A **Cost-Effective** Choice

The **Facts**

Penta is a highly economical choice for preserving wood, particularly over the long-term. According to an independent analysis conducted by Engineering Data Management[1], treated wood is the most cost-effective option for utility poles, both in terms of initial costs as well as total life-cycle costs.

Of the preservatives available for treating wood, only penta is created from two basic and widely available chemicals: phenol and chlorine. This helps assure a reliable supply, which Penta has demonstrated for more than 60 years. Time and again, penta pole production has met emergency demand caused by natural disasters, such as hurricanes, ice storms and tornados.

What else makes penta such a cost-effective choice for utility poles? A number of factors:

Penta poles have a long useful life.

Once installed, penta poles typically last 40 years or longer because of penta's ability to resist damage from decay, fungi, moisture and brush fires.

Penta poles' replacement rate averages less than four percent per decade with periodic maintenance, according to in-service records from several utility companies.

Penta repels termites and other wood-destroying insects, minimizing maintenance frequency.

Penta poles' re-use reduces disposal costs.

Because they are not considered to be a hazardous waste, penta poles can be reused and recycled in a number of ways, such as fence posts and farm lighting.

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1 "Lifecycle Study Proves Wood is the Best Investment," *Wood Pole Newsletter, Western Wood Preservers Institute, Fall 1997.*

More Cost Advantages of Penta Poles

Unloading and Storage
Unloading penta poles is a fast and smooth operation that typically does not require special slings. Once unloaded, poles can be stacked in space-saving piles. Dents and surface nicks that might compromise other materials do not harm penta poles, nor require repairs. Poles made from steel, concrete and plastic take an estimated 30 percent more time to unload, according to a study conducted by the Western Wood Preservers Institute.

Installation Penta poles do not require special installation equipment. If they need to be moved after installation, they can be relocated and reused without special equipment or transportation.

Maintenance Most maintenance is simple and can be performed by trained utility personnel or outside contractors. Drilling, reframing, and adding or changing hardware can be performed promptly on the spot. Normally, there is no need to remove the pole from service to do a treatment or modification. If linemen need to climb a penta pole, they can quickly attach gaffs and climb without delay—working on more poles, more quickly.

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Penta can be burned for energy recovery in combustion units and industrial boilers that are permitted to burn penta-treated wood because penta **does not contain toxic metals**, unlike some other wood preservatives. This results in almost complete destruction of the penta, with dioxin/furan emissions comparable to that from ordinary particleboard.

Penta helps poles resist breakage and damage from the elements, minimizing the need for emergency repairs or replacements.

Penta poles can be remanufactured and reused as utility poles.

Penta poles are flexible, which helps minimize damage during ice and windstorms.

Penta's ability to resist moisture and repel water minimizes pole checking and twist, and corrosion of pole hardware.

Penta does not significantly change pole electrical conductivity, and therefore, does not require special insulators.

Penta poles resist undetected burning (afterglow) when exposed to grass or brush fires.

Penta poles are easy to install and maintain.

Penta poles are easy to handle, do not damage easily and rarely require special handling or equipment for installation or maintenance.

Their ease of use allows crews to handle more poles, more quickly, thereby increasing crew productivity.

Penta Works on Moist and Hard Woods

As an oil-borne preservative, penta penetrates all treatable wood species effectively, saving costs for Western utilities by enabling their use of local trees, such as the Douglas fir and red cedar, for utility poles. Some water-borne preservatives have difficulty effectively penetrating certain wood varieties. This forces utilities to either pay to transport poles made from wood that accepts water-borne wood preservatives, or perform labor-intensive "through boring" to ensure preservative saturation.

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