

CE Pressure Equipment Directive Basics

Directive 2014/68/EC

The Pressure Equipment Directive (PED) was recast in 2014, with the new version of the Directive (2014/68/EU) becoming mandatory as of July 20, 2016. Therefore, if your product involves fluids, vapors, or gases under pressure, at some point in the product's operating cycle, it is important for you to determine if the PED applies to your product.

PED Basics:

- 1) **Pressure Specification:** The PED applies to products and components with a maximum allowable pressure of at least 0.5 Bar (7.25 PSIG).
- 2) **Fluid Group:** It is important to classify the fluids, liquids or vapors in your system as Group I or Group II in accordance with Article 13 of the Directive. The Fluid Classification is critical in determining the scope of coverage. Note that fluids may include a suspension of solids.
- 3) **Pressure Equipment Categories:** The Pressure Equipment Directive separates the requirements into two categories:
 - a) Vessels consisting of single or multiple chambers that are pressurized. Vessel requirements are based on the volume of the vessel.
 - b) Piping which includes hosing, tubing, fittings, joints, and heat exchangers that are pressurized. Piping requirements apply to everything from a single pipe to a system of pipes. Piping requirements are based on the nominal diameter of the pipe expressed in DN which is the metric pipe size (DN = "diameter nominal").
 - c) Safety Accessories which are devices whose sole function is to protect the equipment against maximum limits (temperature or pressure). Examples of safety devices include pressure relief valves, limiting devices, etc.
 - d) Pressure Accessories which are devices that perform an intended function and can contain pressure.
- 4) **PED Product Exemptions:** The Pressure Equipment Directive includes several exemptions for products covered by other Directives including:
 - a) Simple Pressure Vessels covered by the Simple Pressure Vessel Directive (2014/29/EU).
 - b) Aerosol Dispensers covered by the Aerosol Dispenser Directive (75/324/EEC).
 - c) Components for motor vehicles covered by the Motor Vehicle Directive (2007/46/EC), the Agriculture and Forestry Vehicles Regulation (No. 167/2013), or the L Category Vehicles Regulation (No. 168/2013 – mopeds, motorcycles, ATV's, quads, etc.).



- 5) Product Classification Category: The product is to be classified by Category in accordance with Annex II of the Directive. The classification is dependent upon the Hazard Level.
- The Hazard Level is determined for Vessels by the formula $PS \times V$ where PS is the maximum allowable pressure and V is the vessel volume.
 - The Hazard Level is determined for Piping by the formula $PS \times DN$ where PS is the maximum allowable pressure and DN is the nominal metric pipe size.
- 6) PED Equipment Exemptions: Products evaluated to several common CE Directives are exempt from the PED as long as the product is not classified above Category I per Article 13 and Annex II. Exemptions include:
- a) Equipment evaluated to the Machinery Directive (2006/42/EC) - products whose primary hazard is a moving part.
 - b) Equipment evaluated to the Low Voltage Directive (2014/35/EU) - electrical products such as those evaluated to UL standards in the United States.
 - c) Equipment evaluated to the Medical Device Directive (93/42/EEC) - medical products such as those covered by the FDA in the United States.
 - d) Equipment evaluated for use in a Hazardous Environment for ATEX certification (2014/34/EU) - products for use in areas classified by Class/Zone/Division.
 - e) Equipment evaluated for use per the Gas Appliances Directive (2009/142/EC).
- 7) Essential Safety Requirements: Most products that fall under the Pressure Equipment Directive must comply with the “Essential Safety Requirements” (ESRs) specified in Annex I of the PED. The ESRs include requirements related to the design, materials, and manufacturing of pressure components and pressure equipment. We will review the PED Essential Safety Requirements details in a future whitepaper.
- 8) Path to Conformity: The path to conformity is determined based on the fluid classification, the product classification category, and if the product involves fired or otherwise heated processes. In some cases, a PED Notified Body is required to be involved in the compliance verification process.

Does Your Product Need to Comply with the CE Pressure Equipment Directive?

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