

**Guideline****1/11****CLAP****FORM N°42****Version : 8****Directive 97/23/EC****Keywords :**

Pressure

Design

Significant factor

Compressor

**Directive references:**

Article 1 § 3.10 - 97/23 EC

**Adopted by WPG:** 08/11/1999**Adopted by CLAP:** 08/11/1999**Subject:** Exclusion – interpretation of Article 1 § 3.10**Question:** How can 1 § 3.10 more specifically be understood, especially the wording "for which pressure is not a significant design factor"?**Answer:**

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1. Article 1 § 3.10 excludes pressurized 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, actuating devices and curing moulds for tyres.

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 § 3.10

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**Answer:** 2/2

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 was 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 requirement 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 could be overlooked if the decision whether the pressure is a significant design factor were based on a factor of over dimensioning only.

Modifications compared to the previous adopted version: Editorial correction on 2004-09-16