

NATURAL RESOURCES CONSERVATION SERVICE CONSTRUCTION SPECIFICATIONS

FENCE - WELDED WIRE PANEL

(Ft.)

CODE 382

Welded Wire

(See Standard Drawing Number FEN-382-PAN.)

A. Wire Spacing

The base of the welded wire panel shall be placed near the ground surface. The panel fence including the top wire(s) shall be at least 42 inches above ground level and 2 inches below the top of posts on wood posts and 1 inch below top of steel posts. Horizontal wires in panel shall be 6" or less. Fences constructed with panels less than 34 inches in height shall have at least two barbed or smooth electric wires above the panel. The spacing between the panel and the first barbed wire shall be a maximum of 4" or 6" for smooth electric wire. The spacing between top wires shall be 8" or less. Do not use barbed wire as an electric wire!

Fences constructed with welded wire panels higher than 39 inches shall have at least one barbed or smooth electric wire. The spacing between the welded wire and the barbed wire shall be a maximum of 4" or 6" if smooth electric wire. A 1"x 5" or larger board is preferred over use of top wires. The top board may be substituted for top wire. In areas of

high livestock concentration (i.e. corrals, lanes) construct with a middle and top 1" x 5" board. Place wire and board on the side of post with most livestock pressure. Typically board length should be the same length as the panel 16' or 20'. Stager boards if two boards are used.

B. Type Wire and Board

Wires shall be welded at every intersection and coated with galvanized zinc coating. Use a minimum of 6 gauge wire. The wire specifications for the barbed wire shall be the same as for a barbed wire fence.

Lumber shall be bald cypress, oak, eastern or western red cedar, or redwood or be treated with creosote or comparable preservative. If painting is desired, lumber shall be treated with an anti-fungal agent or a waterborne preservative such as acid copper chromate or chromate zinc chloride.

C. Pull Assemblies

No pull assemblies are required; however, **6" post will be installed at all corners and gates.** Brace assemblies will be installed on the hinge side of gates.

D. Post Spacing, Length, and Depth

First, install posts in dips and rises. For 16’ panels the maximum post spacing is 8 feet, for 20’ panels post spacing is 10 feet. At least every other post shall be a wooden post spaced a minimum of 16 feet and 20 feet respectively. Steel post shall be spaced between wooden post. Use all wood post when boards are used.

Wood posts must have a minimum length of 6 feet and set or driven to a minimum depth of 24 inches. When set, earthfill placed back around posts shall be thoroughly tamped. Wooden line posts shall have a 4-inch top commercial size (3 inches for Osage orange).

Steel posts shall be driven minimum of 12” deep or top of the flange, use standard “T” shaped steel posts minimum of 5.5 ft. long.

Post spacing in areas shallow to rock may vary based on availability of post sites. Probe with a rock probe to determine desirable post sites. Steel pipe and steel post are recommended to use in cracks between rock. Concrete in post where possible. Rock bits are available in some areas for drilling rock. Use stays to maintain post spacing. Stays should not be used more often than every other post. Post set as deep as possible using a minimum of 8” x 30” or equivalent of concrete. Use live trees as post only where soils are shallow, see section F.

E. Line Posts

All wooden posts (except Red Cedar, Osage Orange, or Black Locust) shall be treated according to use category UC4A of the American Wood Preservers Association (see Table 1):

Use Category	Minimum Retention Rate (pcf)			
	CCA	ACQ	CBA-A	CA-B
UC3	0.25	0.25	0.20	0.10
UC4A	0.4	0.4	0.41	0.21

Excerpted from AWPA Standards 2004

Table 1: Minimum treatment rate for selected preservatives

At least half the diameter of red cedar shall be heartwood. Quality of treated wood shall provide sufficient strength and last for the expected life of the fence.

Steel posts shall be rolled from high carbon steel and have a protective coating either galvanized by the hot dip process, painted with one or more coats of high-grade weather resistant steel paint, or enameled and baked. Steel posts shall be studded, embossed, or punched to aid in the attachment of the wire. Steel posts shall weigh not less than 1.25 pounds per foot of length.

F. Live Trees as Line, Bracing, and Corner Posts

No more than 50% of post shall be trees unless in a flood plain or area shallow to rock. Live trees used for

corner, bracing, and line posts shall have a diameter breast height (DBH) equal to or greater than those prescribed for normal wooden posts.

Some alignment variation shall be allowed, but caution should be taken to minimize offsets and prevent excess fencing needs.

Wire or insulators will not be fastened directly to trees. When using live trees, protection will be provided between the tree and wire or insulators (UC3 treated 2 x 4's, fiberglass, or rigid plastic strip).

G. Corner, Gate, or End Assembly

Braces assemblies are required at all gates on the hinge side of gate. Six inch posts are required at ends, corners, and angles up to 150 degrees in the fence line.

Wood posts will be sufficient length for the construction of at least a 42" high fence and permit driving or setting the post at least 36" deep. Earth backfill shall be thoroughly tamped. If concrete is used, set the posts a minimum of 30" deep.

Posts of equivalent strength may be substituted, if they have suitable means of attaching wires and boards. Wood posts will be at least 2 inches higher than the top wire of the fence to prevent splitting.

Posts of other materials shall be at least 1 inch higher than the top wire of the fence.

H. Bracing

(See Standard Drawing Number FEN-382-BR1 and BR2.)

Bracing is not required for welded wire fence; however if three or more wires are run in addition to panels follow applicable standard for wire. Brace post used for hanging gates.

The brace member shall be the equivalent of a 4" diameter post or standard weight galvanized steel pipe of 2" diameter installed at least 3 feet above ground, or between the top two wires, whichever is higher. An 8' brace member is ideal but shall be at least 6' long.

The brace wire shall be number 9 gauge smooth wire or 12-1/2-gauge high tensile strength smooth wire. Twist sticks or inline strainers will be used to tighten brace wire. Twist sticks must be a minimum of 2" x 2" and remain in place.

I. Staples and Wire Fasteners

Staples shall be of 9-gauge steel or heavier with a minimum length of 1½ inches for softwoods and a minimum length of 1 inch for close-grained hardwoods. Barbed staples shall be used for pressure treated posts. Drive staple diagonally to the wood's grain and at a slight downward angle (upward if pull is up) to avoid splitting posts and loosening of staples. Space should be left between staple and post to permit free movement of wire. Barbed staples shall be used for pressure treated posts.

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Wires may be attached to steel posts by use of manufacturer's clips or by two turns of 14-gauge or heavier galvanized wire.