

CHEMONITE® CROSSTIES Protected by ACZA



The treatment of Chemonite® crossties is approved by AWP/CSA Standards and meets the requirements of AREMA. And, borates can be added for deeper protection.

Ammoniacal Copper Zinc Arsenate (ACZA) is made for heavy duty applications. The long-term protection of ACZA preservative yields a construction material that has been providing reliable service for decades – in utility poles, building poles, foundation piling, bridge girders, guardrail posts, roller coasters, marine piling, glue laminated members, cooling tower stock, and other demanding applications.

Long-term protection, plus advantageous environmental, economical, and handling features make ACZA-treated crossties an exceptional choice for railroads.

PROVEN. Development of the original copper arsenate solution began in the 1920s. The current formulation, ACZA, was accepted in the standards of the American Wood Protection Association in 1982.

More than 30 years of successful use attests to the effectiveness of ACZA-treated wood. Crossties and switchties are listed in AWP Standard U1, Commodity Specific C, as appropriate uses for ACZA treatment (Use Category UC4A at 0.40 pcf). They are also listed in CSA Use Category 4.1 at 6.4 kg/m³ (0.4 pcf). Tests have also shown that the treatment reduces flame spread.

LONG-LASTING. Chemonite® ACZA-treated wood is resistant to damage from termites and fungal decay. When used in an application for which it is intended, Chemonite wood can be expected to last for decades.

STRENGTH. The strength of crossties is not perceptibly affected by the treatment.

CORROSIVITY. Years of use under extreme conditions have revealed no structural failures due to corroded hardware. In all testing to date ACZA treatments have shown no more metal corrosion than from untreated wood. In typical rail tie installations the use of special hardware is not required. However, the end use including the design, exposure conditions, etc. should be evaluated to determine if hot dipped galvanized or stainless steel hardware should be recommended.

FASTENER HOLDING. ACZA crossties have excellent spike-holding characteristics.

CONDUCTIVITY. Tests have indicated that the metallic oxides in ACZA are no more conductive than untreated wood. Regardless of the test method used, a bigger factor than wood species or preservative is moisture, which affects all types of treated wood crossties.

GAGE-HOLDING. Douglas fir ties were installed in the High Tonnage Loop of the Transportation Technology Center's Facility for Accelerated Service Testing. These ties remained in service for more than 1,000 Million Gross Tons of freight traffic. Regaging was not necessary until approximately the 200 MGT mark.

USE & HANDLING. Handling Chemonite® crossties does not necessitate unusual safety measures beyond those recommended for most other construction materials. These include: wear gloves when handling, wear safety glasses and dust mask when drilling or sawing, and do not burn treated wood.

DISPOSAL. State and local requirements vary, but, in general, lined landfills accept retired Chemonite® crossties and scraps in accordance with the same requirements that apply to other building materials. Where questions exist, confirmation from the appropriate local authority is recommended.

ENVIRONMENT. Chemonite® crossties share the many environmental attributes of wood itself – most notably: renewable resource, low-energy production, and carbon sequestration. The preservative process adds to these benefits by extending service life, thereby reducing demands on forests and transportation of replacement material. Furthermore, ACZA bonds chemically to wood cells as insoluble precipitates, becoming very leach-resistant. The wood surface is non-oily and clean-to-the-touch, even in high temperatures or salt water.

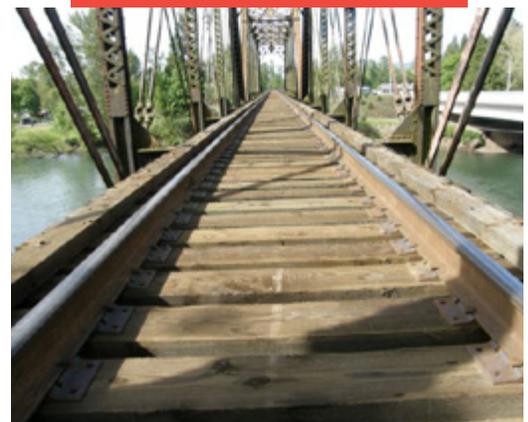
BENEFITS OF BORATE ADDITIVE. Crossties, treated with a mixture of ACZA and borates, are an option. Like ACZA, borates have a long history of effective decay prevention. They have been used for decades to protect sill plate, and have supplemented other preservatives in protecting hard-to-treat species of wood. The borates diffuse deep into these species, as confirmed by tests on hardwoods at Mississippi State University. The result is protection of inner areas that might otherwise be vulnerable to decay when exposed by cracks or wear. Borates also inhibit corrosion, enabling spikes to maintain their integrity for a longer period of time and thus hold gage longer.

WARRANTIES. Both Doug fir and hardwood varieties of Chemonite® ACZA + Boron-treated crossties are backed by limited warranties. See www.Chemonite.com for specifics.

OTHER OPTIONS. Crossties can be coated with silicone sealer (AntiBlu® H₂O Water Block) or treated with clear or brown ET® oil emulsion.

Life Cycle Assessment

A life cycle assessment performed by an independent consulting company compared ACZA-treated crossties with concrete and plastic/composite (P/C) crossties and ultimately confirmed that ACZA-treated crossties: use less energy and resources, offset fossil fuel use, and have a reduced environmental impact. See www.Chemonite.com for the report.



Contact us:

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www.Chemonite.com