

# CONTROLLING THE PARTS CLEANLINESS

**Turn parts cleanliness into a competitive advantage!**



## Your expectations

You manufacture products and components for which cleanliness is an important criterion.

As a player in sectors such as mobility (aerospace, automotive), energy, health (medical), space, defence, etc., you need to guarantee a certain level of cleanliness for your products in order to meet customer specifications and comply with the increasingly stringent current standards (ISO 16232, VDA 19).

More particularly, the development of hydrogen (H<sub>2</sub>) and the electrification of transport involve new issues in terms of components cleanliness.

In this context, you are looking in particular to:

Understand the requirements and specifications of your customers in terms of cleanliness

Measure the level of cleanliness of your parts (particulate and chemical cleanliness)

Control the cleanliness of your production site (sources of contamination and pollution, etc.)

Develop your staff's skills

Acquire or develop appropriate cleaning processes

## Our solutions

Our Cetim experts assist you throughout your project to control the quality and reliability of your products and secure your investments:

Measurement of the particulate cleanliness of your parts, in accordance with customers' specifications. Our testing resources allow us to analyse all types of parts, from micro-engineering to tubes and including components weighing up to 100 kg and 1 m in size. [Watch the video to learn more about our ISO 7 clean room](#)

Audit of your processes

Setting up an optimal, cost-effective organisation for the "Cleanliness" function within your company:

Determination of the best processes and practices

Definition of working environments adapted to your context

Cleanliness measurement equipment selection

Cleaning equipment selection

Implementation of a "Cleanliness" culture (training, change management, etc.) [Cetim Academy® training courses](#)

### ZOOM ON HYDROGEN

[HyMEET](#), our technological platform dedicated to H<sub>2</sub>, provides mechanical engineering with resources and skills needed to master low-carbon hydrogen production, distribution, storage and utilization technologies. HyMEET combines an ambitious R&D program with a €25 million investment in resources dedicated to characterization and validation tests (up to 1000 bar and in a range of temperatures from deep cryogenics to high temperatures)

as well as consulting and training.

**Its activities are dedicated to:**

Characterizing the behavior of materials in contact with hydrogen

Development of specific test methods

Characterization of specific mechanical equipment and systems in severe hydrogen environments.

**Our equipment enables:**

Mechanical characterization of materials using fatigue machines in a high-pressure hydrogen environment

Control of sealing systems and plant containment, with test benches developed to study gas diffusion phenomena, resistance to rapid decompression and sealing performance under severe conditions

The study of the ageing of test specimens in high-pressure autoclaves

Tests under cryogenic conditions for the use of hydrogen in liquid form, with several cryostats fed by a helium-hydrogen liquefier

Multiphysics tests with pressure, temperature and .... cycling.

Manufacture of thermoplastic composite parts (tanks, tubes) by in-situ deposition and consolidation (in real time, with no further steps required) using our HySPIDE TP robotized cell.

**Our specific services dedicated to control the parts cleanliness :**

Support and assistance in controlling the cleanliness function for the H2 sector

Choice of measurement equipment and analysis of particulate cleanliness

Selection and definition of cleaning protocols adapted to the H2 sector

## Your benefits

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Our laboratory is accredited by COFRAC (COFRAC accreditation No. 1-7263 – Scope available at [www.cofrac.fr](http://www.cofrac.fr)) for particulate cleanliness measurement.

Our pragmatism and independence guarantee you a tailored answer that will meet your specific requirements.

With our 20 years of multisector expertise and our cutting-edge equipment, we provide you with assistance regarding all your cleanliness-related issues.

We are the 1<sup>st</sup> laboratory in France equipped with an analysis bench for large parts (up to 100 kg and 1 m).

Our experts are members of standardisation committees and thus allow you to anticipate future changes



**Question and Answer Service**

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