



Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

November 16, 1992

Flaherty-Wick, Incorporated
110 Fifth Street
West Elizabeth, Pennsylvania

15088-0624

Attention: Mr. Jim Flaherty

Re.: ASTM #C-666 Freeze/Thaw Test for PermaCrete Treated Concrete

From September 21, 1992 through November 10, 1992, we completed the Freeze/Thaw Test on 6 concrete 12 in. x 4 in. x 3 in. rectangles which were designed and cast in our laboratory on August 10, 1992. The 6 raw concrete specimens had tested compressive strength of 4200 PSI. 3 of the 6 rectangles were treated with two coats of PermaCrete, brushed on the samples on August 24, 1992. Following a 28-day PermaCrete cure period, all specimens were then subjected to 300 freeze/thaw cycles as required by the ASTM #666 Test. The following are the results of that test.

Examination of the untreated specimens showed that they had completely deteriorated into sand-like particles with raw aggregate separated from the original concrete casting; the untreated specimens were no longer recognizable as rectangles.

Examination of the specimens treated with PermaCrete showed no visible cracking, powdering, hairline cracking or spalling. In fact, the treated rectangles appeared to be in their original pristine condition, with the freeze/thaw cycles having had no effect whatsoever on the integrity of the concrete matrix.

Very truly yours,

PITTSBURGH TESTING LABORATORY DIVISION

A handwritten signature in black ink that reads 'C.A. Sherman'. The signature is written in a cursive, flowing style.

C. A. Sherman
Department Manager
Construction Services

CAS/mb