

# European Standards in relation to pressure equipment



**CEN provides a platform for industry experts to develop European Standards that contribute to ensuring high levels of safety in relation to pressure. Many of these standards are specifically intended to support the implementation of the EU Directives relating to Pressure Equipment (97/23/EC) and Simple Pressure Vessels (2009/105/EC).**

Pressure equipment covers a wide range of products from consumer products such as pressure cookers and portable fire extinguishers through to major industrial applications such as reactors, columns, boilers, steam generators, heat exchangers, industrial piping and safety devices for the power generation, food, chemical, pharmaceutical, oil and gas sectors.

For many years, Europe was the world's leading producer and exporter of pressure vessels, boilers, fire extinguishers, etc. Although some manufacturing has moved to other parts of the world, Europe continues to be a leading source of expertise in the field of pressure equipment.

Within CEN there are 29 Technical Committees (TCs) involved in standardization work related to pressure equipment. In addition, there are another four Technical Committees of ECISS (European Committee for Iron and Steel Standardization), which is an Associated Standards Body that is linked to CEN for administrative and legal purposes.

CEN develops European Standards and participates in the development of international standards within the framework of ISO (International Organization for Standardization), addressing pressure-related risks in relation to a wide range of products, materials and methods.

Many of these standards provide manufacturers and suppliers with tools and guidance for ensuring that their equipment conforms to the Essential Safety Requirements defined in the EU Directives on Pressure Equipment (97/23/EC) and Simple Pressure Vessels (2009/105/EC).

By using European and international standards, companies and organizations can benefit from higher levels of safety, performance and efficiency. Standards contribute to preventing accidents and reducing waste. They also enable manufacturers and suppliers to market and sell equipment to customers throughout Europe and around the world.

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## LEGISLATIVE FRAMEWORK

Previously, before the adoption of relevant legislation at European level, different countries had separate national regulations in relation to pressure equipment, and many published their own national standards. This led to fragmentation of the pressure equipment market which has been rectified with the introduction of the EU Directives relating to Pressure Equipment (97/23/EC) and Simple Pressure Vessels (SPVD - 2009/105/EC).

The Pressure Equipment Directive (PED) sets out Essential Safety Requirements with which equipment must comply. In addition, there are more than 200 official guidelines relating to the PED and some 30 official guidelines to the Simple Pressure Vessels Directives (SPVD), which should also be taken into account by European Standards.

Information about the Pressure Equipment Directive (PED - 97/23/EC) and the Simple Pressure Vessels Directive (SPVD - 2009/105/EC), including the related guidelines, is available on the website of the European Commission: [http://ec.europa.eu/enterprise/sectors/pressure-and-gas/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/pressure-and-gas/index_en.htm)

## ROLE OF EUROPEAN STANDARDIZATION

CEN develops European Standards and participates in the development of international standards in the framework of ISO (International Organization for Standardization) covering a wide range of products, materials and methods, which take pressure-related risks into account. In many cases, these standards provide manufacturers and suppliers with tools and guidance for ensuring that their equipment conforms to the Essential Safety Requirements defined in the relevant EU Directives.

When a European Standard has been cited in the Official Journal of the European Union and has been implemented (i.e. adopted and published) as a national standard in at least one Member State, then any company or organization that applies this standard (known as a 'harmonized standard') may benefit from 'presumption of conformity' to the Essential Safety Requirements of the relevant EU Directive. Information regarding which clauses of the European Standard correspond with each essential requirement is always provided in Annex Z of the standard.

Both European and international standards are developed by experts through a process of consensus. They are regularly reviewed and revised, in order to take account of the latest technological developments as well as changes in relevant legislation.

European Standards (EN) are recognized and accepted in all of the countries covered by CEN Members. Many of these standards, including those that have been adopted as international standards (EN ISO), are also used in other countries around the world.

Information regarding harmonized standards that offer 'presumption of conformity' to the Essential Safety Requirements of the Pressure Equipment Directive (PED) and Simple Pressure Vessels Directive (SPVD) is available on the European Commission website: [http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/index\\_en.htm](http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/index_en.htm)

## EUROPEAN STANDARDS RELATING TO PRESSURE EQUIPMENT

Many European Standards in relation to pressure equipment have been developed and adopted as parts of the following series:

### MATERIALS

EN 10028 - Flat products made of steels for pressure purposes

EN 10216 - Seamless steel tube for pressure purposes

EN 10217 - Welded steel tube for pressure purposes

EN 10222 - Steel forgings for pressure purposes

### PERMANENT JOINING

EN ISO 9606 - Approval testing of welders – Fusion welding

EN ISO 15614 - Specification and qualification of welding procedures for metallic materials

### PRODUCTS

EN 286 - Simple pressure vessels

EN 378 - Refrigerating systems and heat pumps – Safety and environmental requirements

EN ISO 4126 - Safety devices for protection against excessive pressure

EN 12516 - Industrial valves – shell design strength

EN 12952 - Water tube boilers

EN 12953 - Shell boilers

EN 13445 - Unfired pressure vessels

EN 13480 - Industrial piping

EN 14276 - Pressure equipment for refrigerating systems and heat pumps

EN 13458 - Cryogenic vessels – Static vacuum insulated vessels

## HELPDESKS

The CEN community has established contact points where you can obtain advice and clarification in relation to specific series of European Standards.

Unfired pressure vessels (EN 13445): <http://www.unm.fr/en/general/en13445>

Metallic industrial piping (EN 13480): [http://portailgroupe.afnor.fr/public\\_espacenormalisation/CENTC267WG8/index.htm](http://portailgroupe.afnor.fr/public_espacenormalisation/CENTC267WG8/index.htm)

Water-tube and shell boilers (EN 12952, EN 12953): <http://www.boiler-helpdesk.din.de>

## TECHNICAL COMMITTEES

The following CEN Technical Committees develop standards relating to pressure equipment and pressure-related issues:

- CEN/TC 23 - Transportable gas cylinders
- CEN/TC 47 - Atomizing oil burners and their components - Function - Safety - testing
- CEN/TC 54 - Unfired pressure vessels
- CEN/TC 57 - Central heating boilers
- CEN/TC 58 - Safety and control devices for gas burners and gas-burning appliances
- CEN/TC 69 - Industrial valves
- CEN/TC 70 - Manual means of fire fighting equipment
- CEN/TC 74 - Flanges and their joints
- CEN/TC 79 - Respiratory protective devices
- CEN/TC 121 - Welding
- CEN/TC 131 - Gas burners using fans
- CEN/TC 132 - Aluminium and aluminium alloys
- CEN/TC 133 - Copper and copper alloys
- CEN/TC 138 - Non-destructive testing
- CEN/TC 155 - Plastics piping systems and ducting systems
- CEN/TC 182 - Refrigerating systems, safety and environmental requirements
- CEN/TC 185 - Fasteners
- CEN/TC 190 - Foundry technology
- CEN/TC 194 - Utensils in contact with food
- CEN/TC 210 - GRP tanks and vessels
- CEN/TC 234 - Gas infrastructure
- CEN/TC 235 - Gas pressure regulators and associated safety devices for use in gas transmission and distribution
- CEN/TC 237 - Gas meters
- CEN/TC 267 - Industrial piping and pipelines
- CEN/TC 268 - Cryogenic vessels
- CEN/TC 269 - Shell and water-tube boilers
- CEN/TC 286 - Liquefied petroleum gas equipment and accessories
- CEN/TC 326 - Gas supply for Natural Gas Vehicles (NVG)
- CEN/TC 342 - Metal hoses, hose assemblies, bellows and expansion joints

The following ECISS (European Committee for Iron and Steel Standardization) Technical Committees develop standards for materials used in pressure equipment:

- ECISS/TC 100 - General issues
- ECISS/TC 107 - Steels for pressure purposes
- ECISS/TC 110 - Steel tubes, and iron and steel fittings
- ECISS/TC 111 - Steel castings and forgings

For more information about European Standardization activities in relation to pressure equipment, please see the CEN website: [www.cen.eu/go/pressure](http://www.cen.eu/go/pressure)



*"The Pressure Equipment Directive (97/23/EC) was the catalyst for CEN to produce the EN 13445 series of European Standards for 'Unfired pressure vessels'. Having these harmonized standards means that it is much easier for equipment manufacturers to market and sell their products throughout Europe. "*

**Phil Bygate**

Chairman of CEN/TC 54 'Unfired pressure vessels'



*"The Pressure Equipment Directive sets out essential requirements that equipment must meet, but it does not impose specific technical solutions. This allows the industry to develop harmonized standards at European level, and it also gives manufacturers more freedom to innovate. "*

**Laurent Legin (TRANE)**

Convenor of CEN Pressure Equipment Advisory Nucleus



*"Harmonized European Standards are of outstanding importance for our manufacturers when they are placing pressure equipment on the market. They reflect the latest state of the art, are highly innovative and are accepted not only in Europe, but more and more on a global basis! "*

**Frank Wohnsland**

Chairman of Orgalime Task Force 'Pressure Equipment'

## HOW TO GET INVOLVED

Participation in the standardization process allows stakeholders to have a say on the content of draft standards, and enables them to be better informed about developments relating to standards that may be relevant to their area of interest or sector of activity.

Companies, public bodies and other (national) organizations wishing to participate in CEN activities should contact the CEN Member (National Standardization Organization, or NSO) in their country. Through the NSO, they can participate in the national mirror committee, which is responsible for providing input to the relevant CEN Technical Committee (TC) at European level.

A full list of CEN Members can be found on the CEN website: [www.cen.eu](http://www.cen.eu)

European or international organizations and other stakeholders wishing to participate in standardization activities at European level may apply to become a CEN Partner or Liaison Organization.

For further information, please contact: [partners@cencenelec.eu](mailto:partners@cencenelec.eu)

## ABOUT CEN

The European Committee for Standardization (CEN) is officially recognized by the European Union (EU Regulation 1025/2012) as a European Standardization Organization (ESO) responsible for developing and defining standards at European level.

The Members of CEN are the National Standardization Organizations of 33 European countries including all of the EU member states, three EFTA countries (Iceland, Norway and Switzerland), Turkey and the former Yugoslav Republic of Macedonia.

CEN and its Members work with various stakeholders – including industry, SMEs, consumers and other societal stakeholders, public sector bodies, academics and researchers – to develop voluntary European Standards (ENs) and other standardization deliverables.

CEN works in partnership with the International Organization for Standardization (ISO) to coordinate their respective activities and enable the alignment of European and international standards. Around a third of CEN standards are identical to ISO standards.



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