Press Release

TÜV SÜD at the Hydrogen Technology Expo Europe 11 September 2023

Certifications for safe hydrogen technologies and fuel cell and electrolysis systems

Munich. TÜV SÜD supports the development of hydrogen and fuel cell technologies with testing and certification. With the motto "We test, train, certify...the future", the international testing and certification service provider will be presenting its certifications of the H_2 readiness of materials, components and systems as well as certification marks for fuel cells and electrolysis systems at the Hydrogen Technology Expo Europe in Bremen from 27 to 28 September 2023. Training and qualifications for the safe handling of hydrogen are another topic. (Hall 5, Stand 5D49)

In order to achieve the global goals for reducing CO_2 emissions, hydrogen will play an increasingly important role in the future in replacing natural gas either partially or completely. This sets both manufacturers and operators the challenging task of ensuring that components and plants function safely and reliably both during the conversion process and when operating exclusively on hydrogen.

TÜV SÜD offers a comprehensive testing and certification landscape for hydrogen technologies to drive the transition to renewable energy. This includes, firstly, hydrogen safety and performance testing: TÜV SÜD's hydrogen tests cover the entire pressure and temperature range for hydrogen, helium and gas mixtures. This includes functional and durability tests up to 130 MPa for components, leakage and permeation tests up to 130 MPa, hydraulic burst tests up to 400 MPa and gas flow tests up to 100 g/s and 100 MPa. Pressure vessel leakage and permeation tests up to 105 MPa are also performed. The tests also include hydrogen compatibility of metallic and non-metallic materials as well as product and system certifications.

Secondly, the portfolio includes environmental and EMC testing for hydrogen components: TÜV SÜD offers comprehensive EMC testing for hydrogen systems as well as environmental testing in accordance with LV123/124 for components and pressure vessels. These tests cover components for mobile, stationary and industrial hydrogen applications, fuel cell modules and systems, and pressure vessels.

By introducing H_2 Readiness Certification, TÜV SÜD has created a solution that enables reliable statements to be made on the suitability of materials and components for the future use of hydrogen. In close cooperation with component manufacturers, for example, the experts have developed standard P003, which deals with the resistance of materials to hydrogen under pressure. A guideline on the H_2 readiness of power plants supports the development of a roadmap for the conversion of combined cycle power plants to operation with hydrogen and thus contributes to the accelerated introduction of this environmentally friendly technology.

Certification marks for fuel cell system and H_2 system components

TÜV SÜD offers certification programmes that manufacturers of fuel cell systems and H_2 system components, among others, can use to demonstrate the high safety and performance quality of their products. The first certificate concerns stationary, factory-produced fuel cell systems for power generation, while the second certificate targets hydrogen-carrying components. These components are used, for example, in H_2 filling stations or in vehicles that use hydrogen as an energy carrier.

The corresponding certification programmes are designed to comply with various standards, including the IEC 62282 series of standards (especially parts 3, 4 and 5), ISO 19880-3 and -5 for hydrogen valves and hydrogen refuelling hoses, and ISO 17268 for refuelling nozzles and receptacles. This ensures that the products meet the stringent quality and safety requirements that are crucial in the hydrogen industry.

Panel discussion with Dr. Thomas Gallinger

Dr. Thomas Gallinger, Head of Hydrogen Projects at TÜV SÜD, will also be appearing at the trade fair as part of the panel discussion on "Hydrogen Safety and Certification". (Wednesday, 27 September, 4:15 pm)

Trainings on the correct handling of hydrogen

In addition to the testing and certification of materials, components and systems, the TÜV SÜD Academy also offers training courses and qualifications on the safe handling of hydrogen along the hydrogen value chain; currently, for example, seminars on the topics of "Material compatibility in connection with hydrogen", "Power-to-gas systems with hydrogen", "Safety and approval of hydrogen drives for rail vehicles" or "Safer working on systems with hydrogen". TÜV SÜD Academy will be presenting its range of courses both at the Hydrogen Technology Expo in Bremen and at the hy-fcell trade fair in Stuttgart from 13 to 14 September (Hall 4, Stand 4HZ11).

For more information on TÜV SÜD's services in the field of hydrogen and fuel cell technologies, as well as its training and education offering, please visit:

- Hydrogen Services for a clean future
- Hydrogen Technology & Fuel Cells
- The Hydrogen Value Chain
- Hydrogen Energy Solutions
- Hydrogen enables the connection of clean energy and applications
- Seminars on the proper handling of hydrogen (in German)

Note for editorial teams: This press release can be downloaded from www.tuvsud.com/newsroom.

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