CONSTRUCTION SPECIFICATION

NATURAL RESOURCES CONSERVATION SERVICE

FENCE - WOODEN BOARD

(Ft.)

CODE 382

Scope

The work shall consist of furnishing and installing wooden board fences, including gates, posts, braces and appurtenances in accordance with the Fence (Code 382) Conservation Practice Standard and this construction specification. Wooden fences are often used for livestock working pens, where aesthetics are important and sometimes as part of a livestock watering ramp into a pond or stream.

1. Board Spacing

The fence height will change according to need (see Table 2. Criteria for Material Type, Size and Spacing for Board Fence). Install a minimum of 3 horizontal boards or rails. Space the boards 12 inches to 14 inches apart on center.

Place horizontal boards on the side of posts facing livestock. If necessary for the boards to be on the side away from livestock, install one or more barbed or electric wires at nose height of the animal being controlled.

Stagger rail joints so they will not all start and end the same on every post. For example for a three plank fence, posts would alternately have two joints or one joint. For a four plank fence, every post would have two joints.

For aesthetics install a vertical face board to cover joints on every post and two on corners. Vertical boards may be needed to aid in attachment retention for lumber subject to twisting.

2. Type of Board

The horizontal boards shall be a minimum of 1 in. x 6 in. and 12 ft. long, commercial cut. Lumber shall be treated with creosote or comparable preservative. Treatment will meet the American Wood Preservers' Association (AWPA) U1-06/UC3B standard. If painting is desired, lumber shall be treated with an anti-fungal agent or a waterborne preservative such as acid copper chromate, not creosote. See Section 4 for acceptable wood preservative treatments.

3. Pull Assemblies

Pull assemblies are usually not required. However, if required refer to construction specifications for barbed wire, woven wire or high tensile fences. Also reference their drawing. These are found in the NRCS Electronic Field Office Technical Guide (EFOTG): https://efotg.sc.egov.usda.gov/

4. Post Spacing, Length, and Depth

Refer to **Table 2. Criteria for Material Type, Size and Spacing for Board Fence.** Space posts to accommodate selected rail length, meet site limitations and construction needs.

Wood post and metal posts may be used. Follow criteria in Table 2. Posts are recommended to be driven. When posts are set, earthfill placed back around posts shall be thoroughly tamped. Wooden line posts shall have a minimum nominal diameter of 4-in. for line posts. Gate posts will have a minimum nominal diameter of 6 inches.

Avoid installing wooden fences in and around rock if at all possible. Consult with NRCS prior to installing wooden fence posts in rock situations.

All wooden posts (except red cedar, osage orange, or black locust) shall be treated according to use category UC4A of the AWPA, U1-06 or later standard. (See Table 1 below):

Table 1: Wooden Board Fence - Minimum Treatment Rate for Selected Preservatives

Use Category	Minimum Retention Rate (lbs./ft^3)				
	CCA	ACQ**	CBA-A	CA-B	Creosote Coal Tar
UC3*	0.25	0.25	0.20	0.10	8
UC4A*	0.4	0.4	0.41	0.21	8

UC3* refers to exterior construction, above ground, uncoated or poor water run-off. UC4A* refers to Ground Contact or fresh water, non-critical components. **Do not use aluminum fasteners or other products with ACQ treated wood products due to corrosion. Instead use “hot dipped” galvanized or stainless steel products.

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. If ACQ* preservative is used, then do not allow aluminum wires, nails screws or staples to be used with this treated wood. Use only those that are galvanized.

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

Avoid using live trees for fence or gate posts.

6. Corner, Gate, or End Assembly

Refer to the included criteria for material found in Table 2**.** Criteria for Material Type, Size and Spacing for Board Fence.

Normally wire bracing assemblies with wood fences are not required. However, if there are circumstances where wire braces are needed, follow the construction specifications and drawings for barbed wire, woven wire or high tensile wire fences. Refer to the EFTOG https://efotg.sc.egov.usda.gov/ for this information.

7. Fasteners

Attach each rail or horizontal board with two 16d galvanized or equivalent treated nails or screws. Use at least two nails when attaching each board to posts. Fully drive at least 2 spiral or ring shanked, 3.5 inch 16d galvanized nails per post or connection. Appropriate screws may be used but they are likely to cost more and slow construction.

Table 2. Criteria for Material Type, Size and Spacing for Board Fence.

Member	Rec.* Min. Fence Height (feet)	Kind of Post	Post Top Diameter (inches)	Post Length (feet)	Post Placement Depth (min.)	Rec. Post Spacing (feet)	Max. Post Spacing (feet.)	Rec. Board Height From Ground (inches.)
Corral Fence Posts (recommended post spacing is 6 feet)								
Gate Post	5	Wood	6	8 ½	42″	6	8′	18, 32, 46 , 60
Gate Post	5	Pipe	4	8 ½	42″	6	8′	18, 32, 46 , 60
Line Post	5	Wood	5	8 ½	36″	6	8′	18, 32, 46 , 60
Line Post	5	Pipe	4	8 ½	36″	6	8′	18, 32, 46 , 60
Pasture Fence Posts (recommended post spacing is 8 feet)								
Gate Post	4	Wood	6	7 ½	42″	8	10′	12, 24, 36, 48
Gate Post	4′	Pipe	4	7 ½	42″	8	10′	or
Line Post	4′	Wood	4	6 ½	30″	8	10′	18, 33, 48
Line Post	4′	Pipe	4	6 ½	30″	8	10′	
Boards	Material and Dimensions							Max. Space Between Boards
Corral	Min. 2 inch by 6 inch by 8 foot rough cut, treated plank (2″x6″x8′)							12″
Pasture	Min. 1 inch by 6 inch by 8 foot rough cut treated plank (1″x6″x8′)							12″

*Rec. = Recommended