All the Info on New Fuel-Nozzle Standards

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In 1930, Underwriters Laboratories (UL) published UL 842, which became the standard for fuel-dispensing nozzles. Now, 85 years later, UL 842 has been replaced by tougher contemporary guidelines: UL 2586, 2586A and 2586B. These new standards promise to improve fuel-nozzle durability and safety, but the changes have left many fuel retailers with questions. Here are answers to give retailers the information they need to assure their customers have the safest and best fueling experience possible.

Why now?

Simply put, UL 842 is out of date for today's fuel blends. Twenty years ago, transportation fuel contained little to no renewable biofuels (e.g., ethanol or biodiesel). Federal programs such as the Renewable Fuel Standard (RFS) now require fuel stations to sell transportation fuels that contain a minimum volume of renewable biofuels. Since the introduction of the RFS in 2005, the amount of renewable biofuel used has increased and will only continue to do so.

Fuels containing biofuels, such as gasoline with ethanol, have been proven to degrade the construction, material and performance of some nozzles. UL 2586, 2586A and 2586B ensure the safety of consumers and proper function of fuel nozzles.

What does it mean to be UL 2586-approved?

To be approved under UL 2586, hose-nozzle valves manufactured after April 30, 2015, must pass new tests and include proper markings. Specifically, under the previous standard, any automatic-shut-off nozzle that passed a 100,000-cycle endurance test at 30 pounds per square inch (psi) qualified as compliant. UL 2586 now requires each nozzle to pass 100,000 cycles at its maximum rated pressure of 50 psi. Testing at the maximum rated pressure should ensure each nozzle performs to the highest standard time after time.

Prior to UL 2586, it was not mandatory for internal components of fuel nozzles to be tested outside of the nozzle. Referred to as "exceptions testing," manufacturers could bypass testing of internal components by simply submitting a nozzle and hoping it received UL approval. If the nozzle passed, all of its components passed as well.

Today, UL 2586 prohibits exceptions testing and requires components be UL 157-approved before they can be used inside nozzles seeking UL 2586 approval. By controlling the components used within nozzles, UL aims to eliminate inferior gaskets and seals that fail because of the high alcohol content of ethanol blends.

In addition to passing specific tests, each UL 2586-approved nozzle must be marked for the appropriate fuel-type usage. Installers of the new nozzles will be able to quickly and easily identify the appropriate fuel type and origin of each nozzle, helping to keep users safe from the installation of incorrect or incompatible hanging hardware.

To further designate the classification of hanging hardware, UL 2586 is composed of three nozzle-specific test standards:

- UL 2586 is the nozzle-specific test standard for gasoline and gasoline/ethanol blends with nominal ethanol concentrations up to 10%, diesel, biodiesel, diesel/biodiesel blends with nominal diesel concentrations up to 5%, kerosene and fuel oil.
- UL 2586A is the nozzle-specific test standard for gasoline and gasoline/ethanol blends with nominal ethanol concentrations up to 85%.

- UL 2586B is the nozzle-specific test standard for diesel, biodiesel and diesel/biodiesel blends with nominal biodiesel concentrations up to 20%.

Many retailers have complained of the large gap in compatibility for ethanol content between UL 2586 and UL 2586A. To create lasting standards, UL chose levels based on predicted increases of ethanol concentrations. While it may seem unfair for today's stations that carry E15 blends, these standards were created to ensure hanging hardware met the functionality and safety needs of retailers and consumers well into the future.

What changes will retailers notice?

Beyond the visible markings, retailers will probably notice only one other change: Hold open racks can be installed only on nozzles that have a "no pressure, no flow device" or an interlock. By removing the ability of a nozzle to unintentionally dispense fuel in prepay situations, UL 2586 should increase the overall safety at the pump and decrease fuel waste.

UL 2586 may not require any immediate action by a fuel retailer. OPW confirmed with UL that any nozzles currently in use or any unused nozzles manufactured before April 30, 2015, could be used until all inventories are consumed. The UL Listing for nozzles manufactured before April 30, 2015, remains in effect for the life of the nozzles.

Through the creation of UL 2586, retailers can rest assured that products manufactured today will be capable of safely handling the fuels of tomorrow.