FOR BAILIFF VERTICAL TANKS

We fit every tank with the fittings, options and accessories your application needs. These are the ones our customers ask for most.

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BAILIFF ENTERPRISES INC.

THERMOPLASTIC WELDED COUPLINGS

HDPE · Polypropylene · PVDF · FNPT



Welded couplings provide secure threaded fittings for plastic tanks without the need for gaskets. They also allow for vertical pipe connections on sloped areas of the tank dome. We use thermoplastic welding to fuse couplings to the tanks.

Types & Sizes

- Polyethylene (HDPE) — 1″ to 4″ pipe size, FNPT.
- Polypropylene — 1″ to 4″ pipe size, FNPT.
- PVDF — ½″ to 6″ pipe size, FNPT.

> **Custom-fit:** We custom fit tanks with the fittings, options and accessories our customers need. Contact us to see how we can help you.

BAILIFF ENTERPRISES, INC. ◆ 305 E. Rogers Road ◆ Willis, TX 77378
Contact Dan Miller ◆ dmiller@plasticstoragetanks.com

BULKHEADS

A bulkhead is how a pipe goes through the wall of a tank. Most are female threaded (FNPT) and made of stainless steel, polypropylene, PVC or CPVC. Other metals and plastics are available but less common.

HOW TO CHOOSE

1	2	3	4
Chemical compatibility	Temperature	Work setting and abuse	Price

BULKHEAD TYPES



Stainless steel

For rugged settings and abuse. Bolted through the tank wall, usually with 4 or 6 bolts. 1/2" through 4". Stocked gaskets: Viton®, EPDM and Buna.



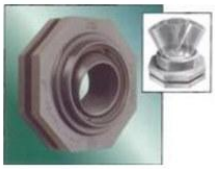
Polypropylene

Our most common bulkhead: reliable, chemical resistant and reasonably priced. Female threaded (FNPT). 1/2" through 4". Stocked gaskets: Viton®, EPDM and Buna.



PVC and CPVC

Hayward BFA Series long pattern, 1/2" through 6". Threaded or socket ends; socket ends let you solvent-weld the pipe for a very secure joint. PVC with EPDM is NSF 61 for drinking water; CPVC takes hotter liquid. EPDM or Viton® gaskets.



Self-aligning

For the dome or cone of a tank. A swivel ball gives a straight vertical pipe on a sloped surface. Top of tank only, never where liquid touches the fitting. See our Self-Aligning Bulkheads sheet for sizes.

Not sure? Tell us the chemical, temperature and fitting location, and we will choose the bulkhead and gasket.

Also available: PTFE (Teflon®) bulkheads, bulkhead flanges, and welded fittings for the harshest service.

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THERMOPLASTIC WELDED FLANGES

ANSI 150# welded flanges for HDPE, polypropylene and PVDF chemical storage tanks

A **thermoplastic welded flange** is the strongest way to put a pipe connection on a plastic tank. We fuse a flange adapter made of the **same resin as your tank** directly to the tank wall, so the nozzle becomes part of the tank. There is no bulkhead gasket inside the tank to leak, wear out or be attacked by the chemical.

Every flange has a standard **ANSI 150# bolt pattern** and a loose **Van Stone backing ring** that turns freely, so lining the bolt holes up with your piping is quick and easy. Welded flanges are our go-to connection for demanding chemical service such as **sulfuric acid** and **caustic soda**. For **oxidizers** such as sodium hypochlorite, we do not place welded flanges in the lower half of the sidewall.

150#	½″–30″	4″	0
ANSI bolt pattern	Flange sizes	Standard standoff	Internal gaskets



Flange adapter with loose backing ring



Welded flange with blind flange



Tank with welded flanges

WHY CUSTOMERS CHOOSE WELDED FLANGES

- **Leak-free, gasket-free nozzle**
  Fused to the tank wall, so nothing inside the tank can loosen or leak.
- **Standard ANSI 150# fit**
  Bolts straight up to ANSI 150# pipe flanges, valves and pumps.
- **Large sizes available**
  From ½″ instrument ports up to 30″ manway and outlet nozzles.
- **Same material as the tank**
  HDPE on HDPE, PP on PP and PVDF on PVDF for full chemical compatibility.
- **Easy fit-up**
  The loose Van Stone ring rotates to line up bolt holes without twisting pipe.
- **Placed where you need it**
  Sidewall or dome, at the orientation you specify. Upper sidewall or dome only for oxidizers.

MATERIALS & SIZES

HDPE (polyethylene)	¾″ to 30″ · water and general chemical storage tanks
Polypropylene (PP)	1″ to 10″ · polypropylene tanks and higher-temperature service
PVDF (Kynar®)	½″ to 11″ · PVDF tanks for aggressive acids
Flange face & ring	Raised face (flat face on request), fiberglass-reinforced loose ring · 4″ standoff standard, up to 6″

When you order, tell us: size, material, location (degrees and height), standoff, and any blind flange, gasket or bolts.

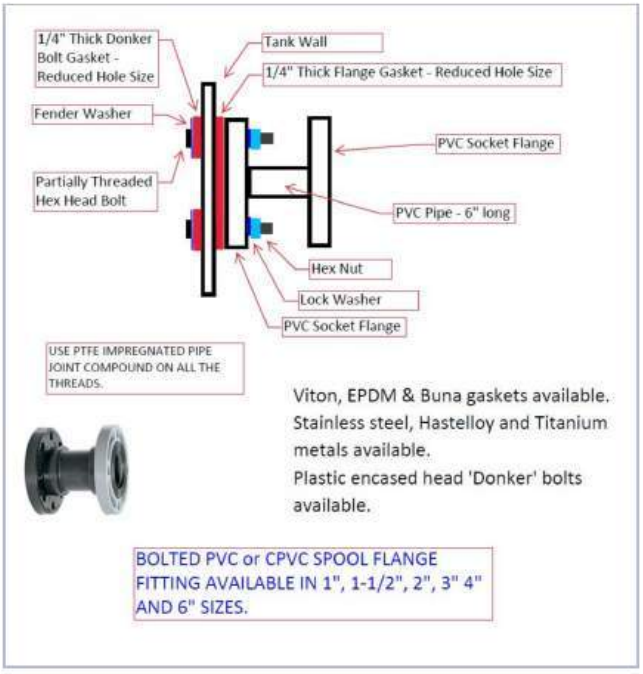
See our **Welded Flanges** packet for dimensions, stub ends and bolt torque settings.

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BOLTED FLANGES

Bolted flanges provide a secure way to attach pipes to a tank and are often used in industrial applications. They are usually made from PVC, CPVC, Polypropylene and Stainless Steel. Other metals and plastics are also available but are much less common. The normal criteria for selection are chemical compatibility for the application, the work setting and amount of abuse the fitting will receive, and the price.

Bolted Spool Flanges offer a secure connection to the tank and an extended flange face to use when attaching valves or pipes. Our PVC and CPVC spool flanges have loose flange rings on the extended flange to make it easier to connect to pipe or valve flanges.



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PVC BULKHEAD FLANGE

A PVC bulkhead flange gives you a bolted connection on the tank wall. We start with a Hayward BFA Series long pattern PVC bulkhead and add a Spears® Schedule 80 PVC flange. Your valve or piping bolts straight to the tank and comes off for service without turning the bulkhead, so the gasket seal is never disturbed.

- **Bolt pattern:** same as Class 150 metal flanges per ANSI B16.5, so it mates with standard valves and piping.
- **Rated 150 psi** with water at 73°F, non-shock. Not for compressed air or gas.
- **1/2" through 6"**; larger sizes need a larger tank (see the bulkhead sheet).
- **Bulkhead gasket:** EPDM or FKM (Viton®).



Bulkhead flange installed on a tank

FLANGE PRESSURE VS. TEMPERATURE (PSI)

Temp.	100°F	110°F	120°F	130°F	140°F	150°F	160°F
PVC	150	135	110	75	50	—	—

PVC flanges drop off fast above 120°F and are not rated at 150°F. For hot liquid, use CPVC. The flange, bulkhead and tank each have a rating; the lowest one governs.

BOLTING IT UP

Flange size	Torque (ft-lb)
1/2–1-1/2"	12
2–4"	25
6"	40

Clean, lubricated threads. Over-torquing will damage the flange.

- Use a full-face, 1/8" thick elastomer gasket, about 70 Shore A.
- Line up and support the pipe so it does not pull on the flange.
- Two flat washers per bolt. Snug all nuts by hand first.
- Tighten in 5 ft-lb steps, crossing the flange (180° opposite bolts), up to the torque shown.
- Do not use the bolts to pull mismatched flanges together. Take care against raised-face flanges or wafer valves.

Threaded joints: use PTFE paste, not PTFE tape. Tape can bunch up and crack a plastic fitting.

Tell us the chemical, temperature and what bolts to the flange, and we will set the size and gaskets.

Flange data: Spears® Flanged Connections data sheet. Spears is a trademark of Spears Manufacturing Co.; Hayward of Hayward Industries, Inc. Subject to change.

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SANITARY TRI-CLAMPS





When Sanitary Tri-Clamps are the preferred fitting, we use a combination of welded couplings and Tri-Clamp adapters. The couplings are used to bond to the tank material and the adapters are used to change to Tri-Clamp connections. To reduce the amount of threaded surface, we can use half couplings rather than full double threaded couplings.

This fitting combination is the following types and available int sizes.

Polyethylene - 1" to 4" pipe size.

Polypropylene - 1/2" to 4" pipe size.

PVDF - 1/2" to 4" pipe size.

We custom fit tanks with the fittings, options and accessories our customers need. Contact us to see how we can help you.

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BAILIFF ENTERPRISES INC.

COMMON VALVES

We stock several types of valves to fit the requirements of many applications. These are the 3 most common types.



True Union Ball Valves are designed for industrial settings. The body of the valve can be replaced without dismantling the surrounding piping. These valves are available in PVC and CPVC. The internal O-rings can be FPM (like Viton) or EPDM. The valve seats are PTFE. Connections can be either threaded or socket. Automated (actuated) versions are available. ($$$)



Polypropylene Bolted Ball Valves are rugged valves. They are constructed from Polypropylene and have PTFE seat material. They have a design pressure rating of 150 psi. Locking arms are available to keep unauthorized persons from opening or closing the valve. ($$)



Compact Ball Valves are simple inexpensive valves . These valves are available in PVC and CPVC. The internal seals can be Viton or EPDM. These valves are available for threaded or socket connections. ($)



Check Valves are used to keep liquid flowing in only one direction. They can be used to keep liquid from siphoning back. These valves are available in PVC and CPVC. The internal seals can be Viton or EPDM. These valves are available for threaded or socket connections.

We can also supply less common valve types that may be more appropriate for applications. These include butterfly valves, PVDF valves and more. Just let us know what you need.

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PVC U-VENTS



Screened PVC U-Vents are a common type of vent for plastic tanks. Since plastic tanks are designed for atmospheric pressure only, it is important that they be vented to keep from developing a vacuum or over-pressure situation.

The normal ‘rule of thumb’ for vent sizing is to supply a vent that is 1” larger in diameter than the largest inlet or drain fitting. If you have a 3” flange or coupling, you would typically use a 4” vent.

We have PVC U-Vents available in screened or unscreened versions. Our normal sizes are 2”, 3” and 4”. For sizes larger than 4”, we have fabricated U-vents available.

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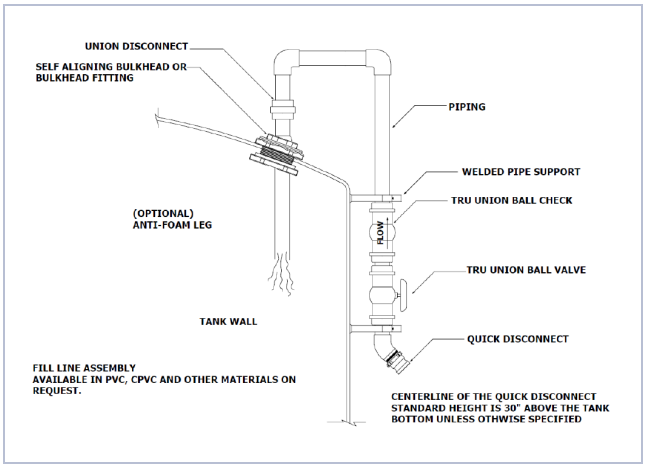
TOP FILL LINE

A ‘Top Fill Line’ is the preferred option for chemical delivery from a truck. It allows a delivery truck to easily connect with a hose, and fill the tank.

No added sidewall penetration is required since the Top Fill Line connects through the dome of the tank. This is of extra advantage on a double wall tank.

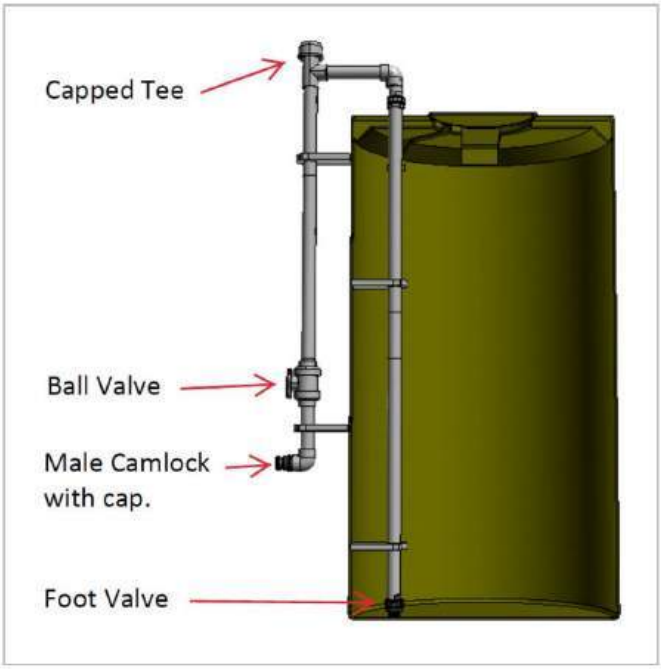
The fill line is equipped with a Ball Valve for liquid flow control and a Check Valve for safety. A version for non-hazardous liquids is available without the Check Valve. A tube is optionally available. An Anti-Foam bend is optionally available to direct fluid down the side of the tank.

Welded Pipe supports are used to support the Top Fill Line. No wall penetrations are needed for these braces.



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TOP DRAIN LINES



Top Drain Lines allow a tank to be drained without sidewall penetration. This is beneficial in every tank but especially important in double wall tanks.

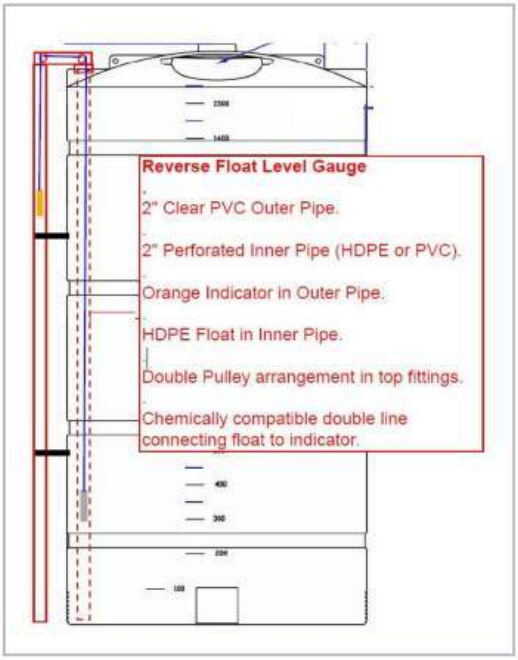
- Top Drains are available in 2", 3" and 4" sizes.
- Available in PVC, CPVC, PVDF, HDPE and Stainless Steel.
- Top Drains are braced with welded supports.

Our Top Drain Lines can terminate outside the tank with a cam lock fitting, flange or NPT threaded fitting. The flanged and threaded fittings are normally used for pump connections. A flexible connection should be used between the pump and tank.

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REVERSE FLOAT LEVEL INDICATOR

Our Reverse Float Level Indicator is a simple effective mechanical method for tracking the fill level of a storage tank. This is especially good for a double wall tank since it does not require sidewall pene-trations.



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BAILIFF ENTERPRISES INC.

ULTRASONIC LEVEL SENSOR & DISPLAY

Know how much is in your tank without climbing up, opening a lid or reading a float backwards. The EchoSonic® II ultrasonic sensor mounts in a 2" top fitting and measures the liquid surface with sound. It sends a continuous 4–20 mA level signal.

Add the optional DataView™ LI55 display to read gallons, inches or percent full right at the tank. Or wire the signal to your PLC or SCADA system. Nothing touches the liquid.

18 ft	±0.2%	4–20 mA	Non-contact
Max. range	Accuracy	Output	No wetted parts



LU23-01 Sensor LI55-1211 Display

WHY CUSTOMERS CHOOSE IT

- **Non-contact measurement**
  Reads from above the liquid. No floats, ropes or moving parts to stick or wear.
- **Reads in gallons**
  32-point linearization converts level to true volume, even in domed tanks.
- **One power connection**
  The display runs on 85–265 VAC and supplies 24 VDC to the sensor.
- **Built for corrosive chemicals**
  PVDF transducer, Viton® gasket and a sealed Type 6P housing.
- **Alarms and pump control**
  Two relays for high/low alarms or auto fill, plus a 4–20 mA repeater output.
- **More usable capacity**
  An 8" dead band and narrow 3" beam measure nearly to the top of the tank.

THE LEVEL PACKAGE

SENSOR
LU23-01
EchoSonic® II transmitter. 18 ft range, 2" NPT mount, 10 ft cable, USB calibration fob included.

DISPLAY · OPTIONAL
LI55-1211
DataView™ controller. 6-digit LED display, 85–265 VAC, 2 relays and 4–20 mA repeater.

ENCLOSURE · OPTIONAL
LM92-1002
NEMA 4X polycarbonate windowed box. Mounts the display on the tank, a stand or a wall.

Ideal for: bulk chemical, water and wastewater storage and process tanks with a calm liquid surface, and remote reading to a PLC or SCADA system.

Ask us first if your liquid foams heavily, gives off dense fumes, or is stored above 140°F. We will recommend the right level option.

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BAILIFF ENTERPRISES INC.

ULTRASONIC SPECIFICATIONS

SENSOR · LU23-01

EchoSonic® II Ultrasonic Level Transmitter

Range	8" to 18.0' (20 cm to 5.5 m)
Accuracy	±0.2% of range
Resolution	0.039" (1 mm)
Dead band	8" (20 cm)
Beam width	3" (7.6 cm)
Signal output	4–20 mA, two-wire
Fail-safe	4, 20, 21, 22 mA or hold last
Supply	24 VDC loop, 0.5 W
Process temp.	-4° to 140°F (-20° to 60°C)
Ambient temp.	-31° to 140°F (-35° to 60°C)
Max. pressure	30 psi (2 bar)
Enclosure	Type 6P, encapsulated, submersible
Materials	Polycarbonate housing, PVDF transducer, Viton® gasket
Cable	10' (3 m), 4-conductor shielded
Process mount	2" NPT
Configuration	WebCal® software; LI99-1001 USB fob included
Approvals	cFMus, CE, RoHS

DISPLAY · LI55-1211

DataView™ Level Controller (optional)

Display	LED, 6-digit
Digit height	Main 0.6", secondary 0.46"
Units	Gallons, liters, in., ft., m or %
Linearization	2–32 point (level to volume)
Sensor input	(1) 4–20 mA
Supply voltage	85–265 VAC, 50/60 Hz
Consumption	20 W max.
Sensor supply	24 VDC @ 200 mA (powers the sensor)
Relays	(2) SPDT, 3 A @ 30 VDC / 250 VAC
Repeater output	Isolated 4–20 mA to PLC/SCADA
Setup	Front push buttons, password protected
Memory	Non-volatile
Ambient temp.	-40° to 149°F (-40° to 65°C)
Enclosure	1/8 DIN, polycarbonate
Faceplate rating	NEMA 4X (IP65)
Approvals	UL, cULus, CE

ENCLOSURE · LM92-1002 (OPTIONAL)



Single-indicator windowed box for one LI55 display. NEMA 4X polycarbonate with a clear cover for outdoor, on-tank or wall mounting.

Size: approx. 7.9" W × 7.9" H × 6.3" D **Includes:** mounting plate, stand-offs, #8-32 screws and washers.

INSTALLATION NOTES

- Mount the sensor vertically in a 2" top fitting, away from the fill inlet, sidewall and obstructions.
- Wire the sensor to the LI55's 24 VDC sensor supply. The display powers the loop.
- Keep the highest liquid level at least 8" below the sensor face.
- Enter tank height and capacity so the display reads in gallons.

Specifications from Flowline datasheets DS300610 and DS301033. EchoSonic, DataView and WebCal are trademarks of Flowline, Inc. Specifications subject to change.

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INTERSTITIAL LEAK DETECTOR

An Interstitial Leak Detector warns you when the primary tank of a double wall tank leaks. A probe hangs to the bottom of the space between the inner and outer tanks. When it touches liquid, the detector sounds a horn, flashes a red strobe and can signal your control system.

The detector mounts on a 2" NPT fitting on top of the secondary tank, so nothing passes through the primary tank.

95 dB	NEMA 4X	2" NPT
Horn, silenceable	Indoor / outdoor	Top mount



Alarm enclosure with strobe

WHY CUSTOMERS CHOOSE IT

- **Early warning**
  Finds a primary tank leak while the outer tank still holds the liquid.
- **Fail-safe probe**
  The system checks the probe constantly and alarms if it fails or is disconnected.
- **All-PVC probe**
  Potted conductance probe can be fully submerged.
- **Sound and light**
  95 dB horn with a silence button and a flashing red strobe on the box.
- **Ties into your system**
  Optional relay output for a PLC, control system or auto-dialer.
- **Simple install**
  Connect power and the probe. Also works as a stand-alone high level alarm.

SPECIFICATIONS

Model	JWB Company LDA-1 Leakminder
Power	110 VAC (24 VDC optional), under 1 A
Enclosure	NEMA 4X, 10" × 7" × 3.5"
Probe & cable	Conductance type, all PVC, 19 ft cable
Alarms	95 dB horn with silence; red strobe (about 1 Hz)
Relay (optional)	Form C, NO/NC, 5 A @ 120 VAC
Connection	2" NPT with cable grip or conduit
Options	UL approved version; relay output; 24 VDC power
Warranty	One year from the manufacturer



Inside view



(Probe)

Probe

Specifications from the JWB Company LDA-1 Leakminder data sheet. Specifications subject to change.

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TANK INSULATION

We spray a closed-cell polyurethane foam directly onto the outside of the tank. Our standard coat is 2" thick, and we can apply 3" or 4" when you need more. The foam is then sealed with a white elastomeric mastic that blocks UV light and stretches as the tank expands and contracts.

Insulation keeps the liquid closer to the temperature you want, cuts the load on heat trace and protects outdoor tanks from freezing.

R-6.7	R-13+	98%
per inch	Standard 2" coat	Closed cell



Insulated vertical tank



Cone bottom

WHY CUSTOMERS CHOOSE IT

- **Closed-cell foam**
  Will not absorb water or let it pass through, so it keeps insulating outdoors.
- **Flexible UV coating**
  White elastomeric mastic protects the foam from sunlight and moves with the tank.
- **Thicker when needed**
  2" standard; 3" or 4" for colder climates or tighter temperature control.
- **Bonded to the tank**
  Sprayed on with no seams or gaps for water to get behind.
- **Pairs with heat trace**
  Heat pads go on first and the foam covers them, so a small system holds temperature.
- **Easy to touch up**
  Scuffs from shipping repair with canned closed-cell foam and an elastomeric roof coating.

FOAM PROPERTIES

Type	Two-component closed-cell spray polyurethane
R-value	6.7 per inch (6.9 per inch at 4")
Core density	2.0–2.3 lb/ft³
Closed cell content	98%
Compressive strength	26 psi
Water absorption	0.6% by volume
Flame spread	25 (ASTM E84, Class I)

COATING & OPTIONS

Standard thickness	2" foam (R-13+)
Optional	3" (R-20) or 4" (R-27)
Top coat	White elastomeric acrylic mastic for UV protection
Fittings	Foam is cut back around fittings, lids and lugs
Heat trace	SPX pads and 2XTC controller, installed under the foam
Touch-up	Closed-cell canned foam plus elastomeric roof coating

Foam properties are typical values from the BASF SPRAYTITE® 178 technical data sheet. Actual values vary with application conditions.

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BAILIFF ENTERPRISES INC.

TANK HEAT TRACE

Keep the liquid in your tank from freezing, or hold it at a process temperature. We bond HTD Heat Trace SPX heating pads to the sidewall of the tank and wire them to a 2XTC controller. The controller holds your setpoint and a separate high-limit sensor keeps the pads from ever overheating the plastic.

It is almost always paired with our spray-foam insulation.

0.39	150°F	210–4200 W
watts / sq. in.	Max. maintain	System sizes



2XTC tank heating controller

WHY CUSTOMERS CHOOSE IT

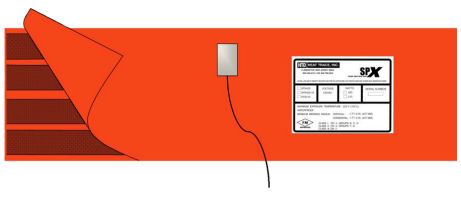
- **Made for plastic tanks**
  Ultra-low watt density pads with an internal over-temperature thermostat. Safe on HDPE and polypropylene.
- **Waterproof pads**
  Epoxy-glass laminate keeps working even if rain or an overflow gets under the insulation.
- **Two sensors**
  A process RTD holds your setpoint. A separate high-limit RTD shuts the heat off if the tank wall gets too hot.
- **Alarms you can wire in**
  Low temperature, high temperature and low heater current, with relay contacts and a 4–20 mA temperature output.
- **Indoor or outdoor**
  NEMA 4X / IP66 controller runs on 100–277 VAC and switches up to 30 A.
- **Sized to your tank**
  We pick the pads from your tank size and the temperature difference you need to hold.

THE HEAT TRACE PACKAGE

PAD
SPX 210
210 W, 30" × 18" adhesive-backed pad. For small tanks and tight spaces.

PAD
SPX 420
420 W, 60" × 18" pad. Available with 10, 16, 20 or 24 ft cold leads.

CONTROLLER
2XTC
Process control with high-limit protection. One controller runs up to 30 A of pads.



SPX pad with cold lead

Ideal for: freeze protection of water and chemicals stored outdoors, and keeping viscous or temperature-sensitive liquids at a steady temperature.

Tell us: the tank, the liquid, the lowest outside temperature and the temperature to hold. We will size the system and quote it installed.

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BAILIFF ENTERPRISES INC.

HEAT TRACE SPECIFICATIONS

PADS · SPX 210 / 420

HTD Heat Trace plastic tank heating pad

Power	SPX 210: 210 W · SPX 420: 420 W
Size	30" × 18" (210) · 60" × 18" (420)
Watt density	0.39 W/sq. in.
Voltage	120 VAC (240 VAC on request)
Max. maintain temp.	150°F (66°C)
Max. exposure temp.	220°F (104°C)
Min. install temp.	50°F (10°C)
Min. tank diameter	36" (18" bend radius)
Construction	Multi-path parallel circuit in waterproof epoxy-glass laminate, aluminum ground shield
Protection	Internal over-temperature thermostat
Cold lead	3-conductor 16 AWG, TPE jacket, tinned copper braid
Mounting	Adhesive back; edges sealed with aluminum tape

CONTROLLER · 2XTC

Microprocessor tank heating controller

Power input	100–277 VAC, 50/60 Hz
Heater output	30 A SPST relay, active arc suppression
Process setpoint	0–200°F, on/off with adjustable band
High limit	0–250°F, separate sensor
Alarms	Low temp., high temp., low current (current test every 24, 168 or 720 hrs)
Alarm outputs	Relays, 5 A @ 277 VAC, open or close on alarm
Remote output	4–20 mA process temperature
Sensors	1,000 Ω platinum RTD, 2-wire
Ambient	-40° to 113°F
Enclosure	NEMA 4X / IP66 polycarbonate
Approvals	UL 508, CSA 22.2 #14

STANDARD SYSTEMS

Pads	Watts	Amps @ 120 V	Controllers
1 × SPX 210	210	1.75	1
2 × SPX 210	420	3.5	1
1 × SPX 210 + 1 × SPX 420	630	5.25	1
2 × SPX 420	840	7	1
3 × SPX 420	1,260	10.5	1
4 × SPX 420	1,680	14	1
5 × SPX 420	2,100	17.5	1
6 × SPX 420	2,520	21	1
7 × SPX 420	2,940	24.5	2
8 × SPX 420	3,360	28	2
10 × SPX 420	4,200	35	2

We size each system from the tank and the **temperature difference** you need to hold: the gap between the lowest expected outside temperature and the liquid temperature. Our sizing tables run from 30°F to 100°F of difference for every vertical and double wall tank we sell.

Larger systems split the pads between two controllers. Pads are installed under the insulation, and the tank is hydro-tested before shipping.

Specifications from HTD Heat Trace SPX and 2XTC data sheets. SPX and 2XTC are products of HTD Heat Trace. Specifications subject to change.

BAILIFF ENTERPRISES, INC. ◆ 305 E. Rogers Road ◆ Willis, TX 77378
Contact Dan Miller ◆ dmiller@plasticstoragetanks.com

FIBERGLASS LADDERS & CAGES

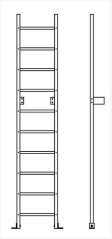
We supply OSHA-compliant fiberglass ladders for your tank. They are light, strong and will not rust or corrode, which makes them a good fit for chemical plants and other harsh locations. Ladders mount to the tank with wall brackets and can be shipped installed or as a kit.

The height of the ladder decides whether a cage or a fall arrest device is required. OSHA is moving away from cages and toward straight ladders with fall arrest devices.



Walkthrough ladder on a Bailiff tank

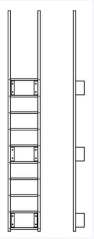
THREE STANDARD STYLES



STRAIGHT

Straight ladder

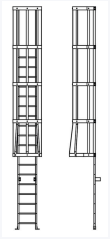
The simplest choice for shorter tanks.



MOST POPULAR

With walkthrough

Grab rails extend past the top rung for a safer step onto the tank.



TALLER TANKS

Caged ladder

Cage starts 7 to 8 ft above the ground.

CONSTRUCTION

Width	28" standard
Side rails	2" × 1/4" FRP square tube
Rungs	1-1/4" dia. × 3/16" FRP fluted tube, 12" spacing
Resin	Fire retardant (IFR) polyester with UV inhibitor; vinyl ester for very corrosive service
Color	OSHA safety yellow
Mounting	Base mounted with wall brackets
Delivery	Installed, or as a kit for field assembly

WHY FIBERGLASS

- Will not rust or corrode; outlasts steel and aluminum
- Non-conductive and fire retardant
- Light enough to handle without a crane
- Little or no maintenance
- Custom heights, cages, platforms and brackets available

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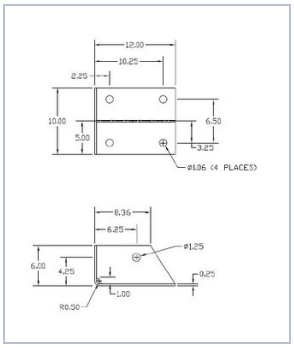
WIND / SEISMIC RESTRAINT SYSTEM

Our wind/seismic tie-down systems consist of:

- Four heavy duty tie-down points molded in or bolted to the dome of the tank.
- 1/4" galvanized steel cable that is strong and flexible. Vinyl coated or stainless steel cable is available at additional cost.



- The cable is rated at 7,000 pounds breaking strength. The cable is cut to length for each anchor point.
- 6" tall x 10" wide x 12" deep anchors made from galvanized A-36 steel connect with the cables and are bolted into the concrete base. The holes are designed for 1" bolts.



- The cables, anchors and cable clips are all included. The cable clips are galvanized, drop forged steel shackles.
- The restraints are rated for 155 mph winds. We offer site specific, stamped wind and seismic calculations at additional cost.
- Due to foundation variances, bolts are not included.

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