



Type approval and verification

# Certification of Hydrogen Refuelling Stations



Hydrogen refuelling stations play an important role in kick-starting the market for green hydrogen, and there is a particular focus on solutions for heavy-duty vehicles.

Compliance with national legal metrology regulations is essential for public hydrogen refuelling stations with commercial sales. Most operators require that the hydrogen dispenser follows their national metrology regulations for calibration and quantity measurements.

A third-party independent type approval is an essential step to fulfil this. OIML R 139 certification is widely recognised internationally for type approval and verification. It provides the basis for easy market access.

## OIML

The International Organisation of Legal Metrology (OIML) is an intergovernmental treaty organisation that develops model regulations and standards for use by legal metrology authorities and industry.

The mission of the OIML is to enable economies to put in place effective legal metrology infrastructures that are mutually compatible and internationally recognised, for all areas for which governments take responsibility, such as those which facilitate trade, establish mutual confidence and harmonise the level of consumer protection worldwide.

As a certification body, FORCE Certification A/S has been approved as an OIML-Issuing Authority to issue OIML certificates and OIML-type evaluation reports.

Services provided by FORCE Technology & FORCE Certification A/S	
<b>Certification</b>	OIML R 139:2018 Compressed gaseous fuel measuring systems for vehicles (Reconfirmed 2022).  Complete measurement system or part certificate, e.g. for flow meter
<b>Verification</b>	According to OIML R 139:2018
<b>CEP evaluation ISO19880-1 FAT/SAT</b>	FORCE Technology has been trained by the Clean Energy Partnership (CEP) to evaluate that FAT/SAT reports conform to ISO 19880-1:2020 for H35 and H70 Hydrogen Refuelling Stations.



## Test facilities

### Mobile test rig

FORCE Technology has established a unique test infrastructure in the form of a mobile test rig for the type approval and verification of hydrogen filling stations. We are among the first in the world to have metrological test equipment that supports the development and operation of hydrogen filling stations for heavy vehicles.



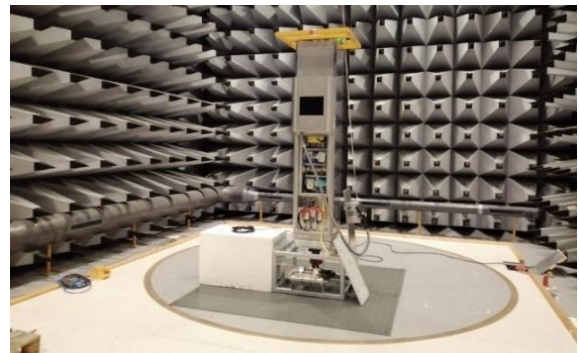
The mobile test rig is a reference system which establishes metrological traceability to the basic SI units. This test rig is used to calibrate hydrogen flow meters as part of required tests according to type approval and verification. The solution is based on a gravitational measuring system with reinforced PED-approved pressure vessels with a nominal pressure of 700 bar. It is built as a trailer-based mobile solution that enables on-site tests at manufacturers and hydrogen filling stations.

Mobile test rig	
<b>Measurement principle</b>	Gravitational, using precision weighing scale
<b>Measurement uncertainty</b>	Better than 0,3 %
<b>Volume</b>	5 kg @ 35 MPa (350 bar) 10 kg @ 70 MPa (700 bar)
<b>Connectors</b>	H35 and H70 receptacles

### EMC & influence factor testing

FORCE Technology is accredited by DANAK to perform testing and calibration for a wide range of areas, including OIML R 139:2018.

FORCE Technology's EMC test reports are internationally recognised and can be used everywhere to ensure global market access.



## About us

FORCE Certification A/S is a leading certification provider. We are a pioneer in the certification of H<sub>2</sub> refuelling stations. We issued the world's first OIML R139:2018-certificate on the conformity of the H<sub>2</sub> dispensers measurements system. FORCE Certification A/S is an accredited certification body providing services within certification, verification, and inspection of products, systems, and personnel globally. FORCE Certification A/S is appointed as an OIML Issuing Authority, which is a certification body in an OIML Member state that has been approved to issue OIML certificates and OIML-type evaluation reports. In addition, FORCE Certification A/S is a Notified Body (Notified Body no. 0200) for several European directives. FORCE Certification A/S is a 100% subsidiary of FORCE Technology.

FORCE Technology is a private non-profit company. With over 1,000 highly qualified employees, FORCE Technology is a strong partner and one of Scandinavia's largest testing and inspection companies, resulting in technical expertise at the international level. Each year, more than 7.000 customers from 90 countries entrust us with their products, materials, structures, largest potentials or worst challenges since we create security and value based on impartiality, confidentiality and knowledge.

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