

الباب الرابع

نتائج التجارب

4.1 نتائج وحسابات التجارب العملية:

حدود القوام :

جدول (4.1) يوضح نتائج تجربة حدود القوام

Date:	5.8.2015							
Location:	الخرطوم - السليمة							
Type of Test			Liquid Limit				Plastic Limit	
Test Number			1	2	3	4	1	2
Cone Penetration	mm		14.8	18.6	24.0	28.5		
Container	No.		7	8	9	10	11	12
Wt. of Wet Soil + Wt. of Content	gm		31.50	36.53	37.74	37.04	24.78	24.11
Wt. of Dry Soil + Wt. of Content	gm		28.38	30.27	30.52	29.17	22.87	22.24
Wt. of Content	gm		16.90	11.28	11.13	10.85	10.74	11.00
Wt. of Moisture (WW)	gm		3.12	6.26	7.22	7.87	1.91	1.87
Wt. of Dry Soil (WS)	gm		11.48	18.99	19.39	18.32	12.13	11.24
Moisture Content= (WW/WS)	%		27.18	32.96	37.24	42.96	15.75	16.64
Ave. Moisture Content	%						16	

Liquid Limit Determination

34

RESULT:								
	Liquid Limit %	=	34					
	Plastic Limit %	=	16					
	Plasticity Index %	=	18					

الدمك :

جدول (4.2) يوضح نتائج تجربة الدمك

sudan university of science and technology							
College of Engineering							
School Civil Engineering							
Soil Laboratory							
Proctor Test							
Date: 02/08/2015							
Location:		الخرطوم - السلامة		Mould Number :-A			
Sample No :1st		الأرض الطبيعية		Volume of mould =		944 g /cm3	
				Weight of mould =		5033 g	
A- Density Calculations :-							
Test NO		1	2	3	4		
Weight.of wet soil+mould (g)		6900	7030	7135	7135		
Weight.of mould (g)		5033	5033	5033	5033		
Weight.of wet soil (g)		1867	1997	2102	2102		
Volume of mould (cm³)		944	944	944	944		
Wet density (g/cm³)		1.98	2.12	2.23	2.23		
Dry density (g/cm³)		1.85	1.92	1.96	1.92		
B- Moisture Calculations :-							
	NO	4	R2	28	5		
Weight.of wet soil+container (g)		135.15	139.40	168.75	163.91		
Weight.of dry soil+container (g)		127.86	128.46	150.72	144.04		
Weight.of container (g)		20.32	20.91	17.53	21.76		
moisture content(%)		6.78	10.17	13.54	16.25		
C- Dry density-Moisture relationship:-							
O.M.C= 13.0%				M.D.D= 1.96 g/cm3			

:CBR

جدول (4.3) يوضح نتائج تجربة ال CBR

CBR (AASHTO T.193-99)															
Sample DES			Sampling Date:		3-Aug-2015			Mould Dia.		15.2cm					
Material		الأرض الطبيعية		Testing Date:		7-Aug-2015			Mould Hight		12.3cm				
Location:		الخرطوم - السلمة		CBR = 5%											
R.F= 0.025 Kn															
PREPARATION OF SPECIMEN						PENETRATION TEST (After 4 Days of Soaking)									
Method of Preparation (Blows)		10	30	65	Penetration- (in.)	Reading			Force (kn)			Bearing Value(%)			
Base Plate No		9	E1	E2		E3	Blows			Blows			Blows		
Mould Body No			E1	E2		E3	Blows			Blows			Blows		
Wt of Mould		(g)	7463	7120		7396	10			30			65		
Wt of Mould+Soil		(g)	11953	11792	12279.0	0.000	0	0	0	0.0	0.0	0.0			
Wt of wet Soil		(g)	4490	4672	4883	0.025	3	8	10	0.1	0.2	0.3			
Volume of Mould		(cc)	2193	2193	2193	0.050	5	10	15	0.1	0.3	0.4			
Wet density		(g/cm³)	2.05	2.13	2.23	0.075	7	13	21	0.2	0.3	0.5			
Dish No			10	10	10	0.100	9	16	27	0.2	0.4	0.7	1.7	3.0	5.1
Wt of Dish		(g)	19.97	19.97	19.97	0.125	10	18	33	0.3	0.5	0.8			
Wt of Dish +Wet Soil		(g)	223.03	223.03	223.03	0.150	12	21	39	0.3	0.5	1.0			
Wt of Dish + Dry Soil		(g)	200.52	200.52	200.52	0.175	13	24	42	0.3	0.6	1.1			
Wt of dry Soil		(g)	180.55	180.55	180.55	0.200	15	26	45	0.4	0.7	1.1	1.9	3.3	5.6
Wt of water		(g)	22.51	22.51	22.51	0.225	16	30	55	0.4	0.8	1.4			
Moisture Content		%	12.5	12.5	12.5										
Dry Density		(g/cc)	1.82	1.89	1.98										
Maximum Dry Density (MDD)= 1.96 g/cm3												90%MDD = 1.76 g/cm3			
Optimum Moisture Content= 13 %												95%MDD = 1.86 g/cm3			
												98%MDD = 1.92 g/cm3			