



Rural HIGHLIGHTS

Local News from Rural Electric Convenience Cooperative

Getting to know your poles

The cooperative provides electric service to 5,862 accounts and maintains 1,375 miles of energized lines. Nearly 26,000 utility poles are used to support the overhead lines and other crucial infrastructure. Utility poles play an important role because a distribution system is only as strong as its weakest link. The system's integrity or dependability of electric service is determined by the condition and quality of the wooden poles. This is especially true in rural areas where distribution systems are predominately overhead.

Utility poles must withstand harsh environments and endure decades of extreme weather. They are exposed to natural disasters like tornados, ice storms and floods. Rot and decay occurs below the ground. The freezing and thawing of the earth can damage the base and reduce the life of the pole. Manmade disasters are also common, such as automobile accidents, tractor contacts and lawnmower gouges.

Southern yellow pine is the most commonly used wood for



producing high-quality poles in the Midwest, but Douglas fir and red cedar are popular in other parts of the country. Utility poles are not available at the local lumber yard, and delivery would be difficult if they were. Our smallest pole is 30 feet long and weighs more than 800 pounds. Larger poles can exceed 65 feet and weigh more than 4,000 pounds.

The industry has defined standards for height, weight and class.

Poles are rated for fiber strength, transverse wind, bending load, groundline stress and other performance factors. All poles are labeled or branded with the name of the manufacturer, height of the pole, class or pole strength, species and treatment. These labels, referred to as "Birthmarks," are strategically located to remain visible after the poles have been installed, ideally at eye level.





Birthmarks can be easily seen on new poles but become less visible over time, which is illustrated above.

Many of RECC's poles come from Huxford Pole and Timber, so "HPT" will often be the first letters appearing on the pole's birthmark. It is common to see "WQC" as well. This stands for Wood Quality Control Inc., a subsidiary of the National Rural Electric Cooperative Association that was created in 1982 and provides independent oversight of pole production and treatment.

Directly below the date is an abbreviation for species and preservative. The first two letters on this line indicate the species of wood, like "SP" for southern pine or "DF" for Douglas fir. The remaining characters indicate the type of preservative used to treat the wood, such as "P" for pentachlorophenol or "C" for creosote.

The last line indicates the pole's class and length. The class is

determined by the strength of the pole. The smaller the class number, the more load it can withstand. The last number is the pole's length. They are produced in increments of 5 feet and marked as "30," "35," "40," and continue over 60 feet in height.

These branding methods were preceded by less informal means of identification. Older poles were identified by aluminum tags that



Manufacturer's code, class and length are also printed on the ends of each pole for easy identification.



An original "REA" co-op label



Inspection tags from 2008 and 2018



Deterioration of outer shell

were secured by nails. They would only contain the manufacturer and date. Cooperatives and other utilities would then add their identification by attaching metal letters after the pole was installed.

Inspection tags, also found on poles, come in various shapes and sizes and display the date of a successful inspection, such as the number "18," which indicates the testing was performed in 2018. Red tags signify a failed inspection but are rarely seen because rejected poles are scheduled for replacement.

The physical markings provide basic information about a pole's identity.

After years of exposure, the letters and numbers tend to fade, eventually becoming illegible. Fortunately, the cooperative has extensive records on every pole purchased. Engineering lists the pole's specifications, configuration, attached equipment and location. Inspection data is also included in the pole's history.

Utility poles are the support structure of the entire distribution system and must be maintained. Testing helps identify the weaker poles that jeopardize the system's integrity. Each pole is tested every 10 years. Appearances can be deceiving as some of the most dependable

poles look weathered and shot, while perfect-looking shiny poles fail inspection.

Most cooperative poles will stand for 30 or 40 years before being retired. Others will fail inspection and be replaced before completing the expected lifecycle. Some will meet an untimely demise, caused by the impact of an automobile or a grain bin being launched from a tornado. Then, there are the survivors. The ones lucky enough to remain standing after 60 years.



After being retired from service, the used poles are often repurposed by our co-op members.

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Creating a pole from start to finish

A utility pole starts as a seedling, slowly growing with sound forestry practices. From the seedling, the forest is tended for many years before a tree can even be considered a utility pole candidate. Once large enough to create the proper balance of harvest in all sizes, we harvest the trees, de-limb, and truck them to our plant where they are taken to the debarking and drying facility.

Once the trees are debarked and dried, they become white poles. They are sized for length, classed for circumference, and finally chosen for customer orders. Our production team frames every pole by hand to each order specifications and then the white pole is put into a “charge” for treating. The client-approved treatment process is monitored continuously. Industry specifications are checked, and penetration levels are tested before the completed order is sent either by truck, rail or barge to our customers across North America and internationally. (Source: Huxford Pole and Timber)



This three-phase pole has weathered many storms. Notice the lineman's hook marks.