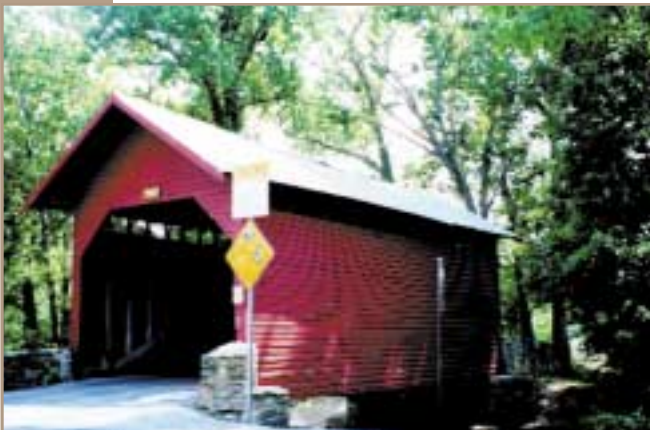


Historical Roddy Road Covered Bridge Receives a Much Needed Restoration

Originally constructed in 1856, the Roddy Road Covered Bridge in Frederick County is one of only three remaining covered bridges in the state of Maryland. Spanning 40 feet, with a width of 16 feet and a 12-foot, eight-inch clearance, the bridge has seen numerous restorations. At least 52 similar structures once existed in Maryland, but weather, neglect, and progress have since claimed them.



Triumphantly, the Roddy bridge stands, recognized by the National Register of Historic Structures.

Dean Fitzgerald, owner of Heavy Timber Construction, was instrumental in the bridge's repair efforts. "Having grown up around the Roddy bridge, it's close to my heart. Also, restoration of timber frames is part of what

Heavy Timber Construction does," said Fitzgerald. After organizing local residents to volunteer in the restoration, Fitzgerald's company donated many of the materials for restoration and contacted other companies who also made contributions.

The restoration began with replacing the wooded deck stringers with bare steel to strengthen the structure and increase load capacity. In 1979-1980, the bare steel was again replaced because the stringers had completely corroded.

Damaged in 1992 by an oversized truck attempting to drive over the bridge, it was closed to traffic. Since the Roddy bridge has tremendous tourist and historic value, the closure created great concern in the surrounding community.

Fitzgerald then petitioned Frederick County Highways to repair the damage to the structure and Heavy Timber Construction proceeded to replace all four corners of the bridge.

After two days of additional volunteer repair in 1992, the bridge was reopened to traffic. Later, in 1993, the bridge was repainted to original historical standards.

Continued on page 2

In this Issue:

Roddy Road Covered Bridge Receives a Much Needed Restoration

Page 2

Dr. Galv discusses permanently immersed structures involving hot dip galvanizing

Page 3

The 1999 Excellence in Hot Dip Galvanizing Award winners take center stage

Insert

Historical Roddy Bridge

During the 1979-1980 rehabilitation, the four corner posts of the bridge were encased in concrete when wing walls were added to the abutments. This resulted in moisture remaining trapped at the base of the posts and the ends of the bottom cords, causing the wood to rot.

Local volunteers who had been making repairs began to pressure Frederick County Highways in 1993 to upgrade the corners of the structure to prevent further decay and to replace the badly corroding steel stringers.

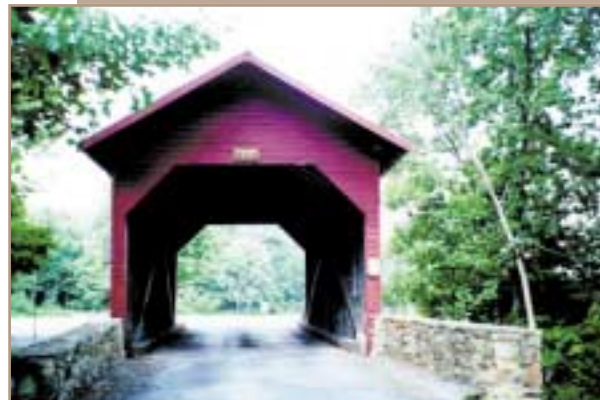
Finally in 1995, hot dip galvanized steel allowed the historic Roddy bridge landmark to remain a functioning part of the local infrastructure. Frederick County decided that hot dip galvanizing was the best solution for restoring the bridge. Galvan Industries, Inc. of Harrisburg, N.C. was the galvanizer used for this restoration. David Prior of Galvan

beams were galvanized overnight and transported back to Maryland. Heavy Timber Construction then installed the galvanized steel without any problems.

The posts encased in concrete, mentioned earlier, were repaired to eliminate rotted material and the relatively new (1980) wing walls were cut back to allow for air circulation and drainage around the base. The bare steel stringers replaced in the 1979-1980 rehab were again replaced in 1995 with hot dip galvanized stringers and diaphragms.

The original aesthetic appearance of Roddy bridge was maintained, while adding new life to the

States. Thanks to hot dip galvanizing, the historical Roddy bridge will last for decades to come.



Industries, Inc. said that this was a straightforward, traditional galvanizing project. In fact, the 40-foot

bridge. Unfortunately, wooden bridges continue to decrease in number throughout the United

Hot Dip Galvanizing for Permanently Immersed Structures

Dear Dr. Galv: Is it true that hot dip galvanizing should not be recommended for use where a structure is to be permanently immersed?

The life of a galvanized coating in immersed conditions will depend on the corrosive properties of the liquid and the thickness of the galvanized coating applied to the structure. Galvanizing's corrosion resistance in water also depends on its ability to form a protective layer by reacting with its environment.

In water, a protective film or scale is formed and reduces oxygen's access to the zinc surface and slows the attack on the coating. Galvanizing's ability to form a protective scale depends on three factors: the dissolved oxygen, calcium content, and water alkalinity. These factors determine the rate at which the zinc coating provides protection.

Extensive information has been published regarding the suitability of galvanizing for water reticulation and storage systems required for both natural and potable waters. A reasonably accurate prediction of anticipated life can be provided if a chem-

ical analysis of water is obtained. Of considerable importance are the pH level and the scale-forming properties of the water (calcium hardness). Soft waters are more aggressive towards zinc because corrosive substances such as chlorides are far more pronounced in soft waters than in hard, scale-forming waters.

A hot dip galvanized coating will normally provide at least 10 years maintenance-free life if totally immersed in sea water. This is because the magnesium chloride present in sea water acts as an inhibitor to prevent aggressive attack by sodium chloride. Of course this does not apply to galvanized coatings situated in the spray zone where severe attack normally occurs.

Hot dip galvanizing provides

durable protection for numerous immersed applications. In fact, hot dip galvanizing can be used effectively for protecting large diesel and petrol storage tanks. Bee keepers frequently use galvanized cans for storing harvested honey and in the fish canning industry, galvanized scows (bins) are used to store fish prior to processing.

For further information or if you have questions on hot dip galvanized structures immersed in water, call the American Galvanizers Association at 800.HOT.SPEC. (800.468.7732).



1999 Excellence in Hot Dip Galvanizing Awards Artistic Winner (see insert for more details)