



PRESERVE WISE

Exploring the environmental benefits in using preserved wood products

Sustainability of preserved wood products

Over the past 50 years, the world has become more cognizant of the environmental impacts of the materials we use as part of our modern civilization. This realization continues to influence choices in meeting our basic needs.

The choice in building materials for both structures and infrastructure is increasingly driven by environmental and sustainability considerations. Too often, these choices are based on incomplete information or erroneous assumptions not supported by science.

When the facts are reviewed over the entire life cycle, wood emerges as the clear choice which provides numerous environmental benefits. Wood's sustainability is further enhanced if it is preservative treated for demanding exterior or wet applications.

After stone, wood is the oldest material used for construction. We have many centuries of experience in converting forest resources into building materials and renewing those forests to supply future needs into perpetuity.

Trees grow naturally by converting carbon from the atmosphere into wood fiber. When these trees are converted into wood products, they lock that carbon in place for the life of the structure. New trees can then be grown to continue the cycle and become a resource for future materials.

Extending the life of wood

In nature, trees grow, die and then deteriorate into organic matter to start the cycle over. While turning a tree into a product interrupts this cycle, organisms such as decay fungi and insects continue to seek and break down the wood fiber, no matter where it is used.

One of the unique qualities of wood is its ability to maintain a protective layer that forestalls deterioration. This is done by integrating preservatives into the wood fiber through pressure. The pressure treating process utilizes safe chemicals that offer passive protection against fungal and insect attack when the wood is used in conditions where the risk of deterioration is high.

Preserving the wood extends its useful life from a few years to many decades. Not only does this sequester the carbon, it provides enough time for another tree to be grown to become a replacement product.

In the century since commercial pressure treating was introduced, the wood preserving industry has compiled an impressive record of longevity for preserved wood. Many utilities have preserved wood poles in their overhead systems that continue in service after more than 80 years. Bridges constructed of preserved wood can last 75 years or longer.

Residential wood decks made with preserved wood often last for multiple decades, often replaced due to changing design tastes rather than issues with deterioration. The use of preserved wood posts and rails can extend the life of fences to more than 20 years compared to just a few years if left untreated.



continued on Page 2

Wood structures built on preserved wood sill plates can have a functional service life of more than 50 years. A review of building demolitions shows that some 63 percent of wood buildings were older than 50 years, with the largest group of those falling into an age class of 76 to 100 years.

By comparison, only one-third of concrete buildings lasted more than 50 years while some 80 percent of steel buildings fell below 50 years in service, with half of those less than 25 years in service.

Carbon benefits

There is growing recognition of the benefits from removing the carbon we release into the environment. One of the best ways to remove and store that carbon is through responsible forestry and the continuing use of wood in products.

Preserving wood through treating holds carbon in place for far longer. Given the large volumes of wood used not only in construction but in infrastructure applications, preserved wood products sequester significant amounts of carbon that have been drawn from the atmosphere.

There are some 130 million preservative-treated wood utility poles and 100 million wood crossarms in service today. Together, they account for an estimated 90 million metric tonnes of carbon dioxide, or CO², removed from the environment. That volume is equivalent to the CO² emissions from burning 10.2 billion gallons of gasoline.

Other infrastructure uses contribute to sequestering carbon as well. For example, there are some 300 million wood railway ties in service which sequester approximately 32 million metric tonnes of CO² -- equal to emissions from burning 177,000 railcars of coal.

Even closer to home, the wood in a typical house accounts for some 38,500 pounds of CO² stored, or the rough equivalent of removing 10 cars off the road for a year.

Forest renewability

One widely accepted practice to offset our carbon footprint is to plant trees. For more than a century, the forest products industry has done just that, ensuring that our forests can continue to provide wood for products while balancing other needs such as water, wildlife and recreation.

Each year, more than 1 billion trees are replanted in the U.S. and Canada replants an estimated 600 million trees annually. As a result of these actions, the amount of forestland in North America has remained stable for more than a century. This responsible forest management has resulted in more than 50 consecutive years of net forest growth that exceeds forest harvests.

Extending the service life of wood through pressure treating helps lengthen the cycle of harvesting and replanting. It is not uncommon to find preserved wood products in place for 50 years or more. Over this time, new trees can be grown to a size large enough to be converted into a new wood product that can replace preserved wood once it comes to the end of its service life.

Ensuring a sustainable future

The future of our environment depends on making wise, responsible choices. When it comes to materials for structures and infrastructure, selecting preserved wood products offers significant benefits that can lead to a sustainable future.

Integrating safe and effective preservatives into wood forestalls the natural deterioration of wood, allowing it to remain in service for an extended time. Preserved wood locks carbon in place for the time needed to grow a new tree to become a resource for a replacement product once the wood is at the end of its product life.

No other material offers the durability, renewability and sustainability benefits found in preserved wood products.

