

Guidelines

5/18/07

5. ESRs on Design

Guideline 5/1	
<p>[Original version as adopted on: 28 Jan 1999]</p> <p>Pressure equipment directive 97/23/EC Commission's Working Group "Pressure"</p> <p>Guideline related to: Annex I Section 2.2.2 , Annex I Section 2.2.4</p> <p>Question: How should the condition related to the experimental design method without calculation in Annex I, Section 2.2.2 be interpreted stipulating that: Experimental design may be carried out without any calculation in accordance with Section 2.2.4 if the product of the maximum permissible pressure PS and the volume V is less than 6000 bar.litre or the product PS.DN is less than 3000 bar ?</p> <p>Answer: It shall be understood that :</p> <ul style="list-style-type: none"> - the condition $PS.V < 6000 \text{ bar.L}$ is applicable to equipment for which the classification criterion in annex II is the volume (vessels, boilers and when applicable, accessories, etc.); - the condition $PS.DN < 3000 \text{ bar}$ is applicable to equipment for which the classification criterion in annex II is the nominal size (piping and when applicable, accessories, etc.). <p>Note: Module B1 is not applicable to equipment validated by experimental design.</p>	
Accepted by WPG on: 27 Nov 1998	
Accepted by Working Group "pressure": 28 Jan 1999	
Remarks:	

Guideline 5/2	
<p>[Original version as adopted on: 29 Jun 2000]</p> <p>Pressure equipment directive 97/23/EC Commission's Working Group "Pressure"</p> <p>Guideline related to: Annex I Section 2.11.2 , Annex I Section 2.12</p> <p>Question: In respect of pressure limiting devices, does the PED require that the permitted short duration pressure surge of 1,1 PS be maintained when the equipment is exposed to external fire conditions ?</p> <p>Answer: The 1,1 PS restriction does not apply to fire.</p>	

Reasons: The requirement in Annex I section 2.12 for external fire refers to damage limitation, and does not serve the purpose of pressure limiting device in normal operation.

Accepted by WPG on: **05 May 2000**

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

Remarks:

Guideline 5/3

[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 2.8](#) , [Annex I Section 3.1.1](#) , [Annex I Section 3.2.1](#) , [Annex I Section 3.2.3](#)

Question: Is leakage of pressure equipment covered by PED ?

Answer: Yes, whenever internal or external leakage (i.e. leakage to atmosphere/environment) is a hazard due to pressure, it is covered by the essential safety requirements of PED.

All hazards arising from pressure shall be assessed for the intended use and the intended contained fluid(s), not only the requirement for sufficient strength but also internal/external leakage and all functional requirements related to pressure hazards (see also guideline [1/15](#)).

For pressure equipment where the detailed specific use is not known by the equipment manufacturer, the above consideration shall be addressed by the assembly manufacturer as per Annex I section 2.8.

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

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

Remarks: The version of 26 June 2001 is revised to make clear that this guideline does not only apply to valves.

Guideline 5/4

[Original version as adopted on: *23 May 2002*]

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

Guideline related to:

Question: Shall all types of portable extinguishers be equipped with protective devices against over-pressure ?

Answer: The prevention of danger due to overpressurization of fire extinguishers shall be achieved for all foreseeable circumstances either by eliminating the hazard by the design, or by providing a protective device.

The risk of external fire shall be adequately considered according to the type of fire extinguisher.

Due to the fact that portable extinguishers are very wide-spread and are also consumer products, their possible misuse (over-filling, use of incorrect cartridge &) must be carefully assessed. Written instructions alone cannot be regarded as sufficient.

Examples: In general the risk of over-filling is significant for cartridge type fire extinguishers, which are manually (re-)filled.

External fire will cause high risks for CO₂ fire extinguishers (cylinders).

In such cases protective devices or similar methods shall be taken to meet damage limitation requirements.

Reservation from Italy.

Accepted by WPG on: **09 Apr 2002**

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

Remarks:

Guideline 5/5

[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 2.1](#) , [Annex I Section 2.2.4](#)

Question: Is it possible that the sample to be tested for the experimental design method be produced without its thicknesses reduced by the corrosion allowance ?

Answer: Yes, but the corrosion allowance as well as other characteristics are to be used as corrective factors to determine the minimum value for the test pressure, as stated in 2.2.4 a) second paragraph.

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

Accepted by Working Group "pressure": **27 Jan 2003**

Remarks:

Guideline 5/6

[Original version as adopted on: *17 Mar 2004* and modified on *18 Apr 2007*]

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

Guideline related to: [Article 1 Paragraph 2.1.3](#) , [Annex I Section 2.10](#) , [Annex I Section 2.11](#)

Question: Does the essential safety requirement 2.10, which deals with protective devices, give the choice of the use of a safety accessory or of the use of a monitoring device ?

Answer: No.

When, under reasonably foreseeable conditions, the allowable limits could be exceeded, a protective device in the form of a safety accessory must be provided, with the addition, where appropriate, of a monitoring device.

Note: Annex I section 2.11 sets out the essential safety requirements for the safety accessories that do not apply to monitoring devices. In particular, safety accessories shall comply with the essential safety requirements by appropriate design principles. This is in order to obtain suitable and reliable protection that does not rely on instructions for regular supervision during use.

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Remarks:

Guideline 5/7

[Original version as adopted on: *28 Jun 2005*]

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

Guideline related to: [Annex I Section 2.2.2](#)

Question: Are the limits in Annex I section 2.2.2 applicable to components of pressure equipment (like manhole covers, special flanges, etc)?

Answer: No. The limits specified in Annex I section 2.2.2 second indent concern the item of pressure equipment, not its components.

The results of the experimental method applied to components are taken into account in the design of the item of pressure equipment.

See also guideline [4/9](#).

Accepted by WPG on: **20 Apr 2005**

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Remarks: