The best bang for your buck: It was a phrase coined to illustrate the best value available, from cell phones to cars to couches. And nowadays, it's a phrase used to describe the most recyclable material in the world: steel. Steel, which can be cut, formed, welded and fabricated in any which way, is growing in prevalence in utility poles. Utility poles can be telephone poles, lighting poles, power distribution poles, etc. There are approximately 185 million utility poles in North America and more than two million are replaced annually, now more commonly than ever, with steel. Dan Snyder, the Manager of Business Development for the Steel Market Development Institute (SMDI), a business unit of the American Iron and Steel Institute (AISI) estimates that today, more than 600 of approximately 3,100 utility companies in the US are using steel poles with some companies converting their entire distribution system from wood to steel.

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But as with any sector that heavily uses steel, volatility in prices has a direct effect. Utility pole manufacturers note that while the steel utility pole business has grown over the years, the project life cycle can be lengthy, and depending on the size of the project, and how many poles are involved, the lag time between a manufacturer bidding the project until the time it actually hits the factory floor can be anywhere from a couple months to a couple years in some instances—which, considering how unstable steel prices have been as of late, makes cost prediction difficult. And so, while some large privately-funded commercial projects are faring well, federally funded projects—which can afford to be flexible with material costs—are thriving and driving steel utility pole demand all over the US.
Composition

Steel utility poles begin as hot rolled coil that is uncoiled and either cut appropriately and formed into a tube or cut into a trapezoid to be fabricated into a tapered pole. Both tube and tapered utility poles are used for the same application, however depending on the application and type of pole, they can reach up to 2,500 pounds (1,13 metric tons). Snyder explains that the initial cost of steel poles is higher than for wood poles, but it’s important to look at all future costs such as maintenance and those associated with replacement as well. “The initial cost is a hurdle we have to overcome,” he said, but looking forward to the long term and the overall life cycle of steel poles versus wooden poles, the initial cost will pay for itself in a matter of years.

Traditional wood poles have a life-span (which is highly dependent upon weather conditions) of approximately 30 years while steel poles often remain in use anywhere from 50-80 years. Because they are a natural material, wood poles will experience loss of strength over the years due to aging or insect infestation. In hurricane-prone areas like Florida, for example, it’s not uncommon for a wooden utility pole to just snap during a storm. When utility poles break and power lines are disrupted, so is electricity to surrounding neighborhoods, causing a costly and ominous situation to quickly replace the power source. Additionally, wood poles are plagued with the problem of being prime targets for woodpeckers, an issue that is so serious it has convinced some utility companies to switch over to steel. A high prevalence of woodpeckers in areas such as Texas has significantly cut down some wood poles’ life expectancy.

In a steel distribution pole case study conducted by utility BlueBonnet Electrical Cooperative, Thomas Ellis, BlueBonnet Manager of Engineering said that “the big savings is that we don’t have to go back in 30 years (the average lifespan of a wood pole) to replace hard-to-reach poles.” Even greater benefits are realized, said Ellis, when considering woodpecker damage. “We have areas where we are replacing wood poles every five years or even more frequently because of woodpeckers,” Ellis said. “We replace those poles with steel poles and eliminate the woodpecker problem altogether.

The steel poles may cost more upfront, but they are resistant to decay and woodpecker damage and, with proper maintenance, will last well past a typical wood pole. Bottom line, we use them where we need poles to last a long time with little maintenance.”

Of course, when natural disasters hit or other serious problems occur, steel poles can also be damaged, however, during severe wind or snow storms, or even hurricanes, steel utility poles won’t simply snap and cut off power. Steel poles are much more likely to bend or shift, but such a problem usually won’t disrupt power lines, which in turn results in less of a headache for linemen replacing the pole and the utility companies that have to take responsibility for the situation.

Versatility and Sustainability

Because of the abilities to fabricate steel in numerous ways, steel poles can be easily altered and custom designed to support larger and heavier loadings depending on the location and application. Additionally, steel poles are more sustainable than their wood counterparts. Other than being 100 percent recyclable, the poles are non-toxic, while wooden poles are often coated with creosote or other chemicals aimed at extending the life-span of the wood pole. And since wood poles are treated with such chemicals that have been deemed harmful to the environment, they cannot be readily recycled like steel utility poles can, making them less environmentally friendly.

Today the SMDI is making great strides informing people about the benefits of steel poles, which far outweigh the downsides such as initial cost. Snyder has stressed that its linemen education program has been one of the SMDI’s foremost objectives in the last five years, and one of the SMDI’s biggest contributions to the steel poles initiative.

As our society dictates, if we are not going forward we’re simply moving backward, so this growing outlet for flat-rolled steel, highly promoted by the SMDI, will find its way into every city in every state in the US.