

# Pressure Equipment Directive 97/23/CE

- **The 97/23/CE directive is under effect since June 1, 2002 for:**

- Design
- Manufacturing
- Evaluation of the conformity of equipment and assemblies destined to contain fluids, gas, or liquid with a maximum allowable pressure (PS) greater than 0.5 Bar.

- **The manufacturer of the equipment evaluates the risks according to:**

**The type of equipment or assemblies**

- Vessels
- Generators
- Piping

**The physical nature of the contained fluid:**

- Gas
- Vapor or high pressure hot water
- Liquid

**The level of danger of the contained fluid:**

- Group 1: dangerous fluids
- Group 2: other fluids

**The equipment's service features:**

- Pressure and volume
- Nominal size (piping)
- Product: service pressure x volume (in bar/l)
- Temperature greater than 110 °C

The manufacturer classes the equipment in a risk category from I to IV (I for the least risk).

- **Evaluation of conformity is made according to different modules adapted to:**

- risk categories
- mass production or unit of the equipment
- the quality system already present (ISO9000) at the manufacturer of the equipment

- **Repository:**

FD E86-000 2001 standard:

APAVE practical guide:

APAVE note dated July 24, 2002:

Harmonized standards in application of the 97/23/CE directive

The European Pressure Equipment directive 97/23/CE

Insulated sensor manufacturing

## Pressure Equipment Directive 97/23/CE

### • Concerning the temperature sensor:

Sensors (wells, flanges, etc.) are considered to be built in components of pressurized equipment.

Thus they are not subject the CE marking as equipment (CLAP\* 58 i).

However, they can be incorporated into pressurized equipment and thus must adhere to those regulations applicable by the directive (CLAP\* 58 i and CLAP\* 125).

\*CLAP texts are used to further explain the directive

Risk category	Module
I	A
II	E1
III	H
IV	H1

### • In practice: to confirm case by case

#### DESIGN

FD E86-000 requirements	SENSOR / WELL application	Category
4-3-Conception	<p><b>The manufacturer of the assembly must define the requirements according to the operating conditions</b></p> <p>Sensor order specifications specify:</p> <ul style="list-style-type: none"> <li>- Either the operating conditions clearly defined (for example: pressure, operating temperature type of pressurized fluids, etc.)</li> <li>- Or the dimensions and materials of the pressurized parts</li> </ul>	I and IV
	ISO9001 design expertise	I and II
	<p>Upon request:</p> <p>Calculation note according to method to be specified when ordering</p>	III
	Calculation note according to method to be specified when ordering	IV

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## MANUFACTURING

FD E86-000 requirements	SENSOR / WELL application	Category
4-2-3 Material traceability	ISO9001 system - Material and flanges are delivered with 3.1.B material certificate - Material traceability procedure / well and material protector marking	I and II
4-2-4 Testing documents		
	Upon request: 3.1.B material certificate	III
	Systematically: 3.1.B material certificate	IV
4-4-1 Technical competence of the manufacturer	ISO9001 system - Qualification of the welders by an external organization - Surveillance of competence for all manufacturing positions	I to IV
4-4-2 Technical competence of the manufacturer		
	Upon request: welder authorization copy	II to IV

## CONFORMITY ASSESSMENT

FD E86-000 requirements	SENSOR / WELL application	Category
4-5 Inspections and tests	As for design, it is the manufacturer of the pressurized equipment that makes the inspection and final assessment.  The manufacturer can request tests and checks by PYRO-CONTROL.	I to IV
4-5-2 Final assessment		
	Upon request: - Calculation notes - Product plans - Material certificates - Conformity Assessment certificates - Specific conformance test reports (leak detection, helium tests, hydrostatic testing, etc.)	III to IV
4-6 Markings	No CE Marking on sensors (wells, flanges) in regards to the pressure directive	I to IV