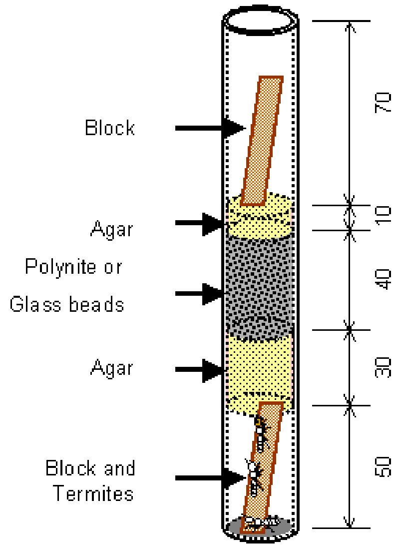
1999

Application of Crushed Cement-stabilized sludge (Polynite) to Physical Barrier against Termites

The ability of Coptotermes formosanus SHIRAKI tunneling into or passing through the physical barrier using Polynite was examined in the laboratory. And using globular glass beads, the influence that the form of the particles and the gap between particles influenced to the penetration was examined. More, the state of the workers carrying particles was observed by the CCD micro color camera.



The device of the penetration test

The result of the penetration

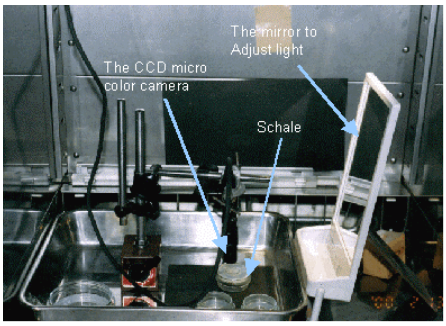
40mm notes that the Polynite layer was penetrated by termites.
( ) : Days needed for penetration

beads →

The range of daiamiter[mm]	Invasion disdance[mm] G	H	I	Total samples penetrated
0.85-1.18	5	5	0	0
1.18-1.40	0	0	0	0
1.40-1.70	0	0	0	0
1.70-2.00	0	0	0	0
2.00-2.36	10	0	0	0
2.36-2.80	0	0	0	0
2.80-3.35	30	20	40(2)	1

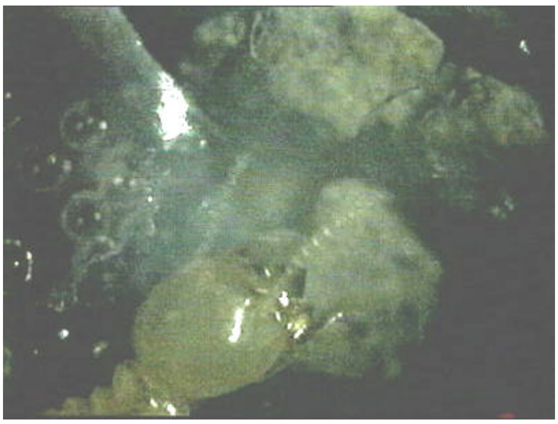
Polynite ↓

The range of daiamiter[mm]	Invasion disdance[mm] A	B	C	D	E	F	Total samples penetrated
1.00–1.18	40(1)	40(1)	40(1)	40(8)	40(14)	0	5
1.18–1.40	10	40(1)	40(6)	40(3)	40(5)	40(4)	5
1.40–1.70	0	40(5)	0	0	20	40(4)	2
1.70–2.00	5	0	0	10	0	0	0
2.00–2.36	15	10	0	30	5	40(4)	1
2.36–2.80	40(7)	40(1)	5	20	10	20	2
2.80–3.35	40(2)	25	10	0	40(1)	40(6)	3



The observation device using the CCD micro color camera

↑A worker moving a bead (0.85-1.18mm)



←A worker carrying a particle of Polynite(1.00-1.18mm)