

# Aboveground Horizontal UL-142 Tanks



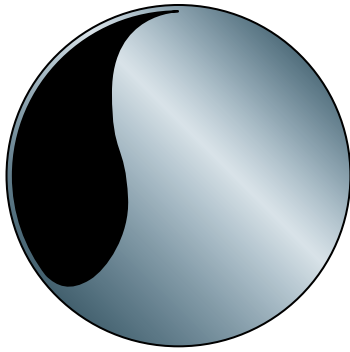
**Aboveground Horizontal UL-142 Tanks**  
Highland aboveground steel tanks provide superior structural strength, product compatibility and durability for all your storage tank needs. Highland offers a variety of industry-proven designs with single and double wall options. Each tank is backed by Highland Tank's team of professionals in design, engineering, fabrication, delivery and service.

Highland aboveground horizontal tanks are available with or without supports to meet your requirements. Highland tanks are constructed to be compatible with the full range of petroleum products including those with higher methanol and ethanol contents.

Each tank is constructed, tested, and labeled in accordance with Underwriters Laboratories Standard for Safety for the Aboveground Storage of Flammable and Combustible Liquids UL-142.

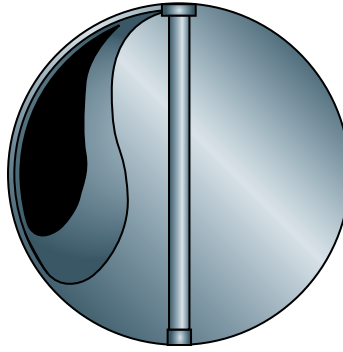
The UL Storage Tank Standards provide a long history of construction dependability. In addition, Highland's tanks meet or exceed the Federal Environmental Protection Agency's regulations for aboveground storage tanks for petroleum and chemical products.

# Standard Construction



## UL-142 Single-wall Construction

Highland single-wall storage tanks consist of a single sheet of steel meeting ASTM specifications, constructed to UL-142 standards. Material thicknesses range from 12 gauge to 3/8" of mild-carbon or stainless steel. Superior "ribbed" strength is achieved with lap joints employing a minimum 1/2" overlap.



## UL-142 Double-wall Construction

Double-wall tanks consist of a primary steel tank wrapped by an exterior steel shell that may be in direct contact with the primary tank creating a full 360° double-wall tank. The interstice can be monitored for an unlikely leak using the 2" monitoring pipe. Both inner and outer tanks are supplied with emergency vent fittings.

With Highland Tank, you get historically proven steel design and construction that provide secure, dependable storage. In addition, you have the flexibility of customizing tanks to suit your needs.

### Standard Construction Features

- Flat-flanged heads
- Continuous exterior fillet welds on all joints
- Threaded fittings (see schedule)
- Lifting Lugs
- UL-142 label
- 5 psi factory air test and seam inspection.
- Primer coating

Options include: Compartment bulkheads, man-holes, flanges, enamel, epoxy or urethane exterior coatings, and special interior linings for aviation fuel, potable water and other liquids.

### Emergency Vent Fittings

All Highland UL-142 tanks are supplied with an emergency vent fitting adequately sized to accommodate the intense increase in vapor pressure in the event of fire exposure. Emergency vents are available as an option.

## Horizontal Tank Sizing Guide

Capacity (Gallons)	Dimensions	
	Diameter	Length
185	3'-2"	3'-4"
240	3'-2"	4'-0"
300	3'-2"	5'-0"
500	4'-0"	5'-5"
500	4'-0"	5'-5"
500	4'-0"	5'-5"
1,000	4'-0"	10'-9"
1,000	4'-0"	10'-9"
1,000	5'-4"	6'-0"
1,500	5'-4"	9'-0"
2,000	5'-4"	12'-0"
3,000	5'-4"	18'-0"
4,000	5'-4"	24'-0"
4,000	6'-0"	19'-0"
4,000	8'-0"	10'-6"
5,000	6'-0"	23'-10"
5,000	8'-0"	13'-4"
6,000	6'-0"	28'-8"
6,000	8'-0"	16'-0"

Capacity (Gallons)	Dimensions	
	Diameter	Length
8,000	8'-0"	21'-4"
8,000	10'-0"	14'-0"
10,000	8'-0"	26'-8"
10,000	10'-0"	17'-0"
12,000	8'-0"	32'-0"
12,000	10'-0"	20'-6"
15,000	8'-0"	40'-0"
15,000	10'-0"	25'-6"
20,000	10'-0"	34'-0"
20,000	10'-6"	31'-0"
25,000	10'-6"	38'-9"
25,000	10'-6"	38'-9"
30,000	10'-6"	46'-6"
30,000	10'-6"	46'-6"
40,000	12'-0"	47'-6"
50,000	12'-0"	59'-6"
50,000	12'-6"	54'-6"
60,000	12'-0"	71'-0"
60,000	12'-6"	65'-5"
60,000	13'-0"	60'-6"

### Notes:

For Double-wall (Type I) tanks, add 6" to length and 1" to diameter for outside dimensions (includes monitoring pipe).

For Double-wall (Type II) tanks, add 7" to length and 3" to diameter for outside dimensions.

Two-saddle design available for all horizontal tanks. Tank heads may be fabricated with bracing or 1/16" thicker steel, per UL 142.

# Tank Support Systems



## Saddles

Saddles are used to support the tank, maintain the tank's position and elevation and provide clearance for visual inspection of the underside. Highland manufactures in accordance with UL-142. Only two saddles per tank are required. Highland's two-saddle design facilitates quicker, more trouble-free installations. Standard saddles provide 6" of clearance and are available up to 12" high.

*Note: Do not rely on tack or seal-welded saddles as a means for securing a tank in flood prone areas. A hold down system, connected to an adequately sized anchor pad is recommended.*



## Supports

Structural Steel Supports are also used to maintain the tank's position and elevation and provide clearance for visual inspection of the tank's underside. Standard supports provide 6" of clearance and are available on horizontal tanks up to 4,000 gallon 5'4" diameter.

*The total square surface area touching the ground is roughly equivalent to that of our skids, which helps minimize the risk of the tank sinking into soft foundations.*



## Skids

Skids are used to provide portability for empty horizontal tanks. They stabilize the tank and maintain a fixed elevation if being moved by towing. Skids also provide clearance for visual inspection of the tank underside. Highland manufactures two styles of skids; Small tank skids for tanks up to 1,500 gallons with runners fabricated from steel angle, and large tank skids with runners made from steel pipe.

*Optional Pump Platform shown on large skid tank at left.*

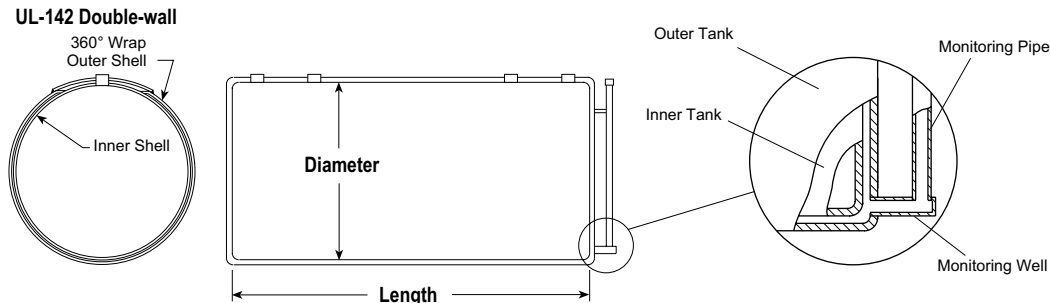


## Stabilizers

Stabilizers are used to maintain the the tank's position. The simplest support system available from Highland, stabilizers do not provide any clearance for visual inspection of the tank underside. Highland standard design consists of two stabilizers welded to the tank. Stabilizers are available on tanks up to 4,000 gallons, 5'4" diameter.

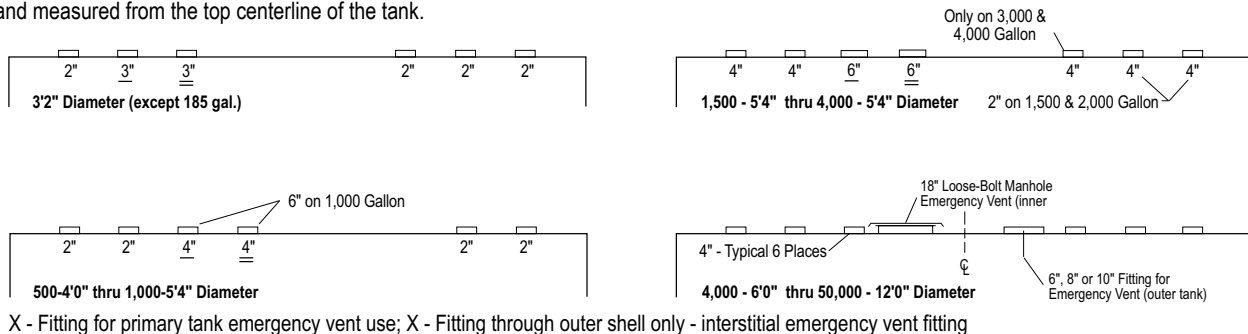
*NOTE: Highland recommends that all aboveground horizontal tanks be installed elevated 4-6" to allow for routine visual inspections of the tank's underside.*

## General Arrangement



## Standard Tank Fittings

All fittings are located and measured from the top centerline of the tank.



## Recommended Guideline Specifications

Furnish and install a \_\_\_\_\_ gallon aboveground, horizontal, (single-wall or double-wall) steel storage tank \_\_\_\_\_ inches in diameter by \_\_\_\_\_ long. Tank shall be fabricated from mild carbon steel with flat-flanged heads. Tank thickness: head \_\_\_\_\_; shell \_\_\_\_\_. All items included with the tank shall be coated with red primer or \_\_\_\_\_ color, \_\_\_\_\_ paint. The tank shall be manufactured in conformance with Underwriters Laboratories' UL-142 specifications and so labeled.

The tank shall be fabricated with the following threaded connections: \_\_\_\_\_ 2 inch, \_\_\_\_\_ 4 inch, \_\_\_\_\_ 6 inch as located on attached drawing, AND/OR \_\_\_\_\_ 150# flanged connections with flange protectors. Flange sizes as follows (qty-size): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, with locations also indicated on drawing. (See standard fittings diagram for quantity, size and locations.) Thread protectors shall be inserted in all threaded openings prior to shipment.

Highland tanks are air tested at the factory but MUST be retested at the jobsite by the installer prior to installation.

## Options & Accessories

- \_\_\_\_ Compartment Bulkheads
- \_\_\_\_ Manway(s) \_\_\_\_\_ inches in diameter with bolted and gasketed lid
- \_\_\_\_ Loose-bolt Manway \_\_\_\_\_ inches in diameter with bolted and gasketed lid (emergency vent)
- \_\_\_\_ Support Saddles
- \_\_\_\_ Supports (2 required, up to 4,000 gal. only)
- \_\_\_\_ Stabilizers (2 required, up to 4,000 gal. only)
- \_\_\_\_ Skids (up to 15,000 gal. only)
- \_\_\_\_ Emergency Vent(s) (2 needed on double-walls)
- \_\_\_\_ External Ladder
- \_\_\_\_ External Ladder & Filling Platform
- \_\_\_\_ Stairs & Filling Platform
- \_\_\_\_ Ships Ladder & Filling Platform
- \_\_\_\_ Pump Platform
- \_\_\_\_ Walkway(s) with Handrails
- \_\_\_\_ Exterior commercial grit blast (SSPC-6),
- \_\_\_\_ Exterior epoxy primer coat \_\_\_\_\_
- \_\_\_\_ Exterior polyurethane paint \_\_\_\_\_
- \_\_\_\_ Other exterior coating \_\_\_\_\_
- \_\_\_\_ Internal Ladder(s)
- \_\_\_\_ Internal lining \_\_\_\_\_ (Must include interior weld. Min. size 500 gallon.)
- \_\_\_\_ Level Sensing System(s)
- \_\_\_\_ Overfill Containment Chamber: welded or threaded
- \_\_\_\_ Leak Sensing System (double-wall tanks only)

## Warranty

The subject tank is warranted by Highland Tank & Mfg. Co. to be free from defects in manufacturing, workmanship and materials. Highland Tank will repair or replace, at its sole discretion F.O.B. factory, within a period of one year after date of shipment, any item of our manufacture. All other items shall be warranted by their respective manufacturers. Liability hereunder is limited, as stated above, and does not include labor, installation costs, indirect or consequential damages of any kind. Tanks must be returned to the factory and if found to be defective upon examination, will be repaired, replaced or credit will be issued at our option.

## Approved Manufacturer

Tank to be manufactured by Highland Tank at one of the following locations: Stoystown, PA, Manheim, PA, Watervliet, NY, or Greensboro, NC.

Please visit us at [www.highlandtank.com](http://www.highlandtank.com)



One Highland Road  
Stoystown, PA 15563  
814-893-5701  
FAX 893-6126

4535 Elizabethtown Road  
Manheim, PA 17545  
717-664-0600  
FAX 664-0617

958 19th Street  
Watervliet, NY 12189  
518-273-0801  
FAX 273-1365

2700 Patterson Street  
Greensboro, NC 27407  
336-218-0801  
FAX 218-1292

2225 Chestnut Street  
Lebanon, PA 17042  
717-664-0602  
FAX 664-0631

1510 Stoystown Road  
Friedens, PA 15541  
814-443-6800  
FAX 444-8662