Development and Certification of Hydrogen Refueling Station Facilities in the USA

Field Evaluations

Field Evaluation (FE) Services assist an Authority Having Jurisdiction (AHJ) in the process of determining "acceptance" of a product leading to "approval" of the installation.

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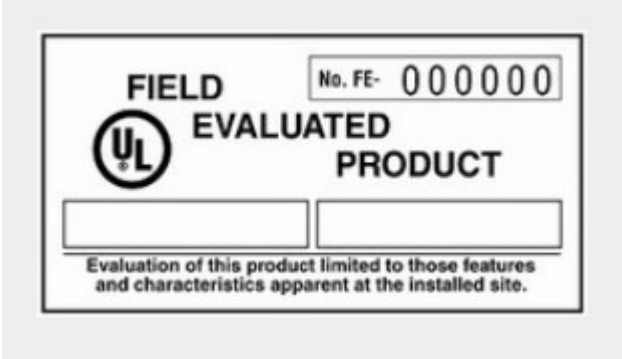
Field Evaluation Mark



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Hydrogen Fuel Dispensing

The UL Certification Process

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Hydrogen Fuel Dispensing Certification

Product submittal – Applicant submits the product to UL for initial assessment

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Product investigation –
UL engineers thoroughly test and inspect the product to determine compliance with requirements

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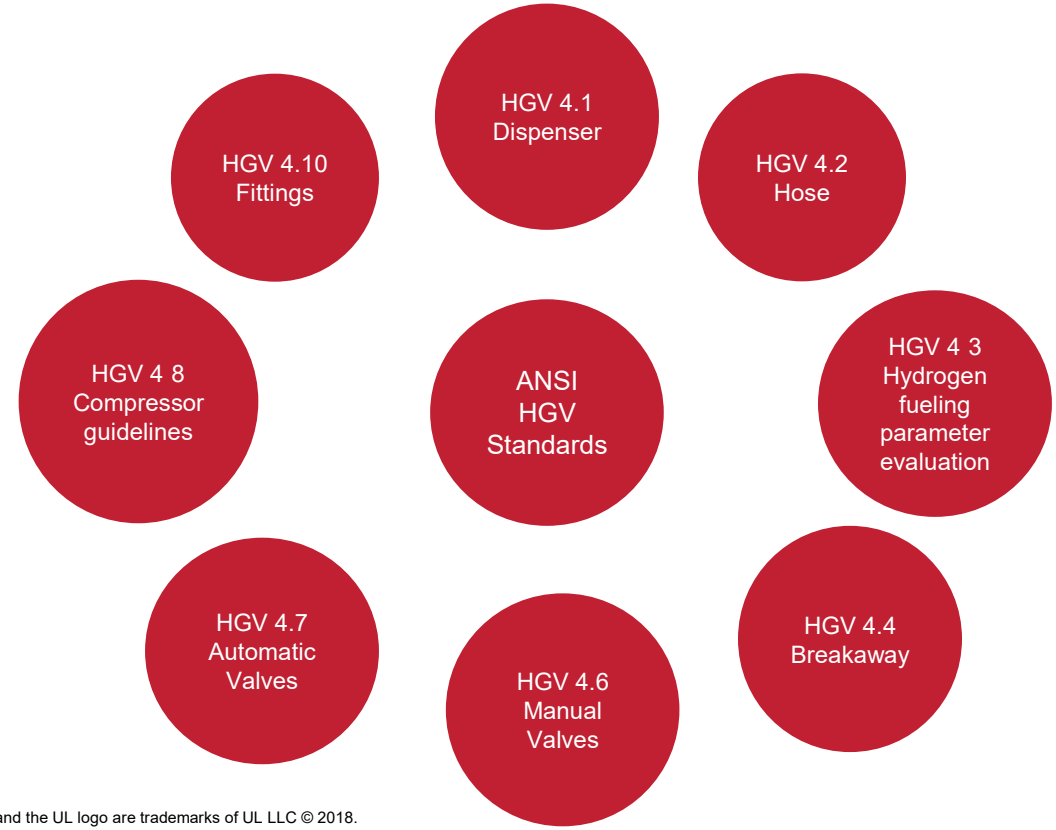
Hydrogen Standards



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Some of the Other Standards Used

ANSI/UL 50E, "Enclosures for Electrical Equipment, Environmental Considerations“

ANSI/UL 508, "Industrial Control Equipment“

UL 508A, "Industrial Control Panels“

ANSI/UL 508C, "Power Conversion Equipment"

Hydrogen Fuel Dispensing Certification

Authorization to use the UL Mark - Once compliance is determined, Applicant is authorized to use the UL Mark at agreed upon manufacturing locations

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Hydrogen Fuel Dispensing Certification

Field Engineering Services inspections – Throughout the lifetime of the UL certification, products undergo regular inspections at the manufacturing facility to verify continued compliance with requirements

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Certification Mark

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Hydrogen Fuel Dispensing Systems

At UL.com you can view UL's On-Line Product Certifications and Guide Card

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Hydrogen Fuel Dispensing Systems

Product Code - NCDT for Hydrogen Fuel Dispensing Systems

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[Hydrogen-dispensing Equipment] Hydrogen Fuel Dispensing Systems

See General Information for Hydrogen-dispensing Equipment

March 12, 2018

USE AND INSTALLATION

This category covers site-assembled and modular gaseous hydrogen fueling stations (HFS) intended to dispense hydrogen to hydrogen fuel vehicles for automotive applications. The systems include hardware and software to compress, store, cool and transfer the hydrogen from the station storage and/or compressor systems to the vehicle fuel tank. The system may include modular delivery, compression, storage and dispensing equipment that is intended to operate in conjunction as a system.

The systems are intended to be installed outside of buildings and used at service stations in accordance with ANSI/NFPA 2, "Hydrogen Technologies Code," ANSI/NFPA 70, "National Electrical Code," the "International Building Code," "International Fire Code," "International Fuel Gas Code," and the "International Mechanical Code."

These systems are intended to be field assembled only by qualified personnel in accordance with the manufacturer's instructions.

Modular systems that rely upon each module being interconnected to limit pressure, contain hydrogen, and monitor refueling operations are only suitable for use with the associated modules indicated in the individual certifications.

Modules and equipment within an HFS may be suitable for installation in unclassified locations or hazardous (classified) locations with or without circuit extensions suitable for use in hazardous (classified) locations:

Installation in unclassified locations — Modules and equipment within an HFS, with or without circuit extensions that are suitable for use in hazardous (classified) locations, may contain internal sources of release resulting in internal area classifications. Hazardous (classified) locations markings are not permitted on this type of equipment.

Installation in hazardous (classified) locations — Modules and equipment within an HFS, with or without circuit extensions that are suitable for use in hazardous (classified) locations, may contain internal sources of release resulting in internal area classifications other than the area classification of the installation. These modules and equipment are constructed such as to be suitable for hazardous (classified) locations. Such modules and equipment will be clearly marked as suitable for use in hazardous (classified) locations.

When circuit extensions are provided, the modules or equipment are referred to as associated apparatus. Markings for the circuit extensions are clearly indicated.

Modules that are specified in conjunction with other modules are suitable when used as an integrated system.

The Hydrogen Safety Panel (www.h2tools.org) provides additional tools to promote the safe operation, handling, and use of hydrogen and hydrogen systems.