



WOOD EPOXY MAIN STREET IOWA TECHNOTES

When dealing with historic buildings, often times wood in many areas has deteriorated over the years. At first glance, total replacement of rotted wood seems to be the only logical solution. Replacement of these wood members can be very expensive and labor intensive.

However, other options exist. Using wood epoxies when completing an historic renovation allows you to retain more original historic fabric. Not only does this typically save money, it also is a good preservation practice.

Wood epoxy technology offers an alternative solution to entire replacement of deteriorated wood. Epoxies are far different than the water based wood fillers of years past. Contemporary epoxies do not shrink and are actually superior structurally to the wood itself. The finished epoxy repair can be sanded, drilled, sawed, shaped and molded as needed to make a repair virtually invisible. While more difficult to match, most epoxy systems can also be stained to approximate the appearance of natural wood.

Most current epoxy systems utilize a two step process. The first is a consolidant that actually penetrates deteriorated wood and stops further rot and deterioration. The second step is the actual wood replacement compound.

A note about safety; as with any chemical compounds, be certain to

read and follow all label directions. Use epoxies only in well ventilated areas. The chemical reaction which causes the epoxies to work also generates a large amount of heat, especially when the epoxy is confined in a small container on a very warm day. Always wear protective gloves, DO NOT allow epoxies to come in direct contact with your skin. Safety goggles should be worn at all times as well.



As with most repair and maintenance projects, surface preparation is the most critical and time consuming portion of the process. In order for the epoxy materials to bond sufficiently, the area should be clean of any grease, oil, wax or paints. All dirt and loose materials must also be removed. Soft, but intact deteriorated wood can be left in place; it will be consolidated with the first step of the process.

The consolidated material is a clear syrup like substance. It can be brushed on the surface or poured directly onto areas. In order to get the material deep into the wood, utilize gravity and the grain of the wood. Drill small pilot holes above the areas of deterioration across the grain. Then inject the consolidant into the holes allowing it to run down along the grain of the wood until the wood is saturated. A large veterinarian's syringe or even plastic ketchup bottles work well for this application. After about three hours, the material will harden as the consolidant bonds with the wood.

Once the wood has consolidated, the wood replacement compound can be installed. This also is a two part compound of a resin and hardener. These two components must be thoroughly mixed to activate the process. The material becomes a soft clay like putty that can be used to rebuild missing shapes and voids. The putty can be molded into virtually any needed shape to recreate any type of architectural detail.

The epoxy system is very flexible and adaptable. For structural repairs fiberglass reinforcing rods can be added. Also to help conserve expensive materials wood "filler blocks" can be used for large areas that are to be rebuilt. Sawdust or tints can be added for repairs that need to be stained.

By using epoxies it is very feasible to turn wood that is normally considered trash back into a useful component of an historic building. It also can prevent unnecessary total replacement of wood elements that can result in a more cost effective and historically appropriate renovation project.

Epoxy System Suppliers:

Abatron, Inc., 5501 95th Avenue, Kenosha, WI 53144, 414-653-2000

West Systems, Gougeon Brothers, PO Box 908, Bay City, MI 48707, 517-684-1374

Conserv Epoxies, 7 Goodale Road, Newton, NJ 07860, 973-579-1112

For More Information:

*Design Consultant, Main Street Iowa
Iowa Dept of Economic Development
200 East Grand, Des Moines, IA 50309
515-242-4762
515-242-4792*