Application of particulate materials to a Physical Barrier against termites
- Effects of Size, Shape and Surface property of Particles on The Penetration Behavior of Termites-

Physical barriers using particulate materials such as gravels were passed through the gaps between particles, or taken off and carried away by termites, effected by the particle sizes. In this study, the effects of size, shape, surface property of particles on the penetration behavior of termites were investigated, although it was mainly discussed the relationship between the particle sizes and the penetration ability of termites.

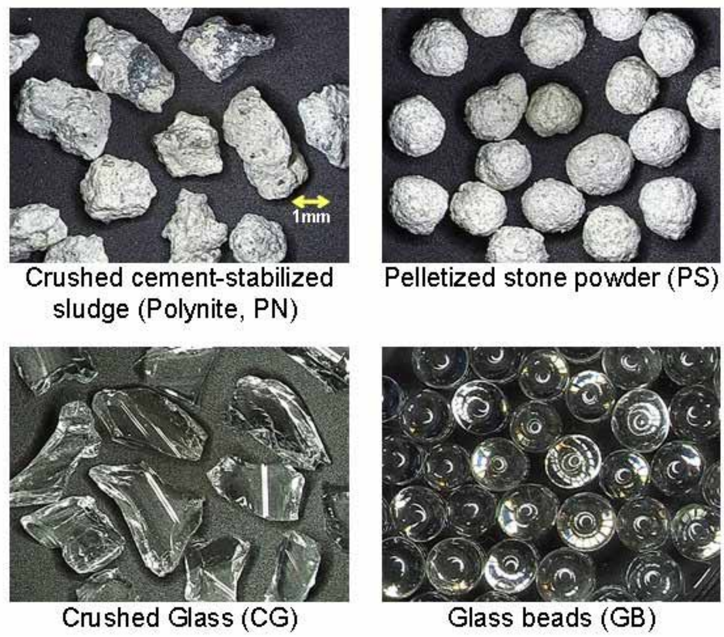

Fig. 1. Shapes of four types of particulate materials.

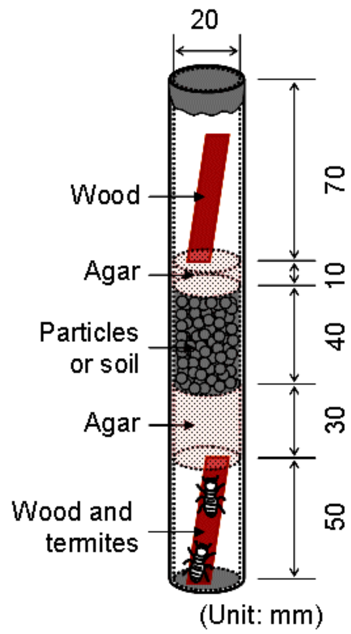

Fig. 2. Setup of penetration test.

Table 1. Penetration test for four types of particulate materials.

Particle size (mm)	Number of samples penetrated by termites per employed			
	PN	PS	CG	GB
1.00-1.18	2/6(5) a)	3/3(1)	0/3	0/3
1.18-1.40	5/6(3.8)	3/3(1)	0/3	0/3
1.40-1.70	2/6(4.5)	3/3(3)	0/3	0/3
1.70-2.00	0	3/3(8.3)	0/3	0/3
2.00-2.36	1/6(4)	0/3	0/3	0/3
2.36-2.80	2/6(4)	0/3	0/3	0/3
2.80-3.35	3/6(3)	0/3	1/3(10)	1/3(2)

a) Average day for penetration.

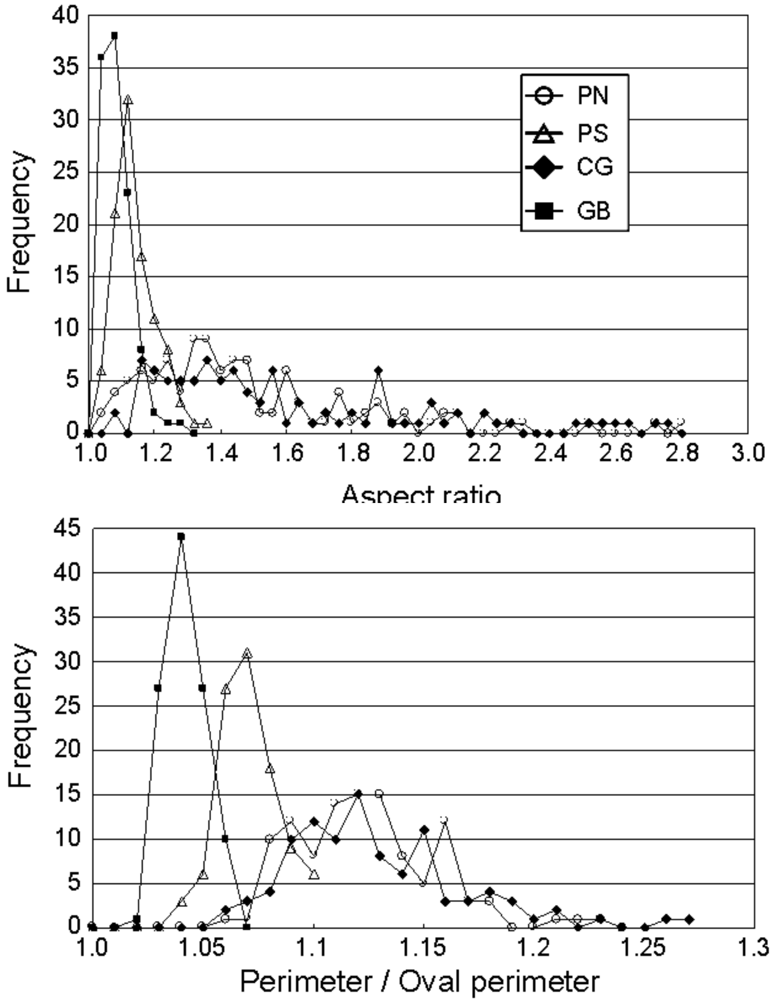

Fig. 3. Results of image analysis of four types of particulate materials.

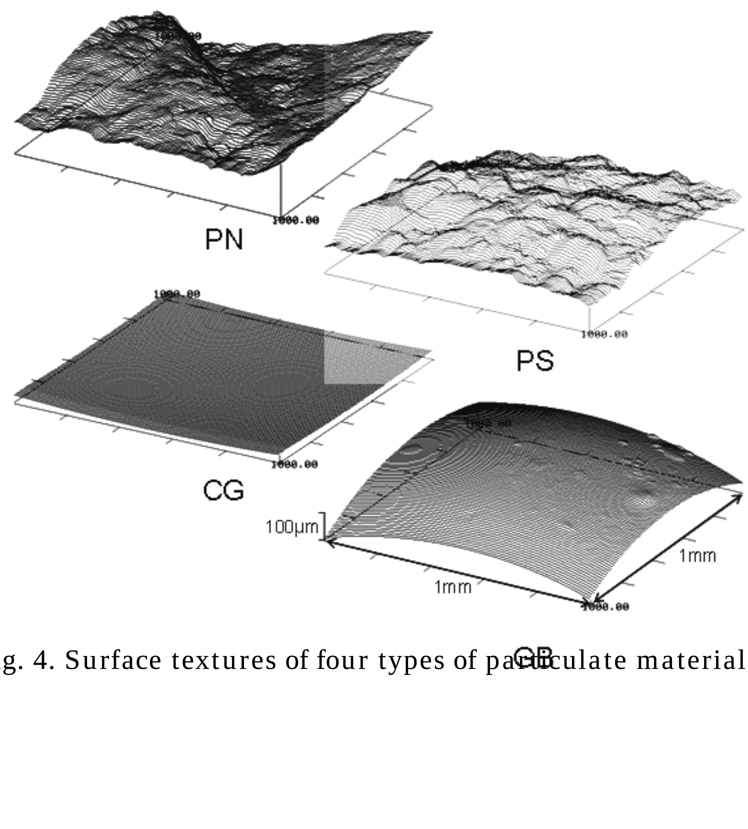

Fig. 4. Surface textures of four types of particulate materials.