

Metal products in contact with pressure-treated wood must be corrosion resistant. Examples include fasteners (e.g. nails, screws, and bolts), and all connecting hardware (e.g. joist hangers, straps, hinges, post anchors, and truss plates).

One selection criteria for fasteners and connectors should be the potential for corrosion in a particular building application. The 2003 International Residential Code, Section R319.3 states, "Fasteners for pressure-preservative treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper. Exception: One-half inch (12.7mm) diameter or greater steel bolts."

Traditionally, the treated wood industry has recommended hot-dip galvanized or stainless steel fasteners and connectors for treated wood products. Hot-dip galvanized or stainless steel fasteners and connectors continue to be recommended for use with today's modern wood preservatives (e.g. Alkaline Copper Quat - ACQ, and Copper Azole), but additional clarification is needed to ensure adequate corrosion protection.

Generally, hot-dip galvanized fasteners and connectors are suitable for above-grade outdoor applications. Hot-dip galvanized *fasteners* should meet ASTM A153. Hot-dip galvanized *connectors* should meet ASTM A653, Class G185 sheet with 1.85 ounces of zinc coating per square foot minimum. Fasteners and connectors used together must be of the same metallic composition to avoid galvanic corrosion (e.g. use hot-dip nails with hot-dip joist hangers).

Type 304 or 316 stainless steel is recommended for maximum corrosion resistance in more severe exterior applications, such as swimming pools and salt-water exposure. Stainless steel fasteners are generally required for below-grade applications such as Permanent Wood Foundations. Stainless steel is also a recommended option for use with ACQ or Copper Azole treated wood at retention levels greater than required for Ground Contact.

Do not use standard carbon-steel or aluminum products in direct contact with pressure-treated wood. In addition, electroplated galvanized metal products generally have a thinner layer of protection compared to hot-dip galvanized and are typically not accepted by the building codes for use in exterior applications. Spacers or



other physical barriers are necessary to prevent direct contact with treated wood when aluminum or electroplated products are used, such as flashing or termite shields. Such barriers should provide complete separation and remain intact for the intended service life of the metal.

Fasteners and connectors coated with proprietary anti-corrosion technologies are also available for use with treated wood. Consult individual hardware manufacturers for specifics regarding the performance of their products with treated wood.

Additional Information:

- Arch Treatment Technologies
www.wolmanizedwood.com
- ASTM International
www.astm.org
- Chemical Specialties Incorporated
www.treatedwood.com
- International Code Council
www.iccsafe.org
- ISANTA (Int'l Staple, Nail & Tool Assn.)
www.isanta.org
- Osmose Incorporated
www.osmose.com
- Simpson Strong-Tie Company
www.strongtie.com
- United Steel Products Company
www.uspconnectors.com

This advisory provides a summary of recommendations from a variety of sources. The Southern Pine Council (SPC) does not guarantee the performance of products used in conformance with these recommendations, and does not endorse any type of wood preservative, fastener or connector. The SPC neither attests to the validity of methodologies used to conduct corrosion tests nor to the validity of the test conclusions upon which these recommendations are based.