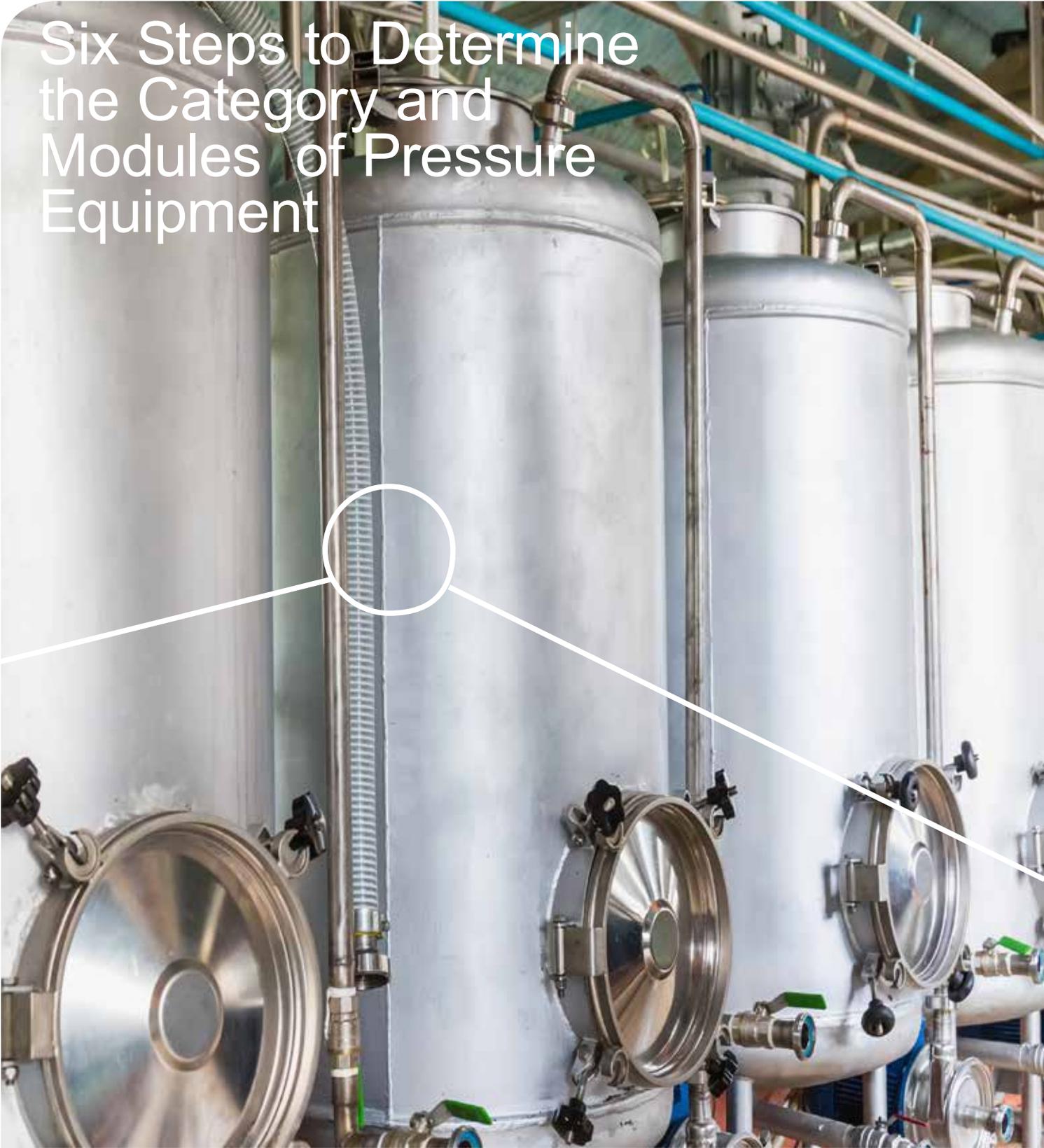




## Quick Reference Guide



Six Steps to Determine  
the Category and  
Modules of Pressure  
Equipment



# Global Reach with Local Presence

## Introduction

Intertek's PED Selection Guide is an introduction and an aid to understanding the European Pressure Equipment Directive (PED) 97/23/EC. It is not intended to replace the official PED guidelines. This quick reference guide will help you to determine the Hazard Category for your pressure equipment and select the Conformity Assessment Module.

## Scope

The PED covers the design, manufacture and conformity assessment of pressure equipment and assemblies of pressure equipment with a maximum allowable pressure greater than 0.5 bar.

Equipment that does not fall under the scope of the PED includes: pipelines, water distribution, equipment for cars, nuclear equipment, machinery, ships, aircraft, and carriage of dangerous goods. (For a complete list, refer to Article 3 of the PED).

## Six Steps for the Conformity Assessment

Follow the steps in the PED Selection Guide for each piece of pressure equipment and/or different design that will be CE marked in accordance with the PED.

### 1. Define Equipment Type (Article 2 of the PED)

There are six types of pressure equipments:

- **Vessel:** A housing designed and built to contain fluids under pressure including its direct attachments up to the coupling point connecting it to other equipment. A vessel may be composed of more than one chamber.
- **Steam Generator or Pressure Cookers or Otherwise Heated Pressure Equipment:** Fired or Otherwise heated pressure equipment intended for generation of steam or super-heated water at temperatures higher than 110°C and having a volume greater than two liters. This includes all pressure cookers.
- **Piping:** Piping components for the transport of fluids, when connected together for integration into a pressure system. Piping includes a pipe or system of pipes, tubing, fittings, expansion joints, hoses, or other pressure-bearing components. Heat exchangers consisting of pipes for the purpose of cooling or heating air should also be considered as piping.
- **Safety Accessories:** These accessories include devices for direct pressure limitation, such as safety valves and bursting discs, as well as limiting

devices. Limiting devices can either activate the means for correction or provide shutdown or shutdown and lock-out, such as pressure switches and temperature switches.

- **Pressure Accessories: Devices with an operational function and having pressure-bearing housings.** Examples include valves, pressure regulators, pressure gauges, filters etc.
- **Assemblies:** Assemblies are defined as several pieces of pressure equipment assembled by one manufacturer to constitute an integrated and functional whole. Examples of assemblies include distillation units, evaporation units and filtering units.

### 2. Determine Gas\* or Líquid

\*If vapor pressure of liquid is at maximum allowable temperature greater than 0.5 bar above normal atmospheric pressure, treat as a Gas (Article 3, 1.1 and 1.3 of the PED).

If a vessel or chamber contains more than one fluid, base the classification on the fluid that requires the higher hazard category.



### 3. Choose the Fluid Group (Article 9 of the PED)

There are two groups:

- **Group 1: Fluids defined as: explosive, extremely flammable, highly flammable, flammable** (where the maximum allowable temperature is above flashpoint), very toxic, toxic, or oxidizing.
- **Group 2: All fluids not referred to in Group 1.**

### 4. Select Conformity Assessment Table

Select the appropriate table shown in the Annex III of the PED according to the following chart:

	Vessel				Steam Generator	Piping			
State of contents	Gas		Liquid		N/A	Gas		Liquid	
Fluid group	1	2	1	2		1	2	1	2
Table*	1	2	3	4	5	6	7	8	9

\*See the conformity assessment tables by clicking here

### 5. Select Hazard Category from the Table

To find Hazard Category, use the maximum allowable pressure (bar), volume (liters or nominal diameter (DN)). The demarcation lines in the tables indicate the upper limit for each category.

The **safety accessories are classified in category IV**. However, by way of exception, safety accessories manufactured for specific equipment may be classified in the same category as the equipment they protect.

The **pressure accessories are classified as either piping** (according to their volume) or vessel (according to their diameter). If the pressure accessory has both data (volume and diameter), the category with a higher value must be applied.

**Assemblies** are classified according to the higher category of the pieces of pressure equipment (without considering safety accessories).

\*Please refer to the table below

### 6. Determine the Conformity Assessment Module

Choose the desired conformity assessment module for the category according to the following table:

\*

Hazard Category	With no QA system		With QA ISO 9000 system or equivalent	
	Serial Production	Unit Production	Serial Production	Unit Production
I	<b>Modules</b>			
	<b>A</b> Technical documentation and internal production control			
II	<b>A1</b> Technical documentation and internal manufacturing checks with monitoring of the final assessment		<b>D1</b> Technical documentation and production quality assurance	<b>E1</b> Technical documentation and product quality assurance
III	<b>B</b> EC type examination + <b>C1</b> Conformity to type	<b>B1</b> EC Design examination + <b>F</b> Product verification	<b>B</b> EC type examination + <b>E</b> Product quality assurance	<b>B1</b> EC Design examination + <b>D</b> Quality assurance for final inspection, testing & production  <b>H</b> Full quality assurance for design, final production, inspection & testing
IV	<b>B</b> EC type examination + <b>F</b> Product verification	<b>G</b> EC unit verification	<b>B</b> EC type examination + <b>D</b> Quality assurance for final inspection, testing & production	<b>H1</b> Full quality assurance with design examination and special surveillance of the final assessment



Intertek is a Notified Body accredited by the European Commission for the Pressure Equipment Directive 97/23/EC to provide third party inspection and design validation services on pressure equipment.

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