

Comparison of Performance Criteria for Evaluating Small Stake Test Data

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ABSTRACT

Stake tests are a critical part of evaluating durability of wood in ground-contact, but there is a lack of criteria for interpreting stake test results. This paper discusses criteria that might be used to determine if short term ratings indicate satisfactory long-term performance. Ratings of 19 by 19 mm wooden stakes from multiple plots in the Harrison Experimental Forest, Mississippi were analyzed to determine how well performance criteria at year three, four or five predicted durability over the longer term (nine years). Results revealed that with only three years of data, false prediction of satisfactory performance was common, even when strict criteria were applied. Predictions of future performance improved with four and five years of data, although some instances of false prediction still occurred. These analyses indicate that with three to five years of data, even very slight differences between ratings of a Test treatment and a Reference preservative may indicate unsatisfactory future performance. However, variability in the ratings of the standard reference preservative can make it difficult to detect slight differences, and increasing the number of replicates may be warranted. More complex statistical approaches that incorporate all years of rating data into comparisons may help to account for year to year variation in ratings. This analysis was limited to one test site and a similar type of analysis other test sites would be beneficial.

Long Term Durability of Heartwood Solid Wood Stakes Treated with ACA or CCA.

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ABSTRACT

Limited long term field data exists evaluating the benefit of chemical wood preservatives on refractory wood species with abundant heartwood. The objective of this study was to determine, by ground contact exposure, the effectiveness of preservative-treated solid wood heartwood material comprised of Douglas-fir, Engelmann spruce or southern yellow pine. Incised and non-incised solid lumber of these species was treated with three different retentions of either ammoniacal copper arsenate (ACA) or chromated copper arsenate (CCA) and placed in ground contact at a Mississippi field test site in 1975. The field stakes were examined and rated for decay every two to five years. The 40 year data shows that incising improves long term performance in samples treated at lower retentions particularly in southern yellow pine and Engelmann Spruce heartwood treated with CCA.

Above Ground Test Method for Preservative Depletion

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ABSTRACT

A method for determining preservative depletion from above ground decking samples is described along with presentation of preliminary results. The test method uses commercial dimension decking samples with sufficient retain and exposure replication to allow statistical analysis with compensation for both within board and analytical variability in retention data. Data are provided for depletion after 6 and 12 months of exposure for samples treated with CA-C and an organic only system, with the variability in analytical results presented both graphically as well as using basic statistics to determine the significance of observed preservative losses.