

## **TECHNICAL BULLETIN**

## The ProWood Micro Advantage - Fasteners

In conversations with our customers and the users of our ACQ treated wood products, we are aware of ongoing concerns about fastener corrosion and a desire for a product that interacts with fasteners in a similar manner to CCA. We are now proud to offer that product: ProWood Micro.

Both professional builders and the do-it-yourselfers used CCA<sup>1</sup> treated wood with hot-dipped galvanized (HDG) fasteners for decades. While some critical applications required the use of stainless steel fasteners, HDG performed well in most applications with CCA treated wood. Several years ago CCA products were largely replaced with new copper-based treated wood products<sup>2</sup>. The new products provide the same protection for outdoor wood projects but tests showed slightly higher corrosion rates on unprotected steel. While unprotected steel fasteners are not appropriate for any outdoor project, many felt that the higher corrosion rate meant higher levels of protection were needed for fasteners to be used with the new wood products. For example, the thickness of the zinc coating that provides protection in a hot-dipped galvanized fastener was increased by two or three times by several fastener manufacturers.

Today, fasteners recommended for use with ACQ are widely available. Use of these fasteners ensures that outdoor projects constructed with ACQ will perform well for decades. However, some users continue to be concerned about the slightly higher corrosion rate associated with the new copper-based treated wood products.

ProWood Micro<sup>3</sup> changes all of that. ProWood Micro is a revolutionary new type of treated wood. Although it has the same basic active ingredients as ACQ providing protection to the wood, ProWood Micro has corrosion rates similar to CCA. The following graph<sup>4</sup> shows that when tested on unprotected steel (1010 steel), the corrosion rates for ProWood Micro fall between CCA and untreated wood!

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<sup>&</sup>lt;sup>1</sup> CCA is Chromated Copper Arsenate.

<sup>&</sup>lt;sup>2</sup> The new copper-based products are ACQ (Alkaline Copper Quaternary) and CA (Copper Azole).

<sup>&</sup>lt;sup>3</sup> ProWood Micro is Micronized Copper Quaternary.

<sup>&</sup>lt;sup>4</sup> Testing conducted by major U.S. university in accordance with American Wood-Preservers' Association Standard E12, "Standard Method of Determining Corrosion of Metal in Contact with Treated Wood.

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Based on this data as well as our extensive evaluation of the technology behind ProWood Micro, our fastener recommendations for ProWood Micro are the same as for CCA: <u>use hot-dipped galvanized</u> <u>or other fasteners as required by local building codes.</u>

Various fastener and connector manufacturers are currently evaluating this new product. We expect to hear their recommendations over the next several months. While these manufacturers will need to draw their own conclusions about the type of fastener to recommend with ProWood Micro, our conclusion is clear: ProWood Micro has corrosion rates on mild, unprotected steel similar to untreated and CCA treated wood.

As excited as we are to offer ProWood Micro we do not want to create the impression that any of these treated wood products, including ProWood ACQ, are highly corrosive. While the corrosion rate for ACQ on unprotected steel is certainly higher than CCA it still is relatively non-corrosive. This point is reinforced by the fact that unprotected fasteners are not suitable for outdoor projects where they are buried in the ground or exposed to the elements; exactly the types of ways one uses treated wood products. For years, hot-dipped galvanized fasteners have been an effective alternative to stainless steel fasteners in most applications. If we look at the results for the hot-dipped galvanized metal coupons in the same test, we can see that the corrosion rate is quite low for ProWood ACQ with ProWood Micro being similar to untreated and CCA treated wood.



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Tests demonstrating the corrosion advantages of ProWood Micro are ongoing. Look for future updates from the Wood Preservation Department and on UFPI.com.



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