
Mechanical and Chemical Properties of CCA-Treated Lumber Removed from Spent Residential Decks

Robert L. Smith, Dave Bailey, and Philip A. Araman

Abstract

The amount of chromated copper arsenate (CCA)-treated wood being removed from spent residential decks is increasing at a tremendous rate. While most spent CCA-treated wood is being disposed in landfills, further useful and environmentally beneficial alternatives have to be met. If the volume of CCA-treated wood reaching landfills continues to rise, stricter disposal regulations and thus higher disposal cost may soon follow. This research estimated the percentage of recoverable lumber from spent CCA decks that can be recycled into other usable products. Six residential decks were removed from service, by either demolition or deconstruction procedures. It was found that 86 percent of the CCA-treated wood from the residential decks could be recovered as reusable CCA-treated lumber. It was also found that de-

construction of a residential deck, rather than demolition, was not a factor in the volume of CCA-treated wood recovered. The joists and decking were the most successful material recovered, at 95 percent and 93 percent, respectively. Chemical and mechanical properties of the removed CCA-treated wood were also analyzed. The chemical retention of the deck material, through chemical assay, proved that most of the spent CCA-treated wood could be used in aboveground applications. The stiffness of spent CCA-treated wood from residential decks was approximately equal to that of recently treated CCA wood. The strength properties were slightly lower than recently treated-CCA wood, probably due mainly to physical and climatic degradation.

Smith:

Professor and Extension Specialist, Department of Wood Science & Forest Products, Virginia Tech, Blacksburg, Virginia, USA

Bailey:

Project Manager, Pallet One, Barto, Florida, USA

Araman:

Project Leader, Southern Research Station, USDA Forest Service, Blacksburg, Virginia, USA

Wood Protection 2006

Edited by H. Michael Barnes

*Professor, Department of Forest Products,
Mississippi State University, Mississippi, USA*

March 21–23, 2006

Omni Royal Orleans Hotel

New Orleans, Louisiana, USA

Sponsored by Arch Wood Protection, Inc.,

Chemical Specialities, Inc.,

Copper Care Wood Preservatives, Inc.,

Forest Products Society,

Osmose, Inc., and

Timber Products Inspection, Inc.



Forest Products Society
2801 Marshall Ct.
Madison, WI 53705-2295
phone: 608-231-1361
fax: 608-231-2152
www.forestprod.org