

May 22, 2018

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Subject: Characterization of thermal retention properties for different assemblies
O/Ref.: 153-B-0019362-1-IM-L-0001-00

Sir,

Englobe Corp. (Englobe) was mandated by Sigmadek to characterize the thermal retention properties of Sigmadek's aluminium deck tile assemblies in comparison to composite deck tiles over the course of ten minutes.

1. TESTED MATERIALS

The tested assemblies are Kaimai, Awanui, Fjordland, and the composite.

2. TEST METHOD

Each surface was heated for fifteen minutes (15 min) with a 175 watt infrared bulb. Temperature readings were taken at the point of heating, at the following time intervals: 0 minutes, 2 minutes, 4 minutes, 6 minutes, 8 minutes and 10 minutes. Each temperatures reading was taken from a distance of 14 ½", using an infrared thermometer #261687.

3. RESULTS

You will find a table of results and a heat retention graph showing the temperatures attained for the different assemblies attached, as well as pictures showing the testing assembly using an infrared lamp. The results are shown in function of temperature over time.

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We trust this report meets your specifications, and we remain available to provide any additional information you may require.

Yours truly,



Hugues Simard, tech. sr
Project manager

Encl.: **Annex 1** Results table
Annex 2 Heat retention graph
Annex 3 Photographs

Annex 1 Results table

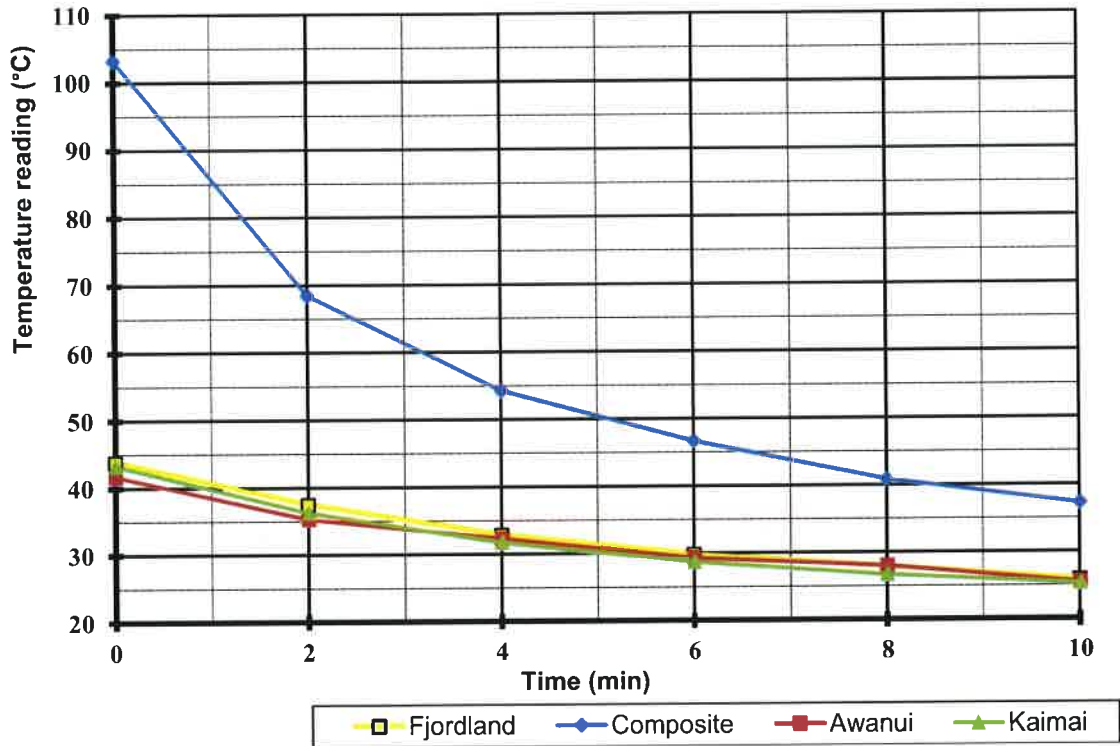


Equipement: Infrared thermometer #261687

Test method: 1- Heat during 15 minutes with a 175 watt infrared bulb
2- Distance of thermometer: 14½ inches

Ambiant temperature	19,6	20,2	20,4	20
Minutes	Kaimai	Awanui	Fjordland	Composite
0	43,2	41,6	43,8	103,2
2	36,2	35,2	37,4	68,4
4	31,6	32,2	32,8	54,2
6	28,6	29,2	29,8	46,6
8	26,6	27,9	27,8	40,8
10	25,2	25,4	25,8	37,2

Annex 2 Heat retention graph



Annex 3 Photographs





Material 1: Kamai deck tiles



Material 2: Awanui deck tiles



Material 3: Fjordland deck tiles



Material 4: Composite deck tiles