

## ConduCrete CP Permeability Testing

Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter by ASTM D5084 | Constant Volume

Sample Name	ConduCrete CP
Type	Tube
Permeant Fluid	De-aired distilled water
Orientation	Vertical
Sample Preparation	Extruded from cylinder mold and placed into permeameter at as received density and moisture content
Assumed Specific Gravity	1.75

Parameter	Initial	Final	Unit
Height	5.50	5.50	inches
Diameter	3.98	3.98	inches
Area	12.44	12.44	inches <sup>2</sup>
Volume	68.05	68.05	inches <sup>3</sup>
Mass	1703	1768	grams
Bulk Density	92.4	96.95	pcf
Moisture Content	22.8	29.2	%
Dry Density	75.2	75.2	pcf
Degree of Saturation	76	96	%

### B Coefficient Determination

Cell Pressure, psi	90.02	Increased Cell Pressure, psi	95.03	Cell Pressure Increment, psi	5.01
Sample Pressure, psi	87.34	Corresponding Sample Pressure, psi	91.84	Sample Pressure Increment, psi	4.49
				B Coefficient	0.90

B value did not increase with increase in pressure. Final degree of saturation > 95%.

## Flow Data

Date	Trial #	Pressure, psi		Manometer Readings			Elapsed Time, sec	Gradient	Permeability K, cm/sec	Temp, °C	R <sub>t</sub>	Permeability K, @ 20°C, cm/sec
		Cell	Sample	Z <sub>1</sub>	Z <sub>2</sub>	Z <sub>1</sub> -Z <sub>2</sub>						
Apr 4 2019	1	90.0	87.3	10.0	8.95	1.05	35	10.55	1.5E-06	19.5	1.013	1.5E-06
Apr 4 2019	2	90.0	87.3	10.0	8.95	1.05	33	10.55	1.4E-06	19.5	1.013	1.5E-06
Apr 4 2019	3	90.0	87.3	10.0	8.95	1.05	36	10.55	1.4E-06	19.5	1.013	1.5E-06
Apr 4 2019	4	90.0	87.3	10.0	8.95	1.05	34	10.55	1.4E-06	19.5	1.013	1.5E-06

PERMEABILITY AT 20° C:  $1.46 \times 10^{-6}$  cm/sec (@ 2.6 psi effective stress)

These results are the summary of results generated from testing conducted by GeoTesting Express located in Acton, MA. Testing was performed from March 2018 to April 2019.

Published Date: April 2022