Durable Composites: An Overview

H. Michael Barnes
Department of Forest Products
Mississippi State University

ABSTRACT
This overview of durability in composite wood products will discuss the history and background of increasing the durability of wood composites. Some of the current challenges will be presented. Processing for durable composites will include post-manufacture treatments and in-process treatments. New composites and novel approaches and treatments for durability will be discussed.

WPC Decking Durability: Rumors and the Reality

Peter Laks
Dana Richter
Glenn Larkin
Michigan Technological University

ABSTRACT
There is uncertainty about the decay, termite, and mold resistance of commercial wood-plastic composite (WPC) decking. We undertook a project to determine if there are any significant biological degradation problems with commercial WPC products. A total of 31 different decking types from 8 manufacturers were collected by purchasing material from retailers in the upper Midwest. Specimens from each WPC type were tested for decay resistance using a modified version of American Wood Protection Association (AWPA) Standard E10-06. Four fungal species were used - a standard white rot (Trametes versicolor) and three basidiomycetes isolated by our laboratory from field-exposed WPC decking (Phlebia radiata, Pycnoporus cinnabarinus, and Perenniporia tephropora). Termite exposure was performed in Hawaii with Coptotermes formosanus using AWPA E18-06, modified for termite exposure. Mold testing was done using AWPA E24. Although no WPC decking product was highly susceptible to decay or termite attack, performance varied amongst the products. Larger differences were seen in the mold testing, with some products showing heavy mold growth after only a few days of exposure.