stress stated in Annex I section 7.1.2 does not apply. However an equivalent overall level of safety must be achieved (refer to guideline [8/6](#)).

Accepted by WPG on: **11 Jan 2001**

Accepted by Working Group "pressure": **26 Jun 2001**

**Remarks:**

**Guideline 7/15**

**[Original version as adopted on: 03 Apr 2001]**

**Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"**

**Guideline related to: [Annex I Section 4.2](#)**

**Question:** Annex I, section 4.2, first indent authorises the use of materials which comply with harmonised standard.  
Is this route still valid for a material which have characteristics higher (better) than, or complementary to those included in the harmonized standard?

**Answer:** Yes.  
Characteristics which are higher (better) than, or complementary to those specified in the standard does not preclude the material to comply with the route of harmonised standard, as described in Annex I, section 4.2, first indent.

Those characteristics shall be included in a specification to which the material manufacturer will affirm compliance, as requested by Annex I, section 4.3.

See also guideline [7/1](#)

Accepted by WPG on: **03 Apr 2001**

Accepted by Working Group "pressure": **03 Apr 2001**

**Remarks:**

**Guideline 7/16**

[Original version as adopted on: *19 Oct 2001* and modified on *31 Mar 2006*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.3](#)

**Question:** The Directive 97/23/CE considers the case of "a material manufacturer who has an appropriate quality-assurance system, certified by a competent body established within the Community and having undergone a specific assessment for materials". How should this requirement be understood in practice ?

**Answer:** In practice, this requirement is satisfied when the material manufacturer has a quality management system of at least ISO 9002:1994 type, certified by a competent body (according to the definition given in guideline [7/2](#)) established as a legal entity within the European Community, and when the field of validity of the certification specifies production of material indicating the relevant material types.

The specific assessment of the quality system shall properly cover all the relevant processes and material properties referred to in the material specifications, and at-tested in the material certificates.

A single reference to section 4.3 of Annex I of PED is not sufficient to validate the quality system of the material manufacturer. The reference document for quality-assurance which has been used shall be identified. Reference to the PED in the quality system certification is not a mandatory requirement.

**Note:** See also guidelines [7/5](#), [7/7](#) and [9/5](#).

Accepted by WPG on: **28 Nov 2005**

Accepted by Working Group "pressure": **31 Mar 2006**

**Remarks:**

**Guideline 7/17**

[Original version as adopted on: *27 Jan 2003* and modified on *18 Apr 2007*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.1](#) , [Annex I Section 7.5](#)

**Question:** What approach can be used to decide if a steel grade selected for a pressurized part requires specific impact properties?

**Answer:**

1. The philosophy of the approach outlined below takes account of the hazard analysis performed by the manufacturer in relation to the toughness

necessary for the identified failure modes (e.g. brittle fracture) in the finished pressure equipment.

2. The exception concerns “ductile materials which are not subject to a ductile/brittle transition at the foreseeable conditions the equipment will be exposed to”.

Examples of such materials are: austenitic stainless steels.

Some design codes provide specific rules for the avoidance of brittle fracture that takes account of the anticipated or actual operating conditions prevailing, e.g. material, thickness, temperature, etc. Where the application of these rules indicate that the material will not behave in a brittle manner and all aspects of the chosen design code have been followed, sufficient confidence is gained in the behaviour of the material not to require specified impact properties. When these design codes are applied also other items need to be taken into account (see item 3 below).

3. The justification for omission of the impact properties shall be based on the most adverse possible combination of all elements of the steel grade specification, such as:

- the full permissible range of the chemical analysis,
- the extreme mechanical properties,

as documented and permissible in the specification and not on the values of the actual deliveries.

The consequence of the worst combination of chemistry must be considered because the specified range of chemical analysis for some materials could result in brittle behaviour,. Where appropriate, such materials could be accepted if the chemical composition and mechanical properties are restricted in the purchase order and in the particular material appraisal to such levels that, from experience, do not give rise to brittle fracture.

EXAMPLES include Manganese-Carbon ratio, Carbon, Sulphur, Phosphorus content, Aluminium to Nitrogen ratio.

Other restrictions may include:

- avoiding inter-metallic phases,
- avoiding large grain sizes,
- placing limits on mechanical properties.

Manufacturers and Notified Bodies must demonstrate that they have taken such factors into account in documenting the necessary PMAs.

4. Furthermore subsequent manufacturing processes affecting the impact properties of the material shall be taken into account, when making the above assessment.

Following all the rules in the design code should generally ensure that this requirement is met ; however additional requirements may also be necessary to ensure that all relevant ESRs have been met.

EXAMPLES: forming, heat treatment, welding.

5. However, verification testing of specified impact property may not be required in cases where there is no doubt about the fulfilment of the essential safety requirement on sufficient toughness to avoid brittle fracture.

EXAMPLES: Most Austenitic Stainless Steels.

**Reason:** Impact property values are the most common way to fulfil the essential safety requirement of toughness specified in annex I Section 4.1a. Although impact testing of materials is the commonly accepted route to demonstrate materials have specified minimum toughness, it is not the only

route.

EXAMPLES: Restrictions on operating temperatures, Fracture mechanics.

**Note 1:** Every harmonized European steel standard has specified impact properties.

**Note 2:** A "history of safe use" alone cannot replace the need for the specification of impact properties. This notion is inextricably linked to a particular code, set of safety factors and safety philosophy and can therefore not necessarily be transferred to a different safety philosophy/concept. Following the requirements of an established design Code alone does not provide a "presumption of conformity" and a simple claim by the manufacturer that they "have followed the specified Code" is not in itself justification. Established Codes may be used as the basis for meeting the essential safety requirements however it is necessary to compare the selected Code requirements to the essential safety requirements and identify and address any deviations. This requires those using the Code to have a good understanding of the principles involved, rather than mechanistic following of rules.

Accepted by WPG on: **30 Jan 2007**

Accepted by Working Group "pressure": **18 Apr 2007**

**Remarks:**

#### Guideline 7/18

[Original version as adopted on: *27 Feb 2002*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.1](#) , [Annex I Section 7.5](#)

**Question:** Do the essential safety requirements on materials specified in Annex I section 4.1 and section 7.5 apply to the base material or to the pressure equipment ?

**Answer:** They apply to the pressure equipment in its entirety, i.e. also to the heat affected zones of a weldment, but not to the non pressure-bearing parts.

**Note:**

Subsequent manufacturing processes affecting properties of the base material shall be taken into account when specifying the properties of the base material, as per Annex I, sections 3.1.1, 3.1.2 and 3.1.4 of PED.

Accepted by WPG on: **22 Nov 2001**

Accepted by Working Group "pressure": **27 Feb 2002**

**Remarks:**

#### Guideline 7/19

[Original version as adopted on: 19 Jan 2005]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Article 1 Paragraph 2.1.2](#) , [Annex I Section 3.1](#) , [Annex I Section 4.3](#) , [Annex I Section 7.2](#)

**Question:** Which requirements apply to components, such as dished ends, bolts, flanges, welded fittings etc, which are placed on the market as such?

**Answer:** To be incorporated into an item of pressure equipment, components which are manufactured from materials such as plates, coils and bars shall meet all the relevant essential safety requirements related to the manufacturing process used ; for instance in the manufacturing of welded dished ends, sections 3.1 and 7.2 of Annex I are relevant in addition to section 4.

In order to prove the conformity to the PED of the pressure equipment containing the component the equipment manufacturer will need relevant documents from the component supplier :

-Material certificates (of the plates, coils, bars ...), and as relevant :

- Welding procedure approvals,
- Welder/welding operator approvals,
- Non Destructive Testing operator qualifications,
- Non Destructive Testing reports,
- Destructive Testing reports,
- Forming and heat treatment information,
- etc.

This information may be in the form of a component certificate.

The requirement in Annex I section 4.3 is not however intended for a component manufacturer, who is not a material manufacturer in the context of PED, even if he modifies the mechanical properties of the material.

Forgings (including forged flanges), castings and seamless tubes are generally considered to be materials. Fittings made from these "materials" without subsequent welding or other process which could alter the material characteristics are also considered to be materials. As regard welded tubes, see guideline [7/25](#).

**Note :** Current practice may require components to be delivered with certificates based on standard EN 10204 *Metallic products. Types of inspection documents* or corresponding requirement when they are placed on the market as such. The PED does not preclude supplying such certificates with components.

See also guidelines [1/9](#), [1/22](#), [4/3](#), [7/5](#), [7/6](#), [7/8](#), [7/18](#) and [7/25](#).

Accepted by WPG on: **15 Dec 2004**

Accepted by Working Group "pressure": **19 Jan 2005**

**Remarks:** Revised 19-Jan-2005

#### Guideline 7/21

[Original version as adopted on: *23 May 2002* and modified on *18 Apr 2007*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Article 11](#) , [Annex I Section 4.2](#)

**Question:** May a notified body perform a particular material appraisal at the request of a material manufacturer?

**Answer:** No

The PMA is performed on request of a pressure equipment manufacturer.

If the material manufacturer wants to have his material approved by a notified body the proper way to proceed is to request European approval for material in accordance with Article 11, if the material is not covered by a European harmonised standard under the PED and cited in Official Journal of the European Union (OJEU).

**Note:** For the content of a PMA refer to the Guiding principles in document PE-03-28 accepted in November 2006 (downloadable from the PED website).

Accepted by WPG on: **30 Jan 2007**

Accepted by Working Group "pressure": **18 Apr 2007**

**Remarks:**

#### Guideline 7/22

[Original version as adopted on: *28 Apr 2003*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 4.1](#) , [Annex I Section 7.5](#)

**Question:** What is meant by the following two terms:

*Other values* , and *other criteria* , in the context of section 7.5 ?

**Answer:** *Other criteria* refers to further criteria depending e.g. on the type/dimension/product form and strength level of steel or mode of operation, which shall be taken into account to prove its toughness and ductility.

*Other values* refers to those other criteria which can result in more demanding values for elongation or bending rupture energy or specified values for additional properties.

See also guideline [8/6](#) for the application of section 7.

Accepted by WPG on: **06 Mar 2003**

Accepted by Working Group "pressure": **28 Apr 2003**

**Remarks:**

#### Guideline 7/23

[Original version as adopted on: **28 Apr 2003**]

Pressure equipment directive 97/23/EC  
Commission's Working Group "Pressure"

Guideline related to: [Annex I Section 4](#)

**Question:** With which requirements of Annex I section 4 does the material used for a gasket have to comply?

**Answer:** The main function of a gasket is to ensure tightness. Its material needs to fulfil only the relevant requirements of 4.1, 4.2 (a) and the first paragraph of 4.3.

Accepted by WPG on: **06 Mar 2003**

Accepted by Working Group "pressure": **28 Apr 2004**

**Remarks:**

#### Guideline 7/24

[Original version as adopted on: **03 Nov 2003** and modified on **17 Dec 2003**]

Pressure equipment directive 97/23/EC



**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 2.2.3](#) , [Annex I Section 4.3](#)

**Question:** Annex I section 4.3 of the Pressure Equipment Directive (PED) requires that the material manufacturer must prepare documentation affirming compliance with the specification required by the equipment manufacturer.  
Does this requirement mean that material properties used in the design of the pressure equipment must be based on those affirmed (guaranteed) by the material manufacturer?

**Answer:** Yes, the material properties used in design of the equipment, e.g. yield strength and impact properties, must be based on those of the specification which are affirmed by the material manufacturer.

**Note 1:** This does not mean that the values of the specification need to be written on the certificate. It is sufficient for the material manufacturer's certificate to make reference to the specification where the appropriate values are included. See also guideline [7/17](#) for the need of verification testing of specified impact properties.

**Note 2:** See also guideline [7/18](#) for the relationship between the essential safety requirements and the properties of the base material.

Accepted by WPG on: **19 Jun 2003**

Accepted by Working Group "pressure": **17 Mar 2004**

**Remarks:**

### Guideline 7/25

[Original version as adopted on: *07 Sep 2004*]

**Pressure equipment directive 97/23/EC**  
**Commission's Working Group "Pressure"**

**Guideline related to:** [Annex I Section 3.1.2](#) , [Annex I Section 3.1.3](#) , [Annex I Section 4.3](#)

**Question:** How shall welded tubes be considered for the application of the Pressure Equipment Directive (PED)?

**Answer:** Continuously machine-welded tubes, i.e. tubes made from coils as starting materials in an automatic process, which are usually heat treated after welding shall be in the terms of certification procedures considered as materials provided the essential safety requirements (ESRs) of Annex I section 4 "Materials" as well as applicable ESRs of Annex I section 3 "Manufacturing" (in particular 3.1.2 and 3.1.3) are fulfilled.

Further the manufacturer of such tubes shall affirm compliance of the welded tube to the specification.

In general, the inspection document shall take the form of a certificate of specific product control, where shall be found the references to the competent third party approval of welding procedures and personnel and to the recognised third party approval of non destructive personnel (for categories III and IV).

When the use of the welded tube is limited to pressure equipment of category I, a statement in the test report confirming that personnel and welding procedures are qualified according to suitable internal operating procedures is sufficient.

In application of guideline 7/16, where the welded tube manufacturer has a certified quality system, this system shall properly cover not only the relevant material properties referred to in the tube specifications, but also the manufacturing process of the welded tubes (in particular welding and NDT).

**Note:** This implies that e.g. tubes made from plates are to be considered components, see guideline [7/19](#).

Accepted by WPG on: **15 Apr 2004**

Accepted by Working Group "pressure": **07 Sep 2004**

**Remarks:**