

Directive 97/23/CE

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Pressure

Proof test

Final inspection

Quantitative requirement

Design

Directive reference:

Annex I § 7.4 - 97/23 EC

Adopted by CLAP:

18/03/2009

**Subject:** ESR on manufacturing – Test pressure**Question:**

The test pressure, as defined in Annex I § 7.4 shall take into account the maximum loading to which the pressure equipment may be subject in service. Does it mean that the value of the test pressure must be determined by taking creep into account?

**Answer:**

No.

Due to its short duration, the pressure test can confirm the strength of equipment only with respect to the time-independent failure hazards. It cannot provide any indication on its long-term strength, in particular on its strength against the degradation of the material with time when the service temperature lies inside the creep range.

Thus, creep should not be taken into account for the determination of the test pressure.

The temperature correction to be applied to calculate the test pressure shall be based, inside the creep range as below, on the short term mechanical characteristics of materials, at the room temperature and at the service temperature respectively.

Note 1: When the service temperature lies inside the creep range, such characteristics can be unavailable from the material standards. Adequate solutions, for example acceptable extrapolation calculations, can be defined in the harmonized standards or, if not, confirmed by the Notified Body.

Note 2: This analysis is in conformity with 10.2.3.3 .1 of EN 13445-5.

Creep is taken into account in the equipment design.

The resistance of the equipment against the time-dependent failure hazards is checked by the in-service inspections.

Modifications compared to the previous adopted version: taking into account of EN 13445-5/A.10 relative to test pressure.