

Position Paper **concerning the applicability of the Directive 2014/68/EU** **“Pressure equipment” for pumps and pump units** **30/11/2019**

Introduction

The Directive “Pressure equipment” 2014/68/EU from 14 May 2014 came into force on 19 July 2016.

This is a recast of Directive 97/23/EC with the goal to adapt the content to a set of European rules and procedures, introduced in 2008 by the “New Legislative Framework – NLF”. The implied changes are mainly administrative and impact mostly the Notified Bodies.

There are no change for products and manufacturer compared to the previous text, hence the present document is simply an update of documents numbers, with the same conclusions for pumps.

The Directive defines the essential requirements regarding safety to be met by pressure equipment. It applies to the design, manufacture and conformity assessment of pressure equipment and assemblies with a maximum allowable pressure PS greater than 0,5 bar.

For the purposes of this Directive “Pressure equipment” means:

- vessels
- piping
- safety accessories
- pressure accessories

NOTE: Where applicable, pressure equipment includes elements attached to pressurised parts, such as flanges, nozzles, couplings, supports, lifting lugs etc.

There are general as well as special requirements to be met by pressure equipment depending of the category (I to IV), applicable to the pressure equipment.

Excluded from the scope of the Directive is equipment classified as no higher than category I of this Directive and covered e.g. by one of the following Directives:

- Directive 2006/42/EC “Machinery” of 30.12.2009
- Directive 2014/35/EU “Electrical equipment designed for use within certain voltage limits” (so-called “Low-Voltage” Directive)
- Directive 2014/34/EU “Equipment and protective systems intended for use in potentially explosive atmospheres” (Atex)

Conclusions and measures

The Members of EUROPUMP understood and agreed, that pumps and pump units are excluded from the scope of the Pressure Equipment Directive.

An “EC-Declaration of conformity” and the CE-marking as defined by the Pressure Equipment Directive (PED) are not applicable for pumps and pump units.

Pumps and pump units are subject of the “Machinery”-Directive 2006/42EC and are supplied with a “Declaration by the manufacturer” and/or with an “EC-Declaration of conformity” as well as with the CE-marking as defined by the “Machinery”-Directive.

This also encompasses conformity with the “Low Voltage”-Directive.

Pumps and pump units may also be subject to the Directive 2014/34/EU and other Directives depending upon the intended use.

If ancillary components are needed to complete the pump unit, which are subject of the PED, the pump manufacturer/supplier shall select only such equipment, which is in conformity with the requirements of the PED and bears the CE-marking within the meaning of the PED.

Such items do not make the complete pump unit subject to the PED.

According to article 1, paragraph 2 (j), of this Directive furthermore are excluded from the scope:

Equipment comprising casings or machinery where the dimensioning, choice of material and manufacturing rules are based primarily on requirements for sufficient strength, rigidity and stability to meet the static and dynamic operational effects or other operational characteristics and **for which pressure is not a significant design factor.**

In 1998, EUROPUMP had asked the Working group “Pressure” of the European Commission to explain in particular how to interpret the wording of article 1.2(j), namely “Equipment comprising casings or machinery ...for which pressure is not a significant design factor”.

On 8 November 1999, the Working group “Pressure” of the European Commission approved the relevant commentary fixed in **Guideline A/11 (formerly Guideline 1/11)** (see Annex A, WPG A/11).

This statement was reinforced for pumps by the **Guideline A/19 (formerly Guideline 1/19)** (see Annex B, WPG A/19).

GUIDELINE A/11; (initial version as adopted on 08-Nov-99, revised version adopted on 08-Jan-2016, only editorial changes due to re-numbering due to new Directive)

Pressure equipment directive 97/23/EC

Commission's Working Group "Pressure" - Guideline related to: Article 1 Paragraph 2 (j).

Question:

How can article 1 paragraph 2 (j) more specifically be understood, especially the wording "for which pressure is not a significant design factor"?

Answer:

1. Article 1 paragraph 2 (j) excludes pressurised equipment comprising casings or machinery from the scope of the PED

a) if this equipment is primarily dimensioned for loads other than pressure, i.e. for which pressure is not the significant design factor and

b) if it is primarily designed to move or rotate or fulfil other functions than pressure containment.

2. Such equipment may include

- engines including turbines and internal combustion engines;
- steam engines, gas/steam turbines, turbo-generators, compressors, pumps and actuating devices.

3. For such equipment, pressure can be considered as not being a significant factor, if other factors alone or together are more significant than pressure. Other factors are, e.g.:

- dynamic loads with vibrations or very high number of cycles;
- thermal loads together with a complicated form of structure;
- stiffness of the structure because of external mechanical loads or requirements related to high weight;
- requirements related to low elongation, low change of diameter or low other deformation because of functional requirements to rigidity.

This shall be decided on a case by case basis, taking into account established safe industrial practice.

4. An over-dimensioning as such shall not result in exclusion from the PED with regard to article 1 .2 (j).

Note 1

No factor is included in the requirements of the PED. Any factor given in a guideline would therefore go beyond the PED and should be avoided.

Note 2

If a factor were used to decide whether the requirements of the PED are applicable or not, over dimensioning could result in a case where pressure equipment need not fulfil the requirements of the PED. This is not acceptable.

Note 3

To decide on the exception with a factor of over dimensioning would consequently result in the necessity of a detailed stress analysis, especially if this factor would have been connected to the primary membrane stress. This is far beyond the present established industrial practice.

Note 4

Furthermore, there is a danger that the more important influences explained in paragraphs 1 to 3 of the above answer could be overlooked if the decision whether the pressure is a significant design factor were based on a factor of over dimensioning only.

Accepted by Working Party Guidelines (WPG) on: 15/10/2015

Accepted by Working Group Pressure (WGP) on: 08/01/2016

Annex B

GUIDELINE A/19; (initial version as adopted on 24-Mar-00, revised version adopted on 08-Jan-2016, only editorial changes due to re-numbering due to new Directive)

Pressure equipment directive 97/23/EC

Commission's Working Group "Pressure" - Guideline related to: Article 1 Paragraph 3 (f), Article 1 Paragraph 3 (j).

Question:

Are fluid power components and systems using liquids or gases of group 2 covered by PED?

Answer: For fluid power components and systems using liquids or gases of group 2 according to Article 13 paragraph 1 (b), the following applies:

(1) Excluded from PED

(1.1) due to exclusion of Article 1 paragraph 2 (f) (e.g. machinery directive)

- piping and connecting devices for liquids of group 2 when $DN \leq 200$ whatever the pressure is, and when $DN > 200$ and $PS \leq 500$ bar
- piping and connecting devices for gases of group 2 when $DN \leq 100$ or $PS \leq 3500$ bar
- pressure accessories (e.g. filter housing) no higher than category I
- fluid power actuators, pumps and control valves no higher than category I.

(1.2) due to exclusion of Article 1 paragraph 2 (j) (refer to guideline [A/11](#))

- fluid power actuators (e.g. motors, cylinders,)
- fluid power pumps
- fluid power control valves (distributors).

(2) Included in the PED

- all accumulators (bladder, piston and diaphragm types)
- pressure equipment not excluded by (1) above.

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