

# Fencing FACTSHEET



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## PASTURE FENCING FOR HORSES

This factsheet outlines various permanent, non-electric fence designs to contain horses on pastures. Wood, strand wire, woven wire, PVC and polymer-based materials are discussed.

A large percentage of horse injuries that occur on farms are fence related and may be as a result of the fence materials, the fence design, the workmanship, or combinations of all three. While a horse fence may simply be a modified cattle design (for example more wire strands and a higher overall height), the most successful horse fences are designed and built with specific horse habits in mind:

- The tendency to get hooves and legs caught in or through the fence or brace assembly.
- The habit of chewing wood boards.
- The need for good fence visibility.

**Upgrading existing fences** is only to be considered where the fence is not badly aged or in need of extensive repairs. New construction is otherwise preferred.

The following discussion assumes construction of a new permanent horse fence.

**Planning**, as in any construction project, is the first step:

- Sketch the area showing fence and gate locations.
- List the constraints (i.e. topography, vegetation, soil type, etc.).
- Where required, accurately identify property boundaries.

- Decide on permanent or temporary fence needs.
- Decide on electric, nonelectric or combinations thereof.
- Do you require additional aesthetic values?
- Do you have a material preference?
- Establish a budget range; will you do the labour?

**Fence types** vary from all wood, all steel wire, polymer, PVC, or combinations of these materials. Designs using these materials vary from large pastures (low fence pressure) to small corrals (high fence pressure). Barbed wire may be a poor material to use for horse fences (especially for high-value animals) and should not be electrified.

**Electric** fences can be used either alone or in conjunction with non-electric fences. An electric fence is a psychological rather than a physical barrier that must be constructed as both a fence and an electrical circuit. An all-electric fence may have poor visibility and be a problem with some horses. One electric wire used on a non-electric fence can give good control with good visibility and keep horses from pressuring fences. As with other livestock, horses must be trained to an electric fence, but as they are sensitive to electricity, this is not difficult.

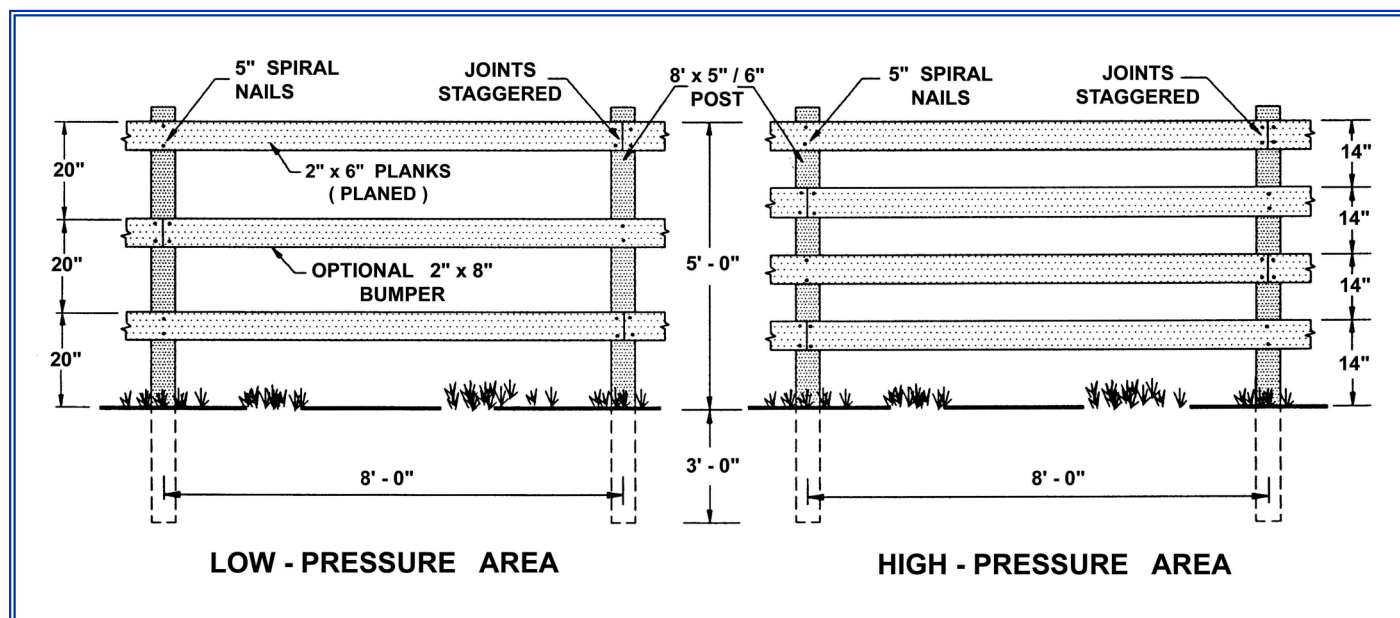
**Temporary** or movable electric fences are used if grazing control is desired within a fence pasture. Easy to use “polywire” is used for temporary fences or standard steel smooth wire.

**Steel fence panels** can be used in high-pressure situations when temporary or movable containment is required. Panels 10 ft by 5 ft high (80 lb) link together in a self supporting system.

**Permanent** fences should be installed only after good planning to limit future concerns especially property boundary fences. Seven types of permanent fence are discussed in the following pages (see Table 1 at the end of this Factsheet for a quick comparison).

**1 All wood fences**, consisting of treated wood posts and round or board rails, are common in British Columbia. With quality materials and construction, wood fences are effective. Chewing of the rails, especially the top rail, is a problem for both fence life and horse health. An electric wire spaced away from the rail can reduce chewing.

Wood fences are used in all pressure situations, but are most commonly used in high-pressure locations such as corrals. The material cost of the rails may vary greatly. Expect medium to high maintenance and repainting costs. See Figure 1 for typical all wood designs using planks.



**Figure 1** Typical All Wood Plank Fences

**2 Wood posts/steel strand wire** fences are also very common, and are most effective in low-pressure pasture situations. Barbed wire and high-tensile smooth wire are common steel fence wires. These fence designs are often modified cattle fences. See Figure 2.

**3 Wood posts/steel woven wire** fences are effective in horse control with various wire designs available. Woven wire options are varied but two features should be carefully selected.

- First, use woven wire with continuous verticals. This is important for a quality fence. Choose either:
- Knotted joint wire – one piece verticals with separate knotting wire at all the joints to horizontals, or:
- Mesh type wire – one-piece verticals that are linked or twisted at the joints to horizontal.

The least desirable woven wire is the hinged joint type that has separate vertical pieces twisted together (they can come apart), or welded joint wire (no flexibility).

Secondly, select woven wire by the size of the openings. Because horses will put their hooves through openings or “walk down” the fence, choose woven wire with an opening dimension small enough to prevent this from occurring.

Woven wire in a diamond mesh, a 2” by 4” rectangular opening, or a polymer grid fabric should be selected. See Figure 3. Standard farm woven fence with larger openings is not recommended for most horse pastures.

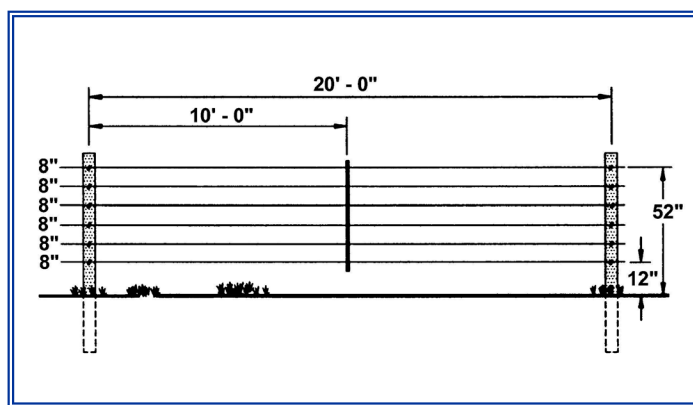


Figure 2 Typical Wood Post/Wire Strand Fence

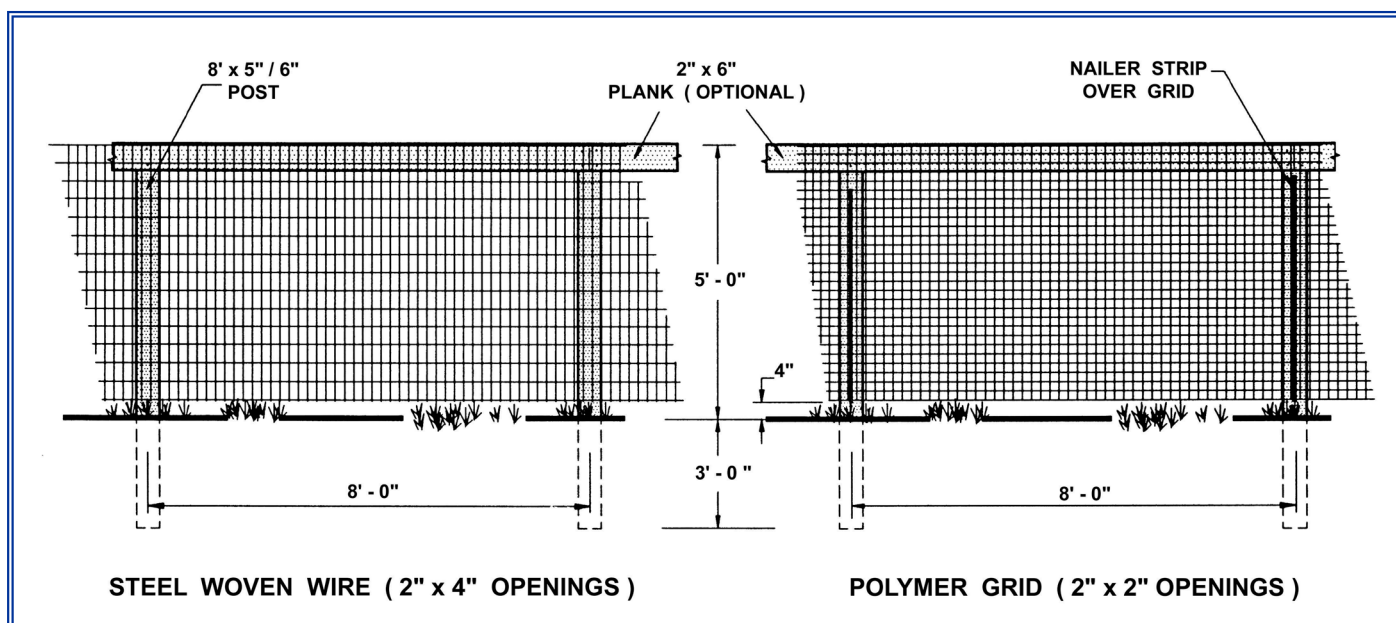


Figure 3 Typical Steel Woven Wire and Polymer Grid Fences

**4 Wood posts/polymer coated steel wire** fences are relatively new to British Columbia. They consist of steel wire coated in a polymer (usually white) available as either a single strand (to replace single strand steel wire) or in a “rail” consisting of two or three steel wires spaced 4” or 5” apart and covered in a polymer coating (to replace wood rails or boards).

This material combines the strength of steel, the low maintenance of polymer with the visibility and the aesthetic value of white rail fences. The rail product is sold as “Centaur HTP Fencing Systems” (high-tensile polymer) and the single strand wire as “Equi-Wire.” Both are available in British Columbia. It is sometimes considered an “estate” fence rather than a common farm fence because of its high aesthetic value.

**5 Wood post/all polymer strand** fences are recently becoming popular in British Columbia, partly due to their low maintenance and high aesthetic value. This monofilament is a heavier gauge than most steel fence wire (8.5 gauge compared to 12.5 gauge) and has a breaking strength slightly greater than standard barbed wire but less than high-tensile wire. It is single strand solid polymer, white in colour that produces an attractive, highly visible fence.

This monofilament is easy to handle and is joined by knotting. It is stapled “tight” to the fence post unlike steel wire. These fences are otherwise similar to other wood post/steel wire horse designs in the number and spacing of strands and the overall height as shown in Figure 2. The monofilament is sold as “Bayco Fencing” in B.C. It could also be considered an “estate” fence.

**6 Wood posts/all polymer grid** fences are relatively new to British Columbia but are a proven product that is quite “horse safe.” This polymer is produced in a grid format that has 2” by 2” openings (5 ft height typical for horses). It is stretched and attached with nailing strips to wood posts. Horses are said not to chew the poly-grid, but a wood top rail or an electric wire can be used. See Figure 3 for a typical design.

The polymer grid products are available in various qualities depending on the type of material and whether the fabric was “stretched” during manufacture (producing greater web strength) and

whether it was stretched in two directions (greatest strength). Generally, cost is proportional to strength. As with other polymer fence products, low maintenance, good visibility, horse safe, aesthetic value and durable colour (usually black or white) are advantages.

**7 All poly vinyl chloride (PVC)** fences are relatively new to British Columbia. This product is designed to imitate the wood post/wood rail traditional horse fence using long lasting, low-maintenance PVC. These fences have high aesthetic value and could also be considered an “estate” fence.

**Pasture fence layout** is important:

- Ensure good fence visibility.
- Allow adequate room for horses to run for exercise.
- Keep corners to a minimum.
- Consider “rounding” corners.
- Allow for separate pastures for “difficult” horses.
- Locate gates for good access and horse movement.

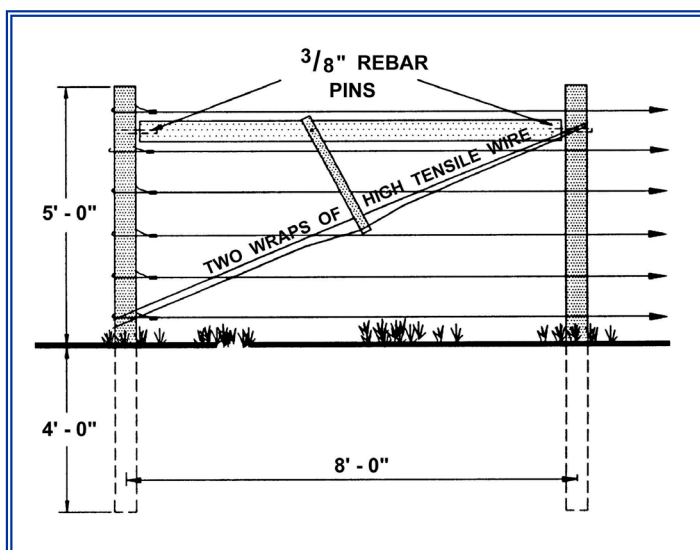
**Gates** in horse pastures require adequate strength, either steel pipe or sturdy wood planks or rails. Some lightweight formed metal gates may not stand up to horse pressure. Choose secure latches (“horse proof”). Consider ease of operation and whether a gate must be opened from horseback.

**Cattleguards** in place of horse gates are generally not preferred. Horses may jump standard cattleguard widths or may catch their hooves in the open spaces.

**Brace assemblies** are required for all horse fence types except the all wood rail and all PVC rail designs. A brace is the anchor point for the wire strands, woven wire or grid that forms the fence.

Braces must be constructed to withstand the loads due to the material tension as well as loads due to the horse pressure against the fence. Figure 4 is a typical end brace using a horizontal rail pinned to the driven posts with two 3/8” rebar pins. Two wraps of brace wire (using high-tensile wire) complete the brace.

While this design is structurally sound, problems can occur where space between the brace wire and the fence wire can trap a horse’s leg. To prevent this, block off this space on all braces accessible to a horse’s leg. If using woven or grid wire, wrap the brace on both sides.



**Figure 4 End Brace Assembly**

<b>TABLE 1 TYPES OF HORSE FENCES ( PERMANENT, NONELECTRIC )</b>								
(Refer to text for detailed information)	RAIL FENCE			SEPARATE STRAND FENCE			WOVEN or GRID FENCE	
	WOOD POST		PVC POST	WOOD POST			WOOD POST	
	WOOD RAIL	POLYMER / STEEL RAIL	PVC RAIL	STEEL WIRE	POLYMER / STEEL WIRE	ALL POLYMER STRAND	STEEL WOVEN	POLYMER GRID
Chew?	yes	no	no	no	no	no	no	no
Catch hooves?	no	no	no	no	no	no	may <sup>1</sup>	no
Catch legs?	no	no	no	may <sup>2</sup>	may <sup>2</sup>	may <sup>2</sup>	may <sup>1</sup>	no
Visibility	good	good	good	poor <sup>3</sup>	fair	fair	good	good
Colour	painted	white or black	white	steel	white	white	steel	black or white
Maintenance	high	low	low	medium	medium	medium	low	low
Aesthetics <sup>4</sup>	medium to high	high	high	low	medium to high	medium to high	medium	medium to high
Relative Cost	low	high	highest	lowest	medium	medium	high	highest

1. Choose small opening woven wire.
2. All separate wire fences have the possibility of tangling horse legs.
3. Steel wire strands (12.5 gauge commonly used) have the least visibility.
4. This factor is, of course, personal and subjective.

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