

RESISTANCE OF PARTICLE BOARD
TO *PORIA MONTICOLA* AND *LENZITES TRABEA*

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Conflicting reports have recently been made on the fungal resistance of urea formaldehyde-bonded particle board. These inconsistencies have often been attributed to non-standard test methods, various fungi types, and differing component wood species. While Jackson and Savory (1968) and Savory (1969) have noted extreme fungal decay of untreated particle board particularly by *Coniophora cerebella* and *Serpula lacrymans* (syn. *Merulius lacrymans*), other common wood-rotting fungi are found to be inhibited by urea formaldehyde glues. This note is intended to add further to the knowledge of the fungal resistance of particle board. Urea formaldehyde-bonded particle boards having various treatments were exposed, according to the American Society for Testing Materials (ASTM)-D2017 Soil/Block Test Method, to the two softwood rotting fungi, *Poria monticola* and *Lenzites trabea*.

All boards had a density of 44lb/ft³ and contained paraffin wax to prevent excessive swelling during the severe exposure conditions. Component wood was *Pinus radiata*. Board treatments were:

0.004% sodium pentachlorophenate on weight of wood. (This was contributed with wax emulsion which had been treated against mould growth during storage.)

0.7% pentachlorophenol on weight of wood (added as a dry powder to glued chips).

0.03% dieldrin on weight of wood (dieldrin being added as insecticide for tropical termite-infested regions).

0.6% boric acid (added as an insecticide in non-termite infested regions).

As well, untreated boards and untreated component *Pinus radiata* sapwood were exposed. Weight losses and ASTM ratings are shown in Table 1.

TABLE 1—The percentage loss of weight in particle board following 12 weeks' exposure to *Poria monticola* and *Lenzites trabea*

Treatment	<i>Poria monticola</i>	<i>Lenzites trabea</i>	ASTM Rating
0.004% sodium pentachlorophenate	5.8	4.7	Highly resistant
0.7% pentachlorophenol	2.2	2.6	Highly resistant
0.03% dieldrin	14.2	10.0	Resistant
0.6% boric acid	10.1	5.3	Highly resistant
Untreated board	8.2	7.0	Highly resistant
<i>Pinus radiata</i> component wood	60.4	55.4	Non-resistant

CONCLUSION

Urea formaldehyde-bonded *Pinus radiata* particle board is resistant to attack by *Poria monticola* and *Lenzites trabea*. The resistance is far greater than that of the component wood and is achieved without fungicidal additives.

JACKSON, D., and SAVORY, J. G. 1968: The decay resistance of wood fibre building boards and particle boards. *International Biodeterioration Bulletin* 4 (2): 83-8.

SAVORY, J. G. 1969: Testing the fungus resistance of board materials. Pp 49-56 in "Supplement to Materials and Organisms", IUFRO Symposium on Treatment of Board Materials (London). Duncker and Humblot, Berlin.