



UL 142 Aboveground Flammable Liquid Tanks

Ten things to know about these Listed products.

Fire code officials and contractors who are involved with designing, installing and approving installations that contain aboveground flammable liquid tanks are used to seeing shop fabricated tanks that bear a UL Listing (Certification) Mark. However, they may not fully understand what the certification covers, or some key installation considerations that are applicable for the installation of the tank and related system.



This article describes ten items one should know about these certified tanks and related code applications.

1. Codes recognize the use of UL 142 listed tanks

The NFPA 30 Flammable and Combustible Liquids Code requires atmospheric tanks to be designed and constructed in accordance with one of several recognized engineering standards, one of which is the UL 142, Standard for Safety for Steel Aboveground Tanks for Flammable and Combustible Liquids. The International Fire Code in turn requires tanks to be designed, constructed and installed in accordance with NFPA 30.

2. Types of tanks covered by ul 142

UL 142 includes requirements that cover steel primary, secondary and diked type atmospheric storage tanks intended

for noncorrosive, stable flammable and combustible liquids that have a specific gravity not exceeding 1.0 in aboveground applications. UL 142 includes requirements for tanks fabricated in a combination of various shapes (cylindrical, rectangular or round) and orientations (horizontal, vertical) with or without multiple compartments.

UL 142 covers shop fabricated tanks only, and does not cover portable tanks intended for transporting flammable or combustible liquids (such as shipping containers), or mobile use applications (such as mounted on a trailer).

3. UL 142 requirements

UL 142 includes requirements that manufacturers use to design and fabricate aboveground steel tanks, and that certification organizations such as UL use to investigate and List (certify)



Wire and Cable Marking Considerations (continued)

these tanks. The standard includes a comprehensive set of requirements in the following areas:

- **Construction requirements** – These include specification for the tank materials, joints, connections, fittings, manholes (if provided), fill, drain and gauge openings, and painting. They also include specific construction requirements for the primary and secondary containment means, supports, etc.
- **Performance tests** – These requirements include tank leakage, hydrostatic strength, top loading, buoyancy, hydrostatic load, tank support load, and lift lug tests that are designed to verify that the tank design does not exhibit signs of leakage and/or structural damage as a result of these tests.
- **Markings and production line test** – UL 142 requires tanks to include specific markings discussed below. In addition, 100% of production of each Listed primary and secondary containment tank must be tested for leakage by the manufacturer.

4. Listing marks

Aboveground tanks that have been found to comply with applicable UL 142 requirements include a UL Listing Mark permanently affixed to the tank. The Listing Mark includes the UL symbol, the word “LISTED,” a control number and the name of the tank construction as indicated in the manufacturer’s Listings (e.g. Secondary Containment Aboveground Tank, Generator Base Tank, etc.)

5. Product categories

Information on tanks certified in accordance with UL 142 can be found in the Online Certifications Directory at www.ul.com/database. The guide information for the Aboveground Flammable-liquid Tanks (EEEV) product category includes useful information on the products covered under this category. In addition, the Special-purpose Tanks (EFVT) product category covers Listed UL 142 aboveground steel tanks that include generator base, work-top, lube oil, waste oil, day/utility and other special-purpose type tanks.

6. Features covered

The basic features of tanks covered by the UL 142 Listing include all containment spaces and their respective openings (manways, emergency vents, normal vents, fill/withdraw, gauging,

monitoring and other functional openings) with connections (threaded- or flanged-type fittings) and integral tank accessories such as ladders, stairs, lifting lugs and heating coils or hot wells.

All primary-tank compartment(s) are provided with openings to accommodate filling, withdrawing and inventory control; and all secondary-tank interstitial spaces are provided with openings for leak-detection monitoring.

7. Features not covered

UL 142 tank Listings covers the features and accessories described above, which are described in the individual Listings. Any other accessories or components that are shipped with the tanks, attached to the tanks or added to the tanks are not included in the scope of the tank Listing. It is anticipated that the code authority will approve the use and/or installation of any such accessories independent of the tank Listing.

8. Venting and leak detection

All primary-tank compartment(s) are provided with normal and emergency vent openings. All secondary-tank interstitial space(s) are provided with emergency vent openings. It is anticipated that venting will be provided at the actual installation in accordance with applicable code requirements.

9. Intended use

UL 142 Listed tanks are intended for installation in accordance with a variety of installation codes, including NFPA 30, NFPA 30A, NFPA 31, NFPA 37, NFPA 1 and the International Fire Code. They have not been investigated for use underground. However, they are suitable for use in UL 2245 Listed below grade vaults as allowed by the applicable installation code.

10. UL 80 Tanks

In comparison to UL 142, the UL 80 Standard for Steel Tanks for Oil-Burner Fuels and Other Combustible Liquids covers aboveground 60 to 660 gallon steel tanks intended for the storage of heating fuels for oil burning equipment, diesel fuels for compression ignition engines and new and used motor oils at automotive service stations.