

Pressure Equipment Directive 97/23/EC

What does it cover?

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What does it cover?

The directive affects manufacturers of items such as vessels pressurized storage containers, heat exchangers, steam generators, boilers, industrial piping, safety devices and pressure accessories. Such pressure equipment is widely used in the process industries (oil and gas, chemical, pharmaceutical, plastics and rubber and the food and beverage industry), high temperature process industry (glass, paper and board), energy production and in the supply of utilities, heating, air conditioning and gas storage and transportation.

It covers pressure equipment and assemblies with a maximum allowable gauge pressure PS greater than 0.5 bar. Pressure equipment means vessels, piping, safety accessories and pressure accessories. Assemblies, in respect of the directive, mean several pieces of pressure equipment assembled to form an integrated, functional whole – and also fall within the scope of the directive.

Is there any pressure equipment exempted from the scope of the directive?

Yes, and some are important exceptions. The following is an abbreviated list of these exceptions:

- Networks for the supply, distribution and discharge of water and associated equipment
- Equipment covered in the Simple Pressure Vessel Directive
- Equipment covered by the Directive relating to Aerosol Dispensers
- Equipment intended for the functioning of vehicles
- Equipment which falls under a low risk category (more accurately classified under Category 1 - see later) and is covered by one or more of the following directives:
 - Machinery Directive
 - Lifts Directive
 - Low voltage Directive
 - Medical Devices Directive
 - Appliances burning gaseous fuels Directives
 - Equipment for use in potentially Explosive Atmosphere Directive
- Equipment designed and intended for nuclear use



- Equipment which does not have pressure as its main design concern. Such equipment may include: engines including turbines and internal combustion engines, compressors, turbo-generators and pumps.
- Blast furnaces, dust extractors and reducing cupolas.
- Enclosures of high-voltage electrical equipment



- Pressure equipment consisting of flexible casing (e.g. tyres, air cushions)
- Exhaust and inlet silencers
- Bottles or cans for carbonated drinks
- Ships, rockets, aircraft and mobile off-shore units.

Does the type of fluid contained in the pressure equipment effect the Directive requirements?

Yes, the directive does take in consideration the level of hazard of the fluid. Depending on the fluid present, the pressure equipment will fall under a different classification, leading to different requirements.

For the extent of this directive all fluids are classified in either of two Groups;

Group 1, which includes all dangerous fluids, is fluids that are:

- Explosive
- Extremely or highly flammable
- Flammable (where the maximum allowable temperature is above flashpoint)
- Very toxic
- Toxic
- Oxidizing



that

Group 2, which includes all other fluids not referred in Group 1 – i.e. all non dangerous fluids.

If the pressure equipment, which falls in the scope of this directive, contains more than one fluid then the fluid to be considered is the one presenting the major hazard.

Does all the pressure equipment that falls within the scope of the Pressure Equipment Directive require the CE mark?

No, not all the pressure equipment will require the CE mark and associated conformity assessment procedures.

Under the community regime of the directive, pressure equipment and assemblies above specified pressure and/or volume thresholds must:

- be safe
- meet essential safety requirements covering design, manufacture and testing
- satisfy appropriate conformity assessment procedures
- carry the CE mark and other information.

While on the other hand, pressure equipment and assemblies below the specified pressure/volume thresholds must:

- be safe
- be designed and manufactured according to sound engineering practice.

These volume/pressure threshold levels will be explained next.

How do I determine which conformity assessment procedures apply (if any) for my pressure equipment?

The conformity procedures that apply (if any do apply) to your pressure equipment depend on:

- The type of fluid contained in the pressure equipment.
- The type of pressure equipment (vessel, heated pressure equipment, piping, safety and pressure accessories).
- The Volume and Pressure characteristics of the pressure equipment.

The directive uses this combination of characteristics to establish four suitable pressure equipment categories which are linked to a number of conformity assessment procedures. There is also another category, which does not require any conformity assessment procedure and CE mark. The category of the pressure equipment can be found by referring to the particular relevant graph found in Annex 2, according to the Technical Requirements found in Article 3 of the directive.

What about assemblies involving pressure equipment?

First one must check that the equipment falls within the scope of the directive.

If it does, then one must check if the assembly:

- Is intended for generating steam or superheated water at a temperature higher than 110°C comprising at least on fired or heated item presenting the risk of overheating.
- Is intended to be placed on the market and put into service as an assembly.

In these two cases, the assembly must meet the essential requirements set out by the directive.

If, on the other hand, the intention of the manufacturer is to place on the market an assembly not to be put into service as such but to become part of a bigger assembly or installation, the global conformity assessment according to PED does not need to be applied to this assembly, which in this case will not be CE-marked. In this case, conformity assessment according to PED shall have been conducted for each item of pressure equipment.



What is the difference between the Pressure Equipment Directive, Simple Pressure Vessels Directive and Transportable Pressure Equipment Directive?

The difference between these directives lies in their scope and applicability. As we have already seen the pressure equipment directive has the widest scope, while the other two directives have a narrower scope – as their name imply.

The Simple Pressure Vessels Directive applies to simple pressure vessels, that is any welded vessel subjected to an internal gauge pressure greater



than 0.5 bar which is intended to contain air or nitrogen and which is not intended to be fired.

On the other hand, the Transportable Pressure Equipment Directive deals with transportable pressure equipment, that is it addresses:



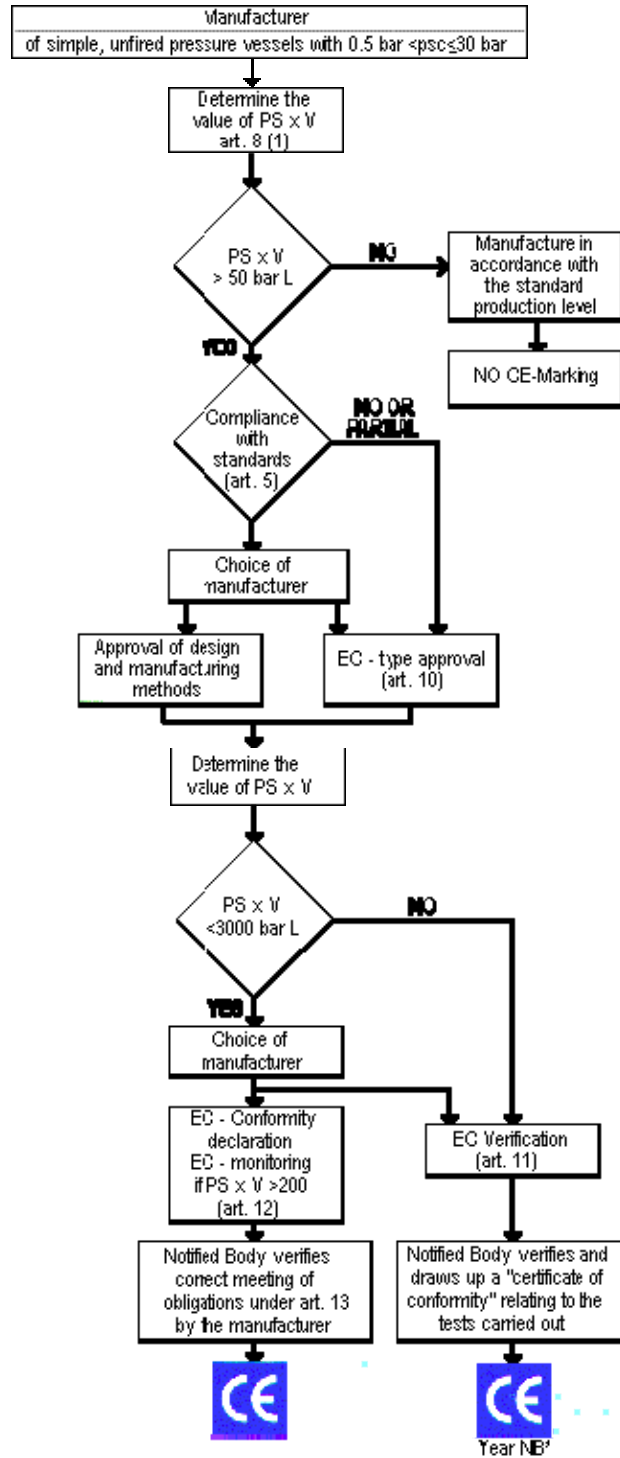
- all receptacles (cylinders, tubes, pressure drums, cryogenic receptacles, bundles of cylinders),
- all tanks, including demountable tanks, tank containers (mobile tanks), tanks of tank wagons, tanks or receptacles of battery vehicles or battery wagons, tanks of tank vehicles,

used for the transport of gases and for the transport of certain dangerous substances of other classes indicated in the table below, including their valves and other accessories used for transport.

UN number	Class	ADR/RID figures	Dangerous substances
1051	6.1	1	Stabilised hydrogen cyanide
1052	8	6	Anhydrous hydrogen fluoride
1790	8	6	Hydrofluoric acid

How do I get a CE Mark for a Simple Pressure Vessel?

The following chart provides the route to be followed by the manufacturer, in order to obtain the CE marking.



* Must also include the year and the ID number of the Notified Body

Relevant Legal Notices

LEGAL NOTICE 146 of 2002 - Common Provisions for Pressure Vessels and Inspection Methods Regulations

<http://docs.justice.gov.mt/lom/Legislation/English/SubLeg/427/27.pdf>

LEGAL NOTICE 248 of 2002 - Pressure Equipment Regulations

<http://docs.justice.gov.mt/lom/Legislation/English/SubLeg/427/29.pdf>

LEGAL NOTICE 331 of 2002 - Transportable Pressure Equipment Regulations

<http://docs.justice.gov.mt/lom/Legislation/English/SubLeg/427/30.pdf>

LEGAL NOTICE 229 of 1998 - Simple Pressure Vessels Order

<http://docs.justice.gov.mt/lom/Legislation/English/SubLeg/427/01.pdf>

Relevant Guidance documents

For Pressure Equipment Directive:

http://ec.europa.eu/enterprise/pressure_equipment/ped/guidelines/index_en.html

For Simple Pressure Vessels Directive:

http://ec.europa.eu/enterprise/pressure_equipment/spvd_sector/guidelines/spv_all-guidelines06_2000.pdf

http://ec.europa.eu/enterprise/pressure_equipment/spvd_sector/guidelines/spv-guideline_art16-1_march04_en.pdf

For Transportable Pressure Equipment Directive:

http://ec.europa.eu/transport/tpe/guide_cat_en.html