

Reinforcement, therefore, is steel in the form of rods, bars or wires, buried in concrete to take up and to withstand the strains which tend to stretch or to bend the concrete. A concrete fence post is merely a small concrete column. Reinforced, it easily stands the strain from usage in a fence line.

The value of reinforcing concrete posts properly may readily be seen from figure 13. If a load (L) is raised so that its weight is supported on one side by a wooden post, the post will bend. The fibre in the wood on the side away from the load may be tough and elastic enough to prevent the post from breaking, and when released the post will spring back into its former position. In the third figure a No. 9 wire (W) is fastened securely to the wooden post at the top and the ground surface, and is supported along its length by the struts (S). If the same load is applied, the post will not bend, because the wire takes up the bending or stretching strain. This is precisely the case with the reinforcement in a concrete post. Supported along its length by the concrete, the wire (W) or steel in other shapes takes up the bending or stretching strains. Since the load which causes bending or stretching may come from any direction, concrete posts are reinforced on every side; otherwise they might break in a manner somewhat similar to that in which the wooden post bends when the reinforcement is not on the proper side of the post.

In the effort to be safe it is a common fault to insert more reinforcement than is absolutely necessary. This adds needlessly to the cost, for concrete becomes stronger as it grows older.

Kinds of Reinforcement

With regard to the roughness of the outside, metallic reinforcing materials are divided into two classes, smooth and corrugated or deformed. The general result of the many tests carried on in testing laboratories seems to indicate that in strength of bond, if the concrete is sufficiently rich and well mixed, smooth surfaces give satisfactory results. Two kinds of reinforcement are much used—bars and wire.

Bars—Round bars three-sixteenths or one-fourth of an inch in diameter are the size and kind most used on the farm. The stock on hand at blacksmith shops and hardware stores is generally from steel that stretches too easily and therefore is not the best for reinforcement. Companies which make a specialty of reinforcing materials can furnish both rods and bars which stretch only under very large loads.

Wire—The development of the wire fence has produced a material well suited for reinforcing purposes. Of equal size, such wire will produce a stronger reinforcement than the material above described. In order to obtain straight wire of the necessary length, the coils ordinarily placed on the market should not be straightened out. Straight wire can be obtained from dealers in the same manner as baling wire; that is, either single or twisted into two or three ply cables, and of the length desired. The plain, ungalvanized fencing wire is the proper kind, for galvanization adds nothing to the strength, and the metal will not rust when incased in the concrete.