

ConduCrete Pro Permeability Testing

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

Sample Name	ConduCrete Pro
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	2.35

Parameter	Initial	Final	Unit
Height	7.43	7.43	inches
Diameter	4.01	4.01	inches
Area	12.63	12.63	inches ²
Volume	93.8	93.8	inches ³
Mass	2596	2649	grams
Bulk Density	105	107	pcf
Moisture Content	31.3	33.9	%
Dry Density	80.1	80.1	pcf
Degree of Saturation	88	96	%

B Coefficient Determination

Cell Pressure, psi	91.95	Increased Cell Pressure, psi	96.96	Cell Pressure Increment, psi	5.01
Sample Pressure, psi	89.34	Corresponding Sample Pressure, psi	91.01	Sample Pressure Increment, psi	1.67
				B Coefficient	0.33

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 _t	Permeability K, @ 20°C, cm/sec
		Cell	Sample	Z ₁	Z ₂	Z ₁ -Z ₂						
Dec 6 2016	1	92.0	89.3	26.5	26.3	0.2	208	17.7	2.1E-08	19.5	1.013	2.1E-08
Dec 6 2016	2	92.0	89.3	26.5	26.3	0.2	226	17.7	1.9E-08	19.5	1.013	2.0E-08
Dec 6 2016	3	92.0	89.3	26.5	26.3	0.2	246	17.7	1.8E-08	19.5	1.013	1.8E-08
Dec 6 2016	4	92.0	89.3	26.5	26.3	0.2	261	17.7	1.7E-08	19.5	1.013	1.7E-08

PERMEABILITY AT 20° C: 2.0×10^{-8} 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 December 2, 2016 to December 12, 2016.

Published Date: April 2022