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TANK TALK

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QUIZ: Testing tank tightness

by Wayne Geyer

Recent questions from Authorities Having Jurisdiction (AHJs) prompted this short quiz about testing double wall ASTs. The sources for the questions are *STI R912, Shop Fabricated Stationary Aboveground Storage Tanks For Flammable, Combustible Liquids* and the *NFPA 30 Flammable and Combustible Liquids Code*. STI labeled AST's, such as F921 and Flameshield technologies, also include decals with *Air Pressure Test Procedure for Intimate Contact Double Wall Tanks*.

TRUE OR FALSE?

T/F 1. On site integrity testing of aboveground storage tanks is often required by local authorities.

T/F 2. According to NFPA 30, horizontal aboveground secondary containment tanks shall be tested for tightness with 3-5 psi air pressure, or hydrostatically.

T/F 3. According to NFPA 30, the interstice of horizontal aboveground secondary containment tanks can be tested with a similar pressure as in question 2, or with 5.3" HG vacuum, or in accordance with the tank's listing, or per the manufacturer's instructions, and pressure or vacuum shall be held for at least one hour.

T/F 4. According to STI, if the manufacturer has shipped the double wall AST with a vacuum drawn on the space between walls, and the vacuum drops more than 2" HG during installation from the level at which it was shipped, the manufacturer should be contacted.

T/F 5. If the vacuum is applied to the interstice, a similar vacuum needs to be applied to the primary tank to prevent the tank from buckling.

T/F 6. According to NFPA 30, if the interstitial space of a tank continues to maintain a factory applied vacuum in accordance with manufacturer's instructions at the site where it is installed, the all components (both tank walls) shall be considered tight.

T/F 7. According to STI, vertical tanks and rectangular tanks should be tested with a lower pressure than horizontal cylindrical tanks.

T/F 8. According to STI, if air pressure is used to test the interstice, a best practice to prevent rupture of the small volume of space within the interstice is to take air from the primary tank air test, using appropriate valves as shown in the decal schematic. Air that is taken direct from an air compressor can quickly over pressurize the interstice.

T/F 9. The long bolts of a long bolted manway used for emergency venting, should be permanently removed, and new bolts applied to the emergency vent that can be tightened down during and after testing.

T/F 10. According to STI, a good practice is to use calibrated air pressure gauges with a 0-15 psig dial span.

HOW DID YOU DO?

All questions are true, except numbers 5 and 9. A vacuum applied to the primary tank (in Q 5) can cause the walls to distort or even to buckle inwards. The long bolts of a long-bolted emergency vent manway (in Q9) are needed in order for the tank to vent flammable vapors that can quickly build up during a pool fire around the tank. Such bolts must remain loose to operate. Remember that such e-vents are not allowed on UL 2085 protected tanks, such as the STI Fireguard.

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