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## Embedding Strength of Wood Exposed to Decay Fungi

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**Abstract:** The embedding strength of wood decayed by *Fomitopsis palustris* was investigated in this study. The embedding tests were conducted on decayed heartwood of sugi, karamatsu, Douglas-fir and spruce, and decayed sugi sapwood according to ASTM-D5764. The same tests were conducted on sound sugi, karamatsu, Douglas-fir and spruce at various moisture contents. Embedding strength of sound wood decreased as moisture content increased below the fiber saturation point (moisture content 28%), and became constant above the fiber saturation point independent of specimen and load direction. The strength above the fiber saturation point was 50% of the strength of air-dried specimens. The strength reduction by decay was remarkable in the spruce heartwood and the sugi sapwood. A strength reduction was not observed in other species for parallel to grain loading, but was the case only in sugi heartwood for perpendicular to grain loading. The strength reduction of decayed wood after ten weeks was greatest in sugi sapwood, followed, in order, by spruce heartwood, karamatsu heartwood, and Douglas-fir heartwood.

**Keywords:** Embedding strength, decay, moisture content, strength loss, decay resistance



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