

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATION**

**WATERING FACILITY**

(No.)  
**CODE 614**

**1. SITE PREPARATION**

Clear all trees, brush, roots, and grass, from the site of the watering facility.

The area immediately surrounding the tank or trough shall be smoothed and graded to permit free drainage of the surface water without erosion. The foundation shall be leveled, scarified, and compacted, before any material is placed.

If a tank or trough is to be constructed on a relatively impermeable soil, at least 4 inches of sand, gravel, or other porous material shall be placed on the foundation. When onsite materials exist, or can be reworked to provide a well-drained base, imported drain materials will not be required. The surface of the base material shall be smooth and without sharp protruding rocks, so as to prevent damage to the bottom of the tank or trough.

The base material shall surround the outside of trough for a minimum of 4 feet. The bottom of the trough or tank shall be at least 2 inches above the surrounding ground surface.

**2. CONSTRUCTION MATERIALS**

Common construction materials for water facilities are fiberglass, reinforced concrete, steel, rubble masonry, high-density polyethylene (HDPE), large rubber tires, rubble masonry, plastic, and wood.

**Fiberglass.** Glass content shall be 30 percent by weight. Resin content shall be 70 percent by weight. Minimum wall and bottom thickness shall be as shown on the drawings. All surfaces shall be free of cracks, crazes, dry spots, air bubbles, pinholes, pimples, and de-lamination. The exterior surface shall be smooth with no exposed fibers.

Tanks may be made by the filament wound or the contact molded (hand lay-up or spray gun) methods.

The spray gun or pneumatically applied method shall be used for all reconstructed tank applications.

Used steel tanks, prior to reconstructing with fiberglass, shall be thoroughly sandblasted to remove all loose rust, concrete, paint, tar, or other foreign material. All joints, seams, corners, and pipe fittings shall be reinforced with adequate fiberglass impregnated polyester resins. The top edge of open tanks or troughs shall be reinforced with a steel flange or other acceptable reinforcement. On reconstructed tanks, the fiberglass coating shall roll over the top edge of the existing tank at least 4 inches.

**Reinforced Concrete.** The cement shall be Portland Cement, Type II, II A or V, or as shown on drawings. If Type II or Type V is used, an air-entraining agent (ASTM-C-260) shall be added to the mixing water in the amount needed to produce an air content of four to seven percent in the concrete mixture.

Water, free from acids, alkali, or vegetation, shall be used. Water suitable for livestock is usually okay.

Clean, hard, durable, un-coated aggregates, free from clay, soft or flaky particles, loam, caliche, organic matter, or other harmful substance shall be used.

Concrete and steel shall be placed continuously as one unit between footing and floor. A construction joint shall be formed between the floor and the wall as shown on the plans for reinforced concrete walls.

Reinforcing steel shall have a cover of at least 2 inches of concrete. All concrete shall comply with NRCS Practice Standard 587, Structure for Water Control.

**Rubber Tire.** Large clean, used tires may be used as troughs. Tires must be certified by the supplier as being suitable for use for livestock water.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service.

### **3. PLANS AND SPECIFICATIONS**

All materials, placement, anchoring, proportioning, and protection shall be as shown on the drawings.

### **4. CONSTRUCTION**

All construction shall be performed in a workmanlike manner, and the job site shall have a neat appearance when finished.

The completed structure shall meet the performance requirements of the intended use.

### **5. MEASUREMENT**

The measurement of completed work shall be one of the following options:

- The completed job for each facility, or
- The design quantities of materials used as computed on basis of the design or as modified by approved change orders during construction.