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TPI/WTCA Interim Guidelines for Use of Alternative Preservative Treatments with Metal Connector Plates by WTCA Staff

With CCA in the last stages of its phase-out, it is time to make sure you understand the alternatives and how the new treatments affect your choice in connectors.

As of December 31, 2003, chromated copper arsenate (CCA) preservative treated products are quickly becoming unavailable for use in truss applications and are already difficult to obtain in some regions. There are numerous alternative replacement products available. Our industry's guidelines on preservative treatment and metal connector plates are as follows. Always check with your preservative treatment supplier for acceptability of a preservative for your application.

- Most chemical formulators have recommended that when preservative treated lumber is required in truss applications, sodium borate or iodine based preservative treatments be used along with the typical G60 galvanized (0.60 oz zinc per sq. ft. of sheet steel, per ASTM A653) metal connector plates that are in general use today for interior applications. Typical sodium borate based preservative treatments are inappropriate for exterior wet-service applications (e.g. exposure to wetting/drying). At this time in order to use typical G60 metal connector plates, only sodium borate or iodine based preservatives are recommended. If another preservative is specified for use with trusses, it may be preferable, where possible, to request a change in the preservative treatment specification.
- If you are required to use any of the new copper based preservative treatments, then the chemical formulators suggest that the best practice is to use G185 galvanized (1.85 oz zinc per sq. ft. steel sheet per ASTM A653), post-manufacture hot dip galvanized per ASTM A153, or stainless steel connector plates.
- It is recommended that component manufacturers send out the preservative treatment material safety data sheets (MSDS) along with every preservative treated structural component product shipment.
- As project specifications may require the use of a specific preservative treatment, the component manufacturer should consult its customer and project design professionals for a review and approval of any preservative treatment substitution.
- Tables 1-3 below provide a quick guide to recommended metal connector plate use with the various preservative treatments.

Once you know that the project you are working on will involve the use of preservative treated lumber, and prior to bidding the job, contact your truss engineer and/or metal connector plate supplier and inform him/her of the truss application and treatment being used. This consultation will allow your engineer and/or metal connector plate supplier to determine the design criteria and connector plate type under which a truss design can be prepared. All steel components, not just the metal connector plate, that come in contact with the treated wood, need the same consideration. This includes any and all fasteners and construction hardware.

In addition to the above guidelines based on corrosion resistance, truss exposures should not result in repetitive wetting and drying, like with long periods of exterior exposure. Such exposures result in metal connector plates backing out of lumber due to an excessive amount of wood swelling and shrinkage. If specifications require a copper based preservative for exterior use or an exterior FRT, it should be verified that the metal connector plates will be used in a dry exposure to avoid plate back-out.

Preservative Types	Popular Brand Names	Metal Connector Plate
Sodium Borate Based Preservatives	<p>Advance Guard® • www.osmose.com Osmose, Inc. • 800/241-0240</p> <p>EnviroSafe Plus™ • www.eswoodtreatment.com Wood Treatment Products, Inc. • 800/207-2940</p> <p>Envirotech WP • www.envirotech-wp.com/about.htm Envirotech Ventures International, Inc. • 208/265-5911</p> <p>SillBor® and FrameGuard™ • www.wolmanizedwood.com/sillbor.htm Arch Wood Protection, Inc. • 770/801-6600</p> <p>TimberSaver PT® • www.treatedwood.com/products/timbersaver/ CSI • 800/421-8661</p>	G60 Galvanized Steel (typical metal connector plated used today)
Iodine Based Preservative	EcoTreat™ • www.ecotreatinc.com EcoTreat, Inc. • 864-527-0497	G60 Galvanized Steel

Table 1. Sodium Borate or Iodine Based Preservatives.

Preservative Types	Popular Brand Names	Metal Connector Plate

<p>Sodium Borate Based Fire Retardants and Preservatives</p>	<p>Notes: All FRTs require strength reduction considerations in design. Most FRTs are not appropriate for wet conditions. Two FRTs below are formulated for exterior use and may be acceptable for interior applications where higher humidity/moisture content exists than is appropriate for the other FRTs, but these exterior treatments may not have been tested with elevated temperatures, as specified by TPI 1-2002 sec. 6.4.9.1.1, so their use in roof applications should be excluded unless such consideration of elevated temperatures is provided. In addition, conditions wet enough to require exterior FRTs may be inappropriate for use of truss plates (see last paragraph of these guidelines).</p> <p>D-Blaze® • www.treatedwood.com/products/dblaze/ CSI • 800/421-8661</p> <p>Dricon® & FRX® (exterior) • www.dricon.com & www.frxwood.com Arch Wood Protection, Inc. • 770/801-6600</p> <p>Fire-Pro® • www.osmose.com/wood/usa/retardant/overview/ Osmoster, Inc. • 800/241-0240</p> <p>Pyro-Guard® & Exterior Fire-X® (exterior) www.frtw.com/products/retardants/pg.html Hoover Treated Wood Products • 706/595-5058</p>	<p>G60 Galvanized Steel (typical metal connector plated used today)</p>
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Table 2. Sodium Borate Based Fire Retardants That Are Also Preservatives.

Preservative Types	Popular Brand Names	Metal Connector Plate

<p>Alkaline Copper Quat (ACQ)</p>	<p>Nature Wood® or Nature Wood® with water repellent www.osmose.com/wood/usa/preserved/naturewood/product/ Osmose, Inc. • 800/241-0240</p> <p>Preserve® or Preserve Plus® (built-in water repellent) www.treatedwood.com/products/preserve/ or/preserveplus/ CSI • 800/421-8661</p>	<p>G185 or ASTM A153 Galvanized or Stainless Steel</p>
<p>Copper Azole (CBA-A) Copper Azole (CA-B)</p>	<p>Wolmanized® Natural Select™ • www.wolmanizedwood.com Arch Wood Protection, Inc. • 770/801-6600</p> <p>Wolmanized® Natural Select™ with water repellent www.wolmanizedwood.com/ Arch Wood Protection, Inc. • 770/801-6600</p>	<p>G185 or ASTM A153 Galvanized or Stainless Steel</p>
<p>Table 3. Copper Based Preservatives.</p>		

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