

## TRANSMISSION &amp; DISTRIBUTION

# Diffusibles – the best choice

WORKER SAFETY AND ENVIRONMENTAL STEWARDSHIP HAVE BECOME PRIORITIES FOR UTILITIES. EMERGENT TECHNOLOGIES IN REMEDIAL TREATMENT FOR WOOD POLES ADDRESS THESE CRUCIAL ISSUES.

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ONE OF THE most intriguing issues that wood utility pole plant managers face today is whether or not to stick with the old fumigant technology. This technology dates back to the 1940s and has long been the method of treating utility poles against internal decay. Lowering fumigants' toxicity often lowers their efficacy, and scientists maintain that even after such treatments, they still present a high risk of toxic exposure to the applicator.

While diffusible products were being developed, it became clear that the need for a co-biocide in the formulation was essential. This led scientists and researchers within the wood preservative community to develop a borate-based preservative that included a small amount of copper as a co-biocide. At first, utilities were concerned with copper and its toxicity to aquatic life. However, evidence has shown that the copper, which is non-metallic in form, chelates (fixes) to the wood cell and does not leach into the water. Secondly, the copper is only a small percentage of the co-biocide. Despite its low volume, the copper adds tremendous synergistic efficacy to the preservative in terms of biocidal properties and treatment life.

Scientists discovered that this co-biocide relationship between copper and boron had a uniquely synergistic response to fungal control. Fungi that are tolerant of boron are intolerant to copper, and fungi that are tolerant of copper are intolerant to boron (see Figure 1). In simple terms, fusing copper and boron together protects wood against soft rot, brown rot, white rot, insects and mould — no other diffusible or fumigant can make this claim.

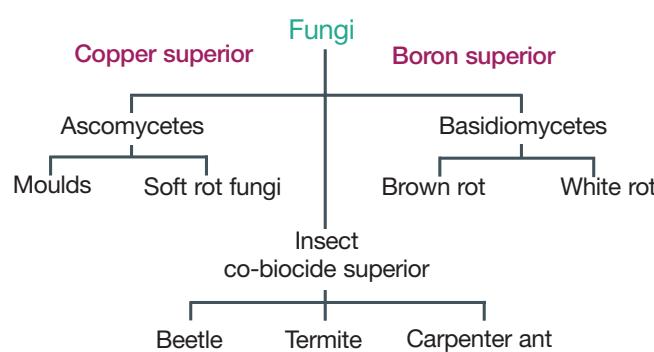


Figure 1. Fungi tolerances.

## Diffusible is best

Utilities can achieve substantial economic benefits by implementing a wood pole inspection and re-treatment programme that uses new preservation technologies. By using a combination of internal and external preservatives to arrest or prevent decay and insect attack, financially prudent utilities can extend pole life indefinitely.

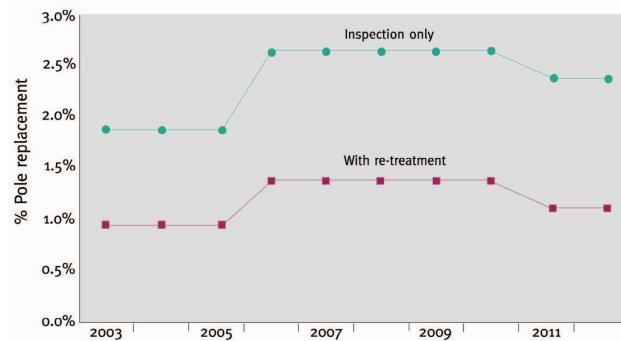


Figure 2. Impact of pole re-treatment on an average North American utility.

Many utilities throughout North America are already adopting a minimum ten-year inspection and re-treatment cycle to field assess wood and maintain pole strength. This aggressive strategy is an ideal means of lowering pole-replacement rates. Those that adopted maintenance programmes decades ago, for example, are now enjoying pole replacement costs that are only 30–60 per cent of those of their neighbours.

Additional benefits derived from diffusible technology are:

- ➲ A time-released chemical dose when required
- ➲ An auditable programme, as pre-calibrated quantities of product are prescribed for re-treatment
- ➲ A dramatic reduction of contaminating spills into the environment
- ➲ Increased worker safety and a tremendous reduction in utility liability
- ➲ It remains in the pole longer than traditional products

Today, decisions to adopt maintenance programmes are aided by computer-initiated economic analysis tools developed by industry experts.