

1. Choose size of tire and type of opening.

- Small circles for drinking
- Whole tire: typically 30.5x32 (combine tires) and 48x31x20 (front tire on fertilizer trucks) or heavy equipment tires that have height available for at least 18 inches of water above the lower tire bead.
- Half tire: the large mining tires that are cut like a bagel, up to 13 feet in diameter

2. Cut tire opening.

- Tools:
 - ✓ Tire chalk
 - ✓ Reciprocating saw with metal cutting blade with 5 to 6 tpi (teeth per inch).
 - ✓ Special cleaning and lubricating fluid (I use a mixture of Dawn dishwasher soap and water)
- Mark the desired cut line with tire chalk
- Cut tire and remove the center

3. Select site for tank.

- When placing the tank below a pond, it is ideal the site will have at least 6 feet of difference between the water level in the pond (bottom of the primary spillway pipe) and the soil line where the bottom of the tank will sit. About four feet is the minimum.
- Ideal to have overflow line that drains to daylight

4. Plumb water lines to and from proposed site

- Ideally, have 1½ or 2-inch waterline to and from the waterer.
- Have a flexible connector or a “swing joint” on the incoming lines below the tank.
- Use a brass (or galvanized) nipple coming into the tank to connect to the float valve
- Plumb intake line so the bottom of the threads on the metal pipe is even with top of concrete line (top of bead inside the tank).
 - ✓ Lightly thread a PVC female adapter onto the top of the pipe nipple with about 1 ft. of pipe in it to prevent concrete from getting into the nipple or threads and to allow you to maintain as perfectly vertical as possible pipe placement.
 - ✓ Do not glue these pieces; they will be removed when concrete is cured.
- Plumb drain and overflow so the top of the PVC collar connector is installed to be flush with the top of the concrete (even with the top of bead inside of the tank).
 - ✓ Lightly place a 1-foot or longer piece of spare pipe into the connector, but do not glue it! This is to protect the pipe from being filled with concrete and to allow you to maintain the pipe as vertical as possible. This will be removed after the concrete is cured.



5. **Firm, tamp and fill center of tank** so there are four to six inches of space left for the concrete. There can be greater space, but this requires more concrete.
6. **Level and set tire into site.**
 - The tank should set on a slightly elevated area.
 - It is ideal to have geotextile under the tank and gravel to extend the life of the gravel from sinking into mud.
 - Firm and tamp any gravel base under tank.
 - It is important to level the tank site. Even one inch out of level is noticeable when the tank is full.
7. **Install a bead of silicone** onto the center of the tire bead that will be in the concrete.
 - Use a bead of silicone onto the incoming and outgoing lines about 2 inches down from the top of concrete line.
 - An optional second bead of silicone can be installed on the tire bead and on all pipes about 4 inches from the top of the concrete line (top of tire bead inside the tank).
 - Put the silicone on the tire bead and pipe(s) immediately before placing the concrete into the tire.
8. **Mix the concrete for the tank.**
 - Mix the concrete mixture (with fiber) for the tire.
 - ✓ The fiberglass fiber can be purchased from the ready-mix concrete company. One bag is enough for one cubic yard of concrete (enough for 45 sacks of pre-mixed concrete mix). The estimated cost \$5-7 per bag.
 - ✓ Add a small handful per sack of pre-mixed concrete mix.
 - Place concrete into the center through the tire bead opening only.
 - Work the concrete under the tire as best as you can. You may need a trowel and a sledge hammer to make the concrete move under the tire well.
 - Make sure the incoming and outgoing pipes are straight.
 - Continue pouring concrete until area below the tire is full up to the top of the tire bead. Trowel the area. You can have a half-inch of crown to the concrete if you desire. Check the level of the threads of the intake pipe and the top of the drain pipe collar to make sure they are at the desired depths.
9. **Run water into the tire outside the concrete area**, until the water softly flows across the concrete and covers the concrete by at least two inches.
 - Clean all tools.
 - The tank can be filled with up to 24 inches of water on top of the concrete.
 - Leave the project (with the water on top of the fresh concrete).
10. **Install the water level valve with float**, after the concrete cures (ideally 3 weeks or so),
 - Consider the refill rate of the tank when selecting a valve. Small valves cost less but may have slow flow or refill rates.

- Tanks installed using gravity flow from a pond may have very low pressure, so select the valve accordingly.
 - ✓ Stainless steel chains on all floats is recommended.
 - ✓ Recommended valve: Watson Manufacturing Inc., Stock Water Control Products, P.O. Box 397, Morrill, NE 69358, 1-800-292-2987, 1-308-247-2281
<http://floatvalveusa.com/index.html>
- Where possible, install a winter minimum continuous flow valve to help prevent freezing an along with an overflow drain line.
- Set the float level for the desired water level.

11. **Place additional gravel** to the sides of the tank, leaving at least one foot of tank showing above the finished gravel layer.

If there are questions about completing this project, please contact [Herschel George](#), K-State Southeast Kansas Watershed Specialist.