

Protected Above-Ground Tanks for Flammable & Combustible Liquids Covered by UL2085

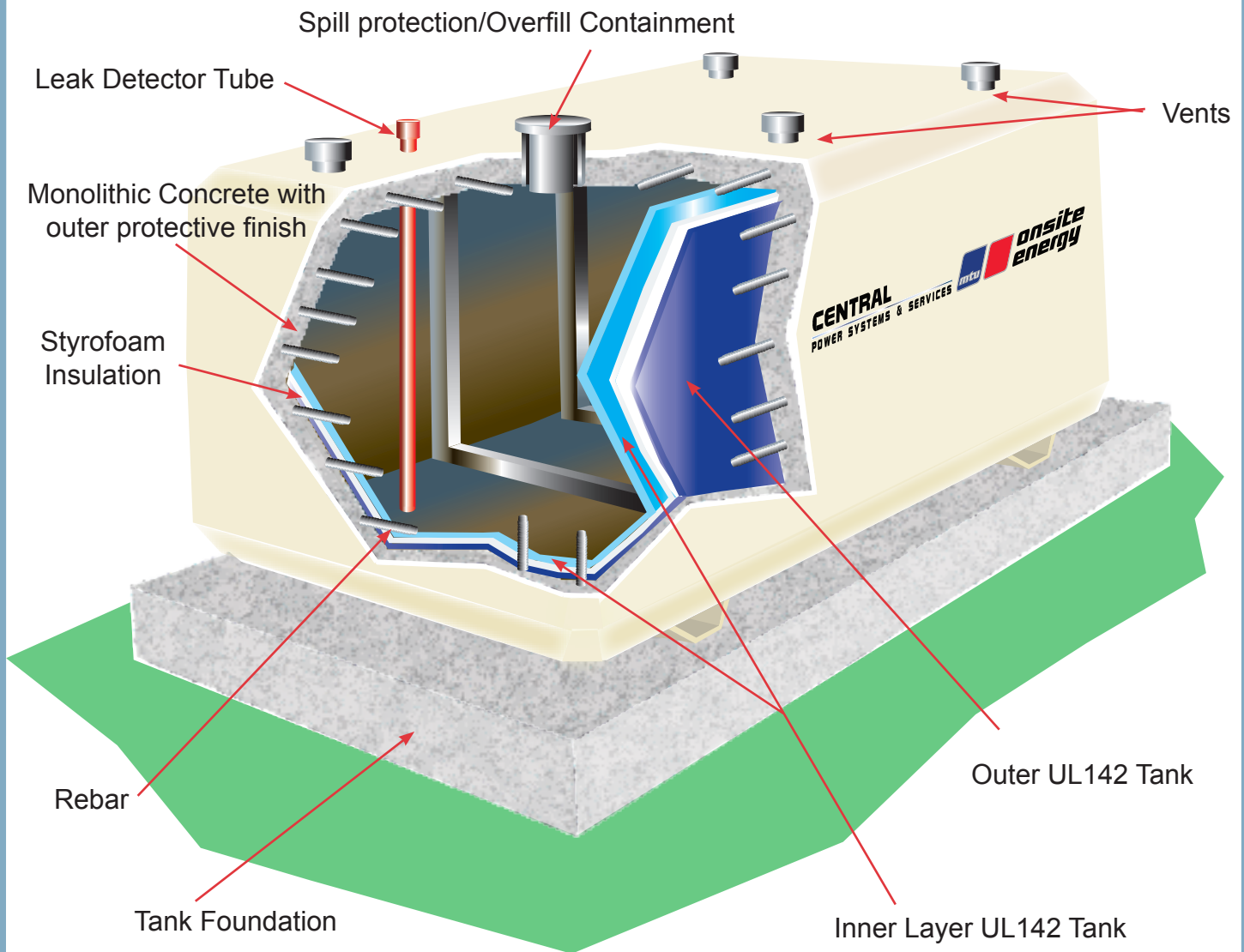
Information Sheet # 01

1.0 Introduction

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).

This Information Sheet discusses once above ground in addition to environmental factors we have to consider the safe use and storage of flammable fuels. (Continued over)

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 Central Power Systems & 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.

The installation information provided in this information sheet is informational in nature only, and should not be considered the advice of a properly licensed and qualified electrician or used in place of a detailed review of the applicable National Electric Codes and local codes. Specific questions about how this information may affect any particular situation should be addressed to a licensed and qualified electrician.

Liberty - Corporate Office
9200 Liberty Drive
Liberty, MO 64068
816.781.8070 Ph
816.781.2207 Fax

Liberty, MO Branch
1900 Plumbers Way
Liberty, MO 64038
816.415.6700 Ph
816.415.6767 Fax

Springfield, MO Branch
3100 E. Kearney
MO 65803
417.865.0505 Ph
417.865.4304 Fax

Wichita, KS Branch
4501 W. Irving
KS 67209
316.943.1231 Ph
316.943.4560 Fax

Salina, KS Branch
1944B N. 9th St.
KS 67401
785.825.8291 Ph
785.825.8282 Fax

Great Bend, KS Branch
625 E. 10th St.
KS 67530
620.792.1361 Ph
620.792.1364 Fax

Colby, KS Branch
1920 Thielen Ave.
KS 67701
785.462.8211 Ph
785.462.8286 Fax

Liberal, KS Branch
1150 E. Hwy. 54
KS 67901
620.624.7274 Ph
620.624.7277 Fax

Woodward, OK Branch
127 NW Hwy. 270
OK 73801
580.256.6014 Ph
580.256.0314 Fax

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2.0 Codes Covering Above Ground Diesel Fuel Tanks:

The codes to be considered, in addition to environmental factors, also cover the safe use and storage of flammable fuels.

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 2085 and UL 142 standards, fuel tanks also have to meet all NFPA Fire Code requirements covered in NFPA 30, 37 and 110.

3.0 Typical Designs Fuel Tank Manufacturers are Adopting:

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’.

3.0 See page 1 for illustration of typical UL 2085 fuel tank that meets the above parameters:

The illustration, shown on page one, details 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.

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

4.0 Other Sources of Information Regarding Above Ground Tanks:

Useful Web-Sites for further information:

Underwriters Laboratory: www.ulstandardsinfonet.ul.com/scopes/2085

NFPA www.nfpa.org

The Central Power Systems & Services technical support team will be very happy to discuss specific needs with you, and provide you with further information and details of all available options to satisfy the requirements of UL 2085 and any other questions concerning your power needs.

We have branches in Missouri, Kansas, and Oklahoma all with full sales and support capabilities with 24-hour local support.

