

## Magni 599 Coating for Construction Fasteners Competitive Comparison

### Overview & Industry Activity

Magni 599-coated fasteners have been successfully used on construction fasteners of many types for several years. The most common uses for Magni 599 have historically been wood decking screws, nails and brackets.

In January 2004, the wood treating industry made a voluntary switch from CCA chemical treatments to newer treatments such as ACQ, Copper Azole and others. The new pressure-treating chemistries, depending on concentration and consistency, could cause corrosion of steel fasteners at a faster rate. This caused many fastener companies to reevaluate the types of protective coatings used for their fasteners. This report summarizes corrosion test results of Magni 599 compared to other finish types available in the market.

### Magni 599 compared to E-coat

Photo 1 (see below) shows Magni 599-coated screws fastened into ACQ-treated lumber. These boards were exposed to ASTM B117 salt spray testing test for 936 hrs. There is minimal corrosion on Magni coated samples. Photo 2 shows e-coated samples at the same time during the testing. The e-coated samples show severe red corrosion.



Photo 1



Photo 2

Magni 599 compared to E-coat (cont.)

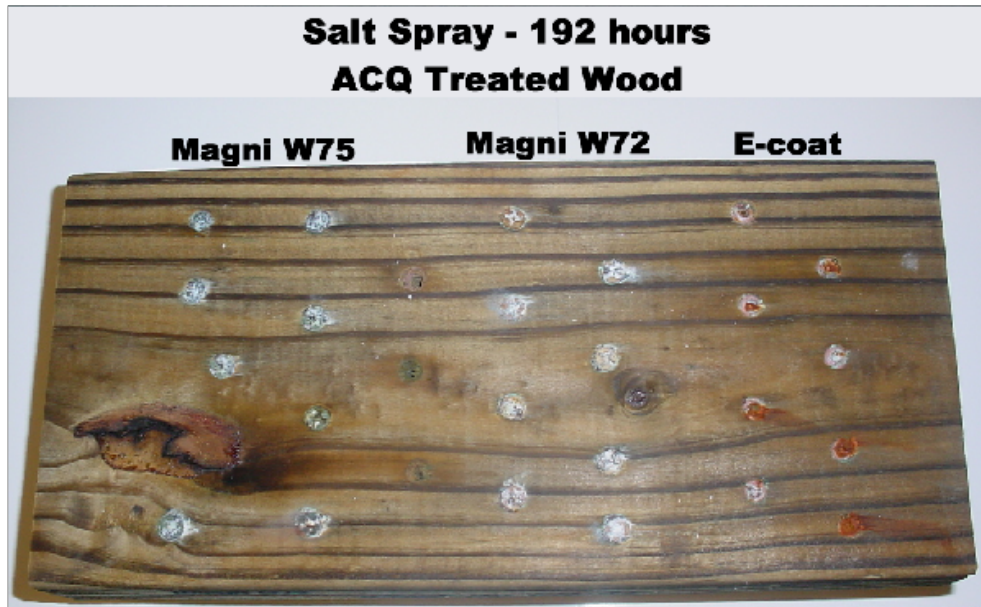


Photo 2 showed e-coated fasteners with severe corrosion at 936 hours. The onset of corrosion usually begins much earlier. Photo 3 (left) shows an ACQ-treated board after 192 hours exposure per ASTM B117 salt spray. The red corrosion of the e-coated fasteners is already well underway. The Magni fasteners are still free of red rust.

Photo 3

***Durability Comparison***

One of the defining characteristics of the Magni 599 coating system is its exceptional durability. Most other finishes are easily removed during installation.

Our own internal standard for the development and qualification of Magni 599 was for the coating to survive 10 installation cycles in and out of wood without substantial coating loss.

Photo 4 (right) shows Magni 599 tan and green after 10 installation cycles. E-coat is a particularly fragile coating and it comes off quickly after installation into wood.



Photo 4

**Magni 599 compared to hot dip galvanizing**

The International Code Council has adopted acceptance criteria for coated fasteners used by the building industry. The ICC-ES AC257 test method establishes requirements for evaluating the corrosion resistance of fasteners used in many types of building and construction applications.

The AC257 method identifies hot dip galvanizing per ASTM A153, Class D as the benchmark finish to which all other coatings shall be compared for approval. Magni 599 compares very favorably to hot dip galvanizing.



Photo 5

Photo 5 shows Magni 599-coated fasteners after removal from treated lumber per the ICC-ES AC 257 testing criteria. Magni 599 shows very little coating loss after over 1500 hours salt spray exposure with no effect on the base metal. The middle fasteners are hot dip galvanized and these fasteners are beginning to show base metal pitting.

The photos at right show a comparison of hot dip galvanized nails and Magni 599-coated nails. This test exposed coated nails driven into ACQ to continuous water fog @ 120°F. Magni 599 survives the “sandwich” test with little cosmetic corrosion and no base metal degradation while the hot dip galvanized nails’ base steel substrate is severely rusted.

Photo 6 – Hot Dip Galvanized Nails



HDG after 180 hrs.



HDG after 644 hrs.



HDG after 380 hrs.



HDG after 830 hrs.

Photo 7 – Magni 599 Nails



Magni 599 after 188 hrs.



Magni 599 after 644 hrs.



Magni 599 after 380 hrs.



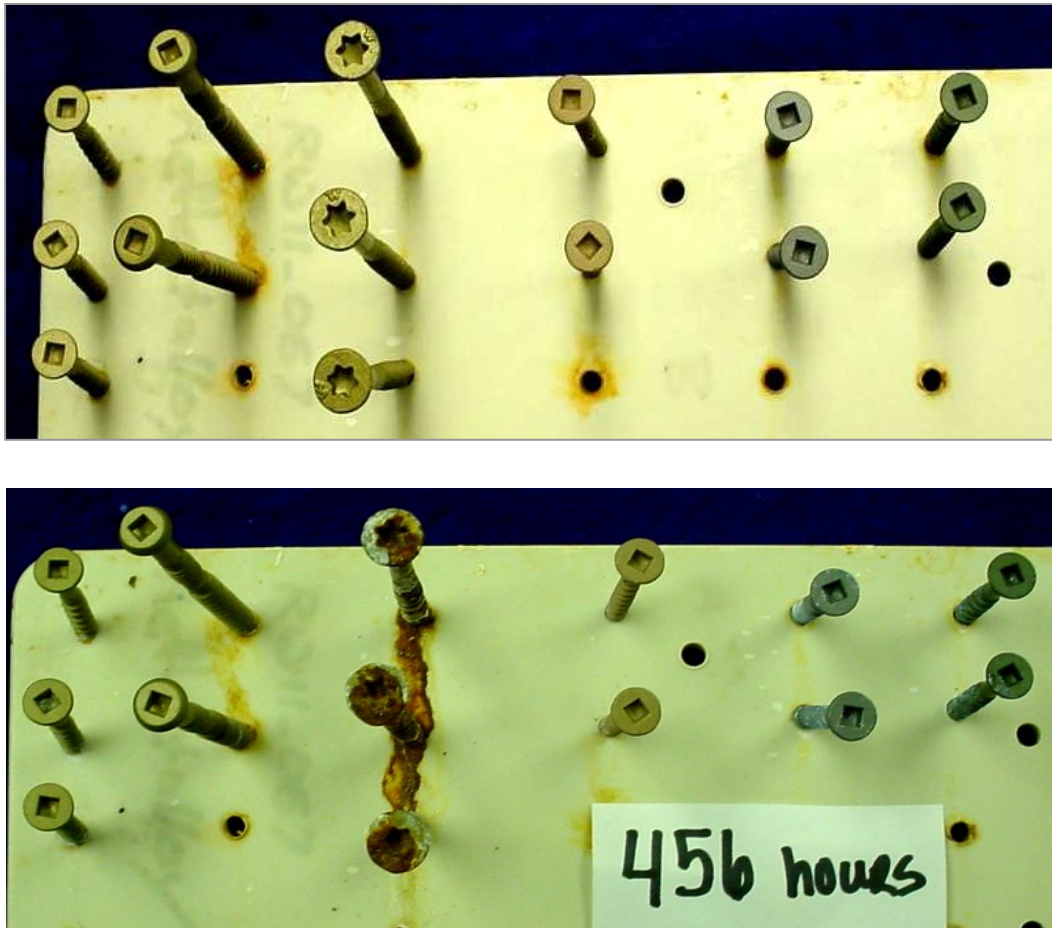
Magni 599 after 830 hrs.

**Magni 599 compared to other coatings**

Many coatings in the market look like Magni 599 and claim to perform like Magni 599. Our testing consistently shows Magni 599's superiority to competitive or "look-alike" coatings.

Photo 8 below shows ASTM B117 salt spray testing of several Magni 599 colors. The fasteners in the third row from the left are coated with a Magni look-alike from an import source. The top photo shows the parts prior to the beginning of the salt spray exposure. The bottom photo shows the parts after 456 hours of exposure. This is an example of what we see on a consistent basis from the Magni 599 imitators.

Photo 8



Please contact Magni for more information about Magni 599 or any of our other outstanding corrosion protective coating systems.

Magni 599 is available from metal finishers in North America, South America, Europe and Asia. Please visit [www.themagnigroup.com](http://www.themagnigroup.com) for specific locations and contact information.