

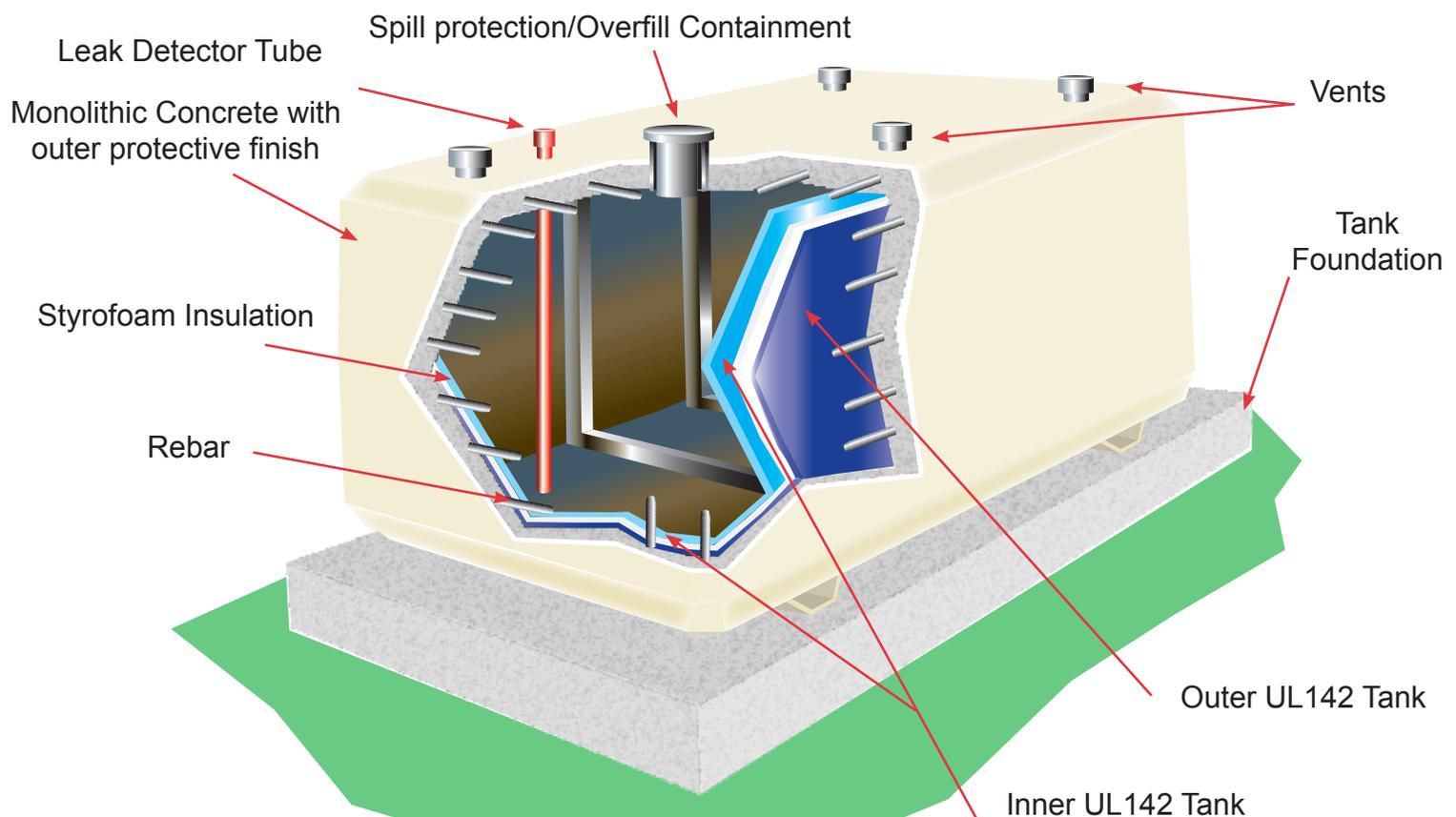
Protected Above-Ground Tanks for Flammable and Combustible Liquids Covered by UL 2085

Information Sheet # 01

We note an emerging trend towards UL2085 for above-ground generator fuel tanks with secondary containment. Stringent EPA controls on Underground Storage Tanks (UST's), and larger penalties for ground contamination, have led to much greater usage of Above-Ground Storage Tanks (AST's). However, once above ground in addition to environmental factors we have to consider the safe use and storage of flammable fuels.

The illustration below shows a typical design for a "beside installation" vaulted fuel tank. Other forms of vaulted tanks to UL 2085 permit the generator set to be mounted above the tank. Above 500 gallons, many cities, specify these tanks and, in most cases, NFPA 37 requires extra precautions above 500 gallons.

Diagram of Fuel Tank to UL 2085



To fulfill our commitment to be the leading supplier and preferred service provider in the Power Generation Industry, the Nixon Power Services team maintains up-to-date technology and information standards on Power Industry changes, regulations and trends. As a service, our Information Sheets are circulated on a regular basis, to existing and potential Power Customers to maintain awareness of changes and developments in engineering standards, electrical codes, and technology impacting the Power Generation Industry.



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Fire departments are demonstrating a keen preference for this type of tank, and we foresee this as the standard tank for the future.

Key safety factors and codes to be considered in fuel tank design are:

- Ability to Withstand Fire (UL 2085 Section 17)
- Vehicle Impact Resistance (UL 2085 Section 20)
- Projectile Resistance (UL 2085 Section 21)

In addition to UL standards, fuel tanks also have to meet all NFPA Fire Code requirements.

The information in this sheet gives details of the designs Fuel Tank manufacturers are using to meet the dictates of UL 2085, UL142, NFPA 30, 37, and 110, and address the safety factors listed above.

Manufacturers have taken the concept of the UL142 double-walled fuel tanks, and achieved compliance to UL 2085 by a combination of rigid design, stronger carbon steel materials, and insulation between outside and inside containment walls. These additional features give the fuel tank the ability to:

Withstand fire: With 2-hour liquid pool and furnace fire tests, the primary internal tank sees on average a temperature rise of no more than 260° F

Resist Vehicle Impact: Maintain fuel containment after an impact of 12,000 lbs force @ 10mph

Resist Projectiles: One manufacturer quotes a test with 150-grain, 30-caliber bullet, muzzle velocity 2,700 feet per sec. from 100’.

Useful Web-Sites for further information:

Underwriters Laboratory: <http://ulstandardsinfontet.ul.com/scopes/scopes.asp?fn=2085.html>
NFPA: www.nfpa.org

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