Simple Pressure Vessels Directive 2014/29/EU

The Simple Pressure Vessels Directive (hereafter 'the Directive') ensures that the simple pressure vessels are in compliance with the requirements of the Directive, when they are properly installed and maintained and used for the purposes for which they are intended.

CE

Scope

The Directive applies to simple pressure vessels (hereafter 'vessels') which are manufactured in series and have the following characteristics:

- The vessels are welded, intended to be subject to an internal gauge pressure greater than 0,5 bar and to contain air or nitrogen, and are not intended to be fired;
- The parts and assemblies contributing to the strength of the vessel under pressure are made either of non-alloy quality steel or of non-alloy aluminum or non-age hardening aluminum alloys;
- The vessel is made of either of the following elements:
- A cylindrical part of circular cross-section closed by outwardly dished and/or flat ends which revolve around the same axis as the cylindrical part;
- Two dished ends revolving around the same axis;
- The maximum working pressure of the vessel does not exceed 30 bar and the product of that pressure and the capacity of the vessel (PS (maximum working pressure in bar) x V (the capacity of the vessel in Liters)) does not exceed 10.000 bar.l;
- The minimum working temperature is no lower than -50 °C and the maximum working temperature is not higher than 300 °C for steel and 100 °C for aluminum or aluminum alloy vessels.

The Directive does not apply to:

- Vessels specifically designed for nuclear use, failure of which may cause an emission of radioactivity;
- Vessels specifically intended for installation in or the propulsion of ships and aircraft;
- Fire extinguisher.

Essential requirements

There is a distinction in the applied requirements between vessels of which the product of PS x V exceeds 50 bar.l and vessels of which the product of PS x V is 50 bar.l or less.

Vessels of which the product of PS x V exceeds 50 bar.l need to comply with the essential safety requirements, regarding:

- The materials, from which the vessel shall be made, shall be selected according to the intended use;
- Vessel design;
- Manufacturing processes;
- Putting into service of the vessels. The vessels shall be accompanied by the instructions drawn up by the manufacturer.

Vessels of which the product of PS x V is 50 bar.l or less must be designed and manufactured in accordance with the sound engineering practice in one of the Member States. Sound engineering practice means that such vessels are designed taking into account all relevant factors influencing its safety. Furthermore, such equipment is manufactured, verified and delivered with instructions for use in order to ensure its safety during its intended life, when used in foreseeable or reasonably foreseeable conditions.

Obligations of manufacturer

Vessels of which the product of PS x V is 50 bar.l.

The manufacturer shall carry out, or let carry out, one of the conformity assessment procedures mentioned in article 13 of the Directive. Which conformity assessment procedure needs to be carried out is dependent on the fact whether the vessel complies completely to relevant harmonized standards, whether they do not comply or partly comply to the relevant harmonized standards and how much pressure there is in the vessel (more than 3.000 bar.l, between 200 – 3.000 bar.l or between 50 – 200 bar.l).

These vessels must bear the CE-marking.

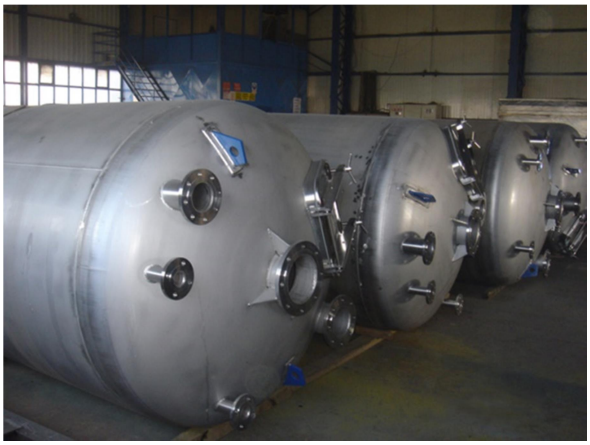
Vessels of which the product of PS x V is 50 bar.l or less.

The manufacturer shall ensure, in addition to the sound engineering practice, that the vessels or their data plates bear the following inscriptions:

– The maximum working pressure (PS in bar);
– The maximum working temperature (in °C);
– The minimum working temperature (in °C);
– The capacity of the vessel (V in L);
– The name, registered trade name or registered trade mark and the address of the manufacturer;
– The type and serial or batch identification of the vessel.

When a data plate is used, it shall be so designed that it cannot be reused and shall include a vacant space to enable other information to be provided.

These vessels may not bear the CE-marking.



Technical Documentation

This part is only applicable for vessels that must bear the CE-marking.

The technical documentation shall specify the applicable requirements and cover, as far as relevant for the assessment, the design, manufacture and operation of the vessel. The technical documentation shall contain, wherever applicable, at least the following elements:

- A general description of the vessel;
- Conceptual design and manufacturing drawings and schemes of components, etc.;
- Descriptions and explanations necessary for the understanding of those drawings

and schemes and the operation of the vessel;

- A list of the harmonized standards applied in full or in part, the references of which have been published in the Official Journal of the European Union, and, where those harmonized standards have not been applied, descriptions of the solutions adopted to meet the essential safety requirements of the Directive, including a list of other relevant technical specifications applied. In the event of partly applied harmonized standards, the technical documentation shall specify the parts which have been applied;
- Results of design calculations made, examinations carried out, etc.;
- Test reports;
- The instructions and safety information referred to in point 2 of annex III of the Directive;
- A document describing:
- The materials selected;
- The welding processes selected;
- The checks selected;
- Any pertinent details as to the vessel design;
- Where applicable, the prototype vessels representative of the production envisaged. The notified body may request further prototype vessels if needed for carrying out the test program;
- The supporting evidence for the adequacy of the technical design solution.

When a prototype vessel is examined, the technical documentation shall also include:

- The certificates relating to the suitable qualification of the welding operations and of the welders or welding operators;
- The inspection slip for the materials used in the manufacture of parts and components contributing to the strength of the vessel;
- A report on the examinations and tests performed or a description of the proposed checks.

The technical documentation must be kept, by the manufacturer, for a period of 10 years after the vessel has been placed on the market.