



PSB Singapore

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SUBJECT:

Testing of Drainage Module assembled in 3 and 4 partition configuration.

TESTED FOR:

EcoClean Technology Sdn Bhd
12A-03, Wisma Zelan,
Jalan Tasik Permaisuri 2
Bandar Tun Razak, Cheras
56000 Kuala Lumpur
Malaysia

Attn: Mr Yusni

SAMPLES DESCRIPTION:

Five pieces each of drainage modules with 3 & 4 partitions configuration and nominal size 400 x 600 x 450mm were submitted by EcoClean Technology Sdn Bhd for testing.

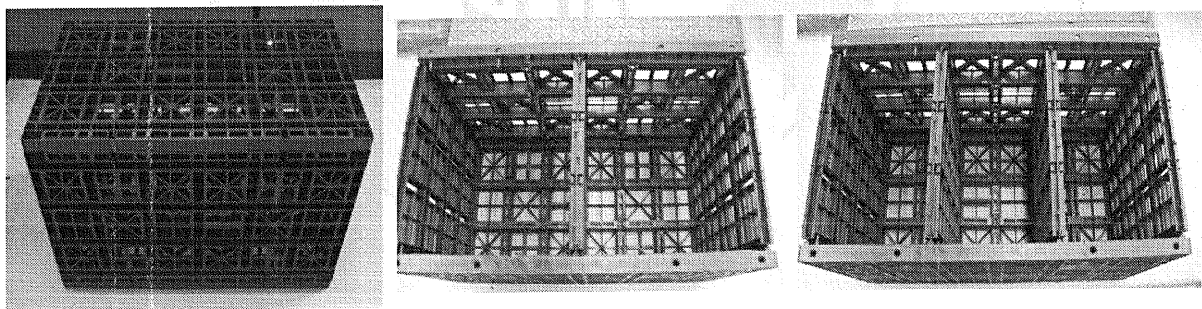


Fig. 1 : Photo of sample



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TEST METHODS: (AS SPECIFIED AND AGREED BY THE CLIENT):

1. Stage 1 Toughness Test

Replicates of the case when the soil is not uniformly distributed over the surface of the module (local load). The module was placed on the Universal Testing Machine. A pad of footprint of 120 x 120mm was placed on top the panel, at equal distance between two partions. An increasing load was applied at a speed of 50mm/min, to the centre of the pad. The load verses strain was continuously recorded until module failed.

Nominal specimen dimensions : 400 x 600 x450mm
Crosshead speed : 50 mm/min
Nunumber of determination : 1 each

2. Stage 2 Toughness Test

Replicates of the case when the soil is uniformly distributed under the short term Static load (uniformly distributed load). The module was placed on the Universal Testing Machine. An increasing load was applied at a speed of 50mm/min, over the full surface. The load verses strain was continuously recorded until module failed.

Nominal specimen dimensions : 400 x 600 x450mm
Crosshead speed : 50 mm/min
Number of determination : 2 each

Fatigue Testing Set

The fatigue testing replicates of the case when a load is applied repeatedly to the same module at short periods of time. The module was subjected to a 4 tonnes compression load at a duration of 10 seconds for 5 cycles. After the fatigue test, the case will went through a Stage 2 Toughness Test determine the effect of cyclic test.

Nominal specimen dimensions : 400 x 600 x 450mm
Crosshead speed : 1000N/min
Number of determination : 1 each



TEST RESULTS:

Tests	Unit	Sample : Drainage Module	
		3 Partition	4 Partition
1. Stage 1 Toughness Test			
Ultimate compressive load	kN	1.73	3.13
2. Stage 2 Toughness Test			
a. Ultimate compressive load, average	kN	49.22	60.38
b. Compressive Yield Strength/Stress, average	kPa Tonnes/m ²	205.08 20.51	251.58 25.16
3. Fatigue Strength (5 Cycles)			
a. Ultimate compressive load	kN	46.56	58.57
b. Compressive Yield Strength/Stress	kPa Tonnes/m ²	194.00 19.40	244.04 24.40

Note : Fig. 2 & 3 show the test set-up and Fig. 4 & 5 show the failure mode.


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Engineer


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