



BIOTRANS

"POLE SLEEVES SAVE MONEY AND CONSERVE FORESTS"

H4 POLES FOR SERVICE IN GROUND CONTACT ARE RARELY GUARANTEED BY POLE TREATERS

Barrier Protection System using advanced materials technology for preserved wooden poles. US Patents: US5,733,613; US5,725,921; RSA Patent: ZA05/05105

Biotrans Pole Sleeves

prevent preservative loss and prolong resistance to decay
guaranteed extended service life

BPS - Investment & Cost Saver

The patented Biotrans Pole Sleeve is a multi-layered laminate that acts as a physical and chemical barrier between preserved wood and soil. Preservative is confined to the wood and can't be removed by the soil. The typical process of gravity driven migration followed by invasive pole decay is prevented. The added benefit is when the BPS forces preservative to concentrate in the butt and thus create a "superpole." The lifespan of the pole increases while maintenance costs are drastically reduced.

Easy to Install

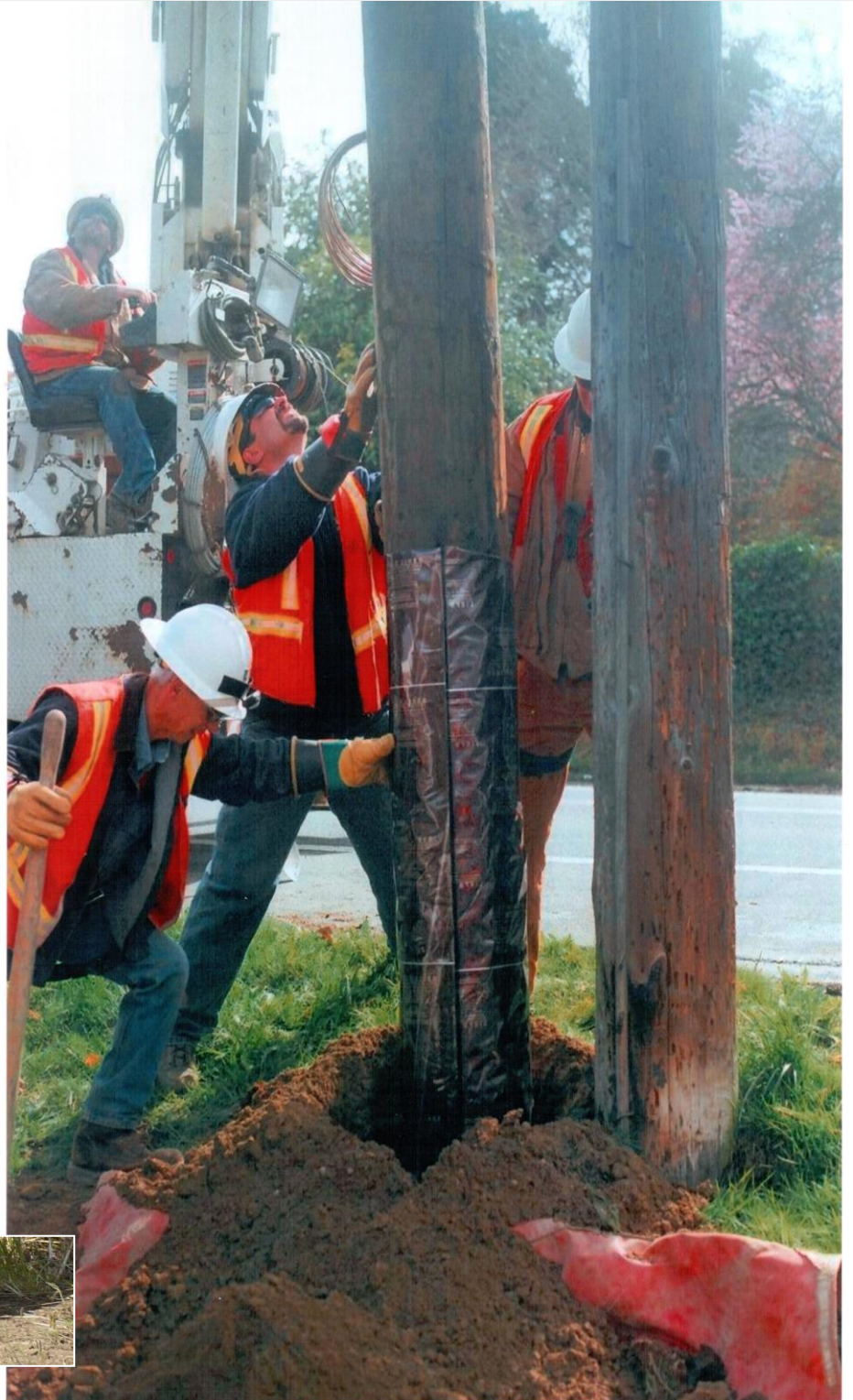
The durable Biotrans Pole Sleeve is designed to resist the rigours of installation and backfilling. It takes minutes to install in the field prior to setting the pole. Slip it on and stick it down. No special tools required.

General Application

Wooden utility poles and all other preserved poles set in soil.

Specific Applications

- Poles bearing transformers
- Poles set in concrete
- Poles set in pavement
- Poles stored over 1 year
- Relocated poles
- Reclaimed poles
- Poles in termite regions
- Boron-treated poles



AWPA P20-07 specification

BIOTRANS POLE SLEEVES ADD 40 YEARS TO THE LIVES OF H4 PRESERVATIVE-TREATED POLES



POLE TREATERS ACROSS THE WORLD RARELY GUARANTEE H4 POLES AGAINST FAILURE IN SERVICE

Wooden Poles are the Best

Wood remains the material of choice for utility poles - with economic, operational and environmental advantages compared with the alternatives. Steel, concrete and fibreglass poles cost more than wood, they are made from non-renewable resources and they contribute more greenhouse gas emissions when manufactured.

Advanced Barrier Protection Technology

Preservatives allow wood poles to deliver years of service. But oil-borne preservatives suffer from gravity driven leaching and waterborne ones may contain copper, chromium and arsenic. Public and regulator concern over their use increases daily. The impermeable Biotrans Pole Sleeve was designed to solve these problems.

Good for the Environment

- Reduce pollution
- Conserve poles
- Save money
- Gain carbon credits

Technical Specifications

Construction	flexible purpose-designed multilayered hybrid lamination	
Tensile Strength	>185lb/inch	(ASTM-D-882)
Tear Strength	> 28.1lbf	(ASTM D 1004)
Puncture Strength	>89.6lbf	(DEF STD 81-75 Annex 1)
Water Vapour Trans.	<0.0058g/100in ² /24hrs	(ASTMF-1249-06 100°F, 90%RH)
Oxygen Trans.	<0.0058cc/100in ² /24hrs	(ASTMF-1307-02)
Fungal Resistance	non-biodegradable	EN 252
Termite Resistance	impenetrable	AWPA E1-97+ASTM D3345-74

Guarantee Extended Pole Life by Preventing Preservative Depletion

- Accredited - studies with Eucalypt utility poles in Africa and Australia since 1994 and with Pine and Cedar in Europe and America since 1998 all validated the Barrier Protection System (BPS)
- Approved - in 2007 the American Wood Protection Association wrote BPS into its national Standards for poles in H4, viz., AWPA P20-07
- BPS enable approval of treated poles for environmentally sensitive areas and AWPA P20-07 permits lower preservative loadings
- BPS allow owners of pole inventories to reduce their carbon footprint
- Rugged, impermeable, inert in soil and available in all sizes
- Accumulated cost savings begin to accrue from first inspection cycle - spreadsheet calculator available on request
- Implemented by major electricity utilities



Research & Development - the Biotrans Commitment to the Environment

Biotrans - Developing Products that Conserve Forest Resources

- Innovative patented technology culminating 20 years' performance data in service since Professor Albin Baecker's first BPS invention
- The BPS prevents pole preservatives from leaching into the soil while it denies access to wood decay fungi coming from the soil
- Clean Technology - preserved wooden poles protected with the Biotrans Pole Sleeve cost less than the alternatives of fibreglass, steel and concrete and outperform them in Life Cycle Analyses
- The Biotrans Pole Sleeve addresses the environmental concerns while guaranteeing additional years of service to pole owners
- The BPS is a genuine contribution to the green economy