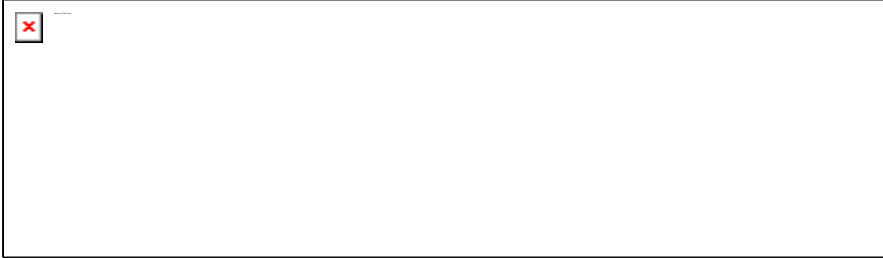


**water permeability (3)**



December 10 1990

**ICS/Penetron Intl. Ltd.**  
45 Research Way  
Suite 203  
East Setauket, NY 11733

ATTN: Mr. R.J. Revera

1) In accordance with request of client, protection and permeability tests were made in the laboratory on the Penetron treated concrete samples in the following manner.

2.) <u>MIX</u>		
<u>NO.</u>	<u>1</u>	<u>2</u>
CEMENT	752	705
SILICA		
FUME	N/A	35#
SAND	1135	1150
STONE	1930	1930
LBS OF		
WATER	292	298
W.R.D.A.-	28.0	
HYCOL	OZ.	28.0 OZ.
SLUMP	3.25"	2.5"
W/C		
RATIO	0.388	0.402 (W/C+SF)
7 DAY		
P.S.I.		
AVERAG	5412	5743
E		
28 DAY		
P.S.I.	7310	
AVERAG	6732	
E		

**PENETRATION**

<b>DATE</b>	<b>PENETRATION</b>	
April 1991	Negligible	Negligible
July 1991	Negligible	Negligible
Oct. 1991	Negligible	Negligible
Jan. 1992	Negligible	Negligible
April 1992	Negligible	Negligible
July 1992	Negligible	Negligible

***Negligible***

NOTE: All Materials and Procedures used in the mix designs were in accordance or conformance to the requirements of the American Society of Testing Materials.

3) All concrete cylinders were cast 12/10/90 (refer to mix design), cured for 28 days and then slurry coated with Penetron (as per standard Penetron application specification). After coating, the cylinders were allowed to cure for an additional 14 days.

At the end of this period the cylinders were immersed in three (3) separate vessels containing (1) Motor oil (10w40), (2) Diesel Fuel #2 and (3) 87 Octane Gasoline.

4) At approximately 90 day intervals, sample cylinders were removed and saw-cut to determine permeability of petroleum products, while others were checked for strength and abrasion qualities. This process continued for a period of 18 months. Individual test results are shown in Item #2 of this report.

5) This continuous testing demonstrated the full range of protection provided by the Penetron system. Specimen cylinders showed no loss of strength, abrasion resistance or breakdown due to permeability and/or exposure to the petroleum products.

6) Conclusion: Testing demonstrates that Penetron effectively protects concrete exposed to petroleum products.

