



Expansion Index

ASTM D-4829-07 X

CTL Job No.: _____ Boring: 1 Date: _____
 Client: _____ Sample: _____ By: PJ
 Project Name: _____ Depth: Sta. 40+75
 Project No: _____
 Visual Description: Olive Brown Clayey SAND

Processing:		Moisture Calcs		
<u>Percent Passing #4 Sieve</u>				
		<u>Initial</u>	<u>Final</u>	
Total Air Dry Weight:	N/A	Tare #		
Wt. Retained on #4 Sieve:	N/A	Wet Wt. + Tare, (gm)	678.1	716.7
% Retained	N/A	Dry Wt. + Tare, (gm)	633.2	633.2
% Passing #4 Sieve:	N/A	Tare Wt., (gm)	112.9	112.9
Sample Dimensions		Wt. Of Water, (gm)	44.9	83.5
Height (in.)=	1.000	Diameter (in.) =	4.017	% Water
			13.9	25.8

Remolding:

Tamp two lifts, 15 blows/lift @ slightly below optimum moisture content

	<u>Initial</u>	<u>Final</u>	
Ring & Sample:	565.2	603.8	grams
Ring:	196.4	196.4	grams
Remolded Wet Wt.:	368.8	407.4	grams
Wet Density	110.9	118.5	pcf
Dry Density	97.4	94.2	pcf
% Sat. =	$\frac{(2.7)(\text{dry dens.})(m/c)}{168.48 - (\text{dry dens.})}$		UBC Saturation range 49-51%
	51.2	88.3	ASTM Saturation range 48-52%

Expansion Test:

	Date	Time	Dial	Delta h, %	Tested with 1 psi Surcharge Remarks:
		19:22	0.0000	0.000	
		12:03	-0.0335	3.350	
		14:17	-0.0335	3.350	
			Total Dial	3.4	

Expansion Index Results
 $\frac{\text{initial dial} - \text{final dial}}{\text{initial sample height}} \times 1000$
EI = 34

This test is a simplified index test and may not show the full potential for expansion and/or shrinkage. Use result with caution! See ASTM D 3877 or D4546