

السيد المهندس / رئيس قطاع التنفيذ والمناطق

تحية طيبة.. وبعد،،

بالإحالة إلى مشروع القطار الكهربائى السريع قطاع ( برج العرب - العلمين ) القطاع الخامس (أ)  
نتشرف بأن نرفق لسيادتك طيه المقايسة المعدله بعد اعتماد لجنة المفاوضه للقطاع الأتى:

المسلسل	اسم الشركة	من المحطة	إلى	بطول
1	شركة أورانج للإستيراد و التصدير عقد رقم 2024/2023/718	345+960	347+460	1.5 كم

برجاء من سيادتكم التفضل بالأحاطه والتوجيه بالازم

وتفضلوا بقبول فائق الاحترام والتقدير،،

رئيس الإدارة المركزية

المنطقة الخامسة - غرب الدلتا

عميد مهندس/

"هاني محمد محمود طه"

### المقايضة المعدلة لعملية

اسناد أعمال الجسر الترابي للخط الأول لمشروع القطار الكهربائي السريع  
(العين السخنة - العاصمة الإدارية - العلمين - مطروح) (قطاع وادي النطرون / برج العرب) أعمال سن الفلتر  
القطاع من المحطة ٣٤٥+٩٦٠ الى المحطة ٣٤٧+٤٦٠ بطول ١,٥ كم

استكمال اعمال سن الفلتر (١)

عقد (٢٠٢٤/٢٠٢٣/٧١٨)

رقم البند	بيان الأعمال	الوحدة	الكمية	الفئة	الإجمالي
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٣	أعمال الردم				
٢-٣	بالمتر المكعب اعمال توريد وفرش طبقة فلتر من الأحجار الصلبة المتدرجة ناتج تكسير كسارات والمطابقة للمواصفات واقصي حجم حبيبي ما بين ٢٠مم الي ٧٥ مم والا يزيد نسبة المار من منخل ٢٠٠ عن ٥% والتدرج الوارد بالاشتراطات الخاصة بالمشروع وهي احجار مقاس سن ١: سن ٢: سن ٤ او سن ٦ بنسبة ١: ١: ١: ١ والا يقل معامل المرونة EV2 من تجربة لوح التحميل عن ٥٠. ميجابيسكال والا يزيد نسبة الفاقد بجهاز لوس انجلوس عن ٤٥% والفئة تشمل اعمال التجارب العملية والبند يشمل اجراء التجارب العملية والحقليّة طبقا لاصول الصناعة الممتازة وتقدير الاستشاري وتعليمات المهندس المشرف . - لمسافة نقل ٢٠ كم . - الفئة شاملة قيمة المادة المحجّرة. - يتم احتساب ١,٣ جنية لكل ١ كم بالزيادة او النقصان .	٣م			
	السعر ابتداءً من شهر مايو ٢٠٢٣ طبقاً للمفاوضة بتاريخ ١٨-١٢-٢٠٢٣	٣م	١٨٥٧٥,٠	٣٤٧,٢٠	٦,٤٤٩,٢٤٠
	علاوة مسافة النقل ١٢٢ كم = ١,٣ * ١٠٢ = ١٣٢,٦ ( ٢٠ - ١٢٢ )	٣م	١٨٥٧٥,٠	١٣٢,٦٠	٢,٤٦٣,٠٤٥
	علاوة تحصيل رسوم الكارثة والموازين طبقاً للائحة الشركة الوطنية	٣م	١٨٥٧٥,٠	٢٥,٠٠	٤٦٤,٣٧٥
	<b>الإجمالي</b>				٩,٣٧٦,٦٦٠
تسبع ملايين وثلاثمائة وستة وسبعون ألفاً وستمئة وستون جنيهاً فقط لاغير.					
* يرجى العلم بان الفئات المذكورة طبقاً للمفاوضة الخاصة بالقطاع الخامس (أ) بتاريخ ١٨-١٢-٢٠٢٣.					

الهيئة العامة للطرق والكباري  
مدير عام المشروعات  
م/ محمد حسني فياض

الهيئة العامة للطرق والكباري  
مدير المشروع  
م/ مارجريت مجدي

المكتب الاستشاري الهندسي  
مدير المشروع  
م/ السيد سيفه الدين

الشركة المنفذة  
مدير المشروع  
م/ محمد حافظ

ORANGE  
EXPORT & IMPORT  
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رئيس الإدارة المركزية  
منطقة غرب الدلتا  
الاسكندرية - مرسى مطروح  
عميد مهندس /  
"هاني محمد محمود طه"



مهندس الهيئة  
م / مارجريت مجدي

قائمة الكميات الواردة بالمستخلص جاري (٢)

اسناد أعمال الجسر الترابي للخط الأول من مشروع القطار الكهربائي السريع  
(برج العرب - العلمين) (أعمال سن الفلتر)  
المسافة من الكم ٣٤٥,٩٦٠ إلى الكم ٣٤٧,٤٦٠ بطول ١,٥ كم (بالأمر المباشر).

علاوة بند (٢-٣) علاوة مسافة النقل ١٢٢ كم .

عقد (٢٠٢٤/٢٠٢٣/٧١٨)

تنفيذ : "شركة اورانج للاستيراد والتصدير"

مقدار العمل السابق :	٠,٠	٣م
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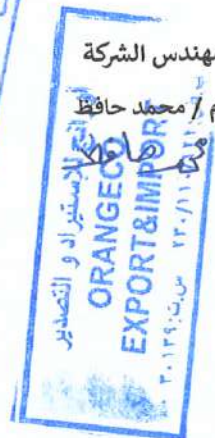
الكمية (م٣)	المسطح (م٢)	الطول (متر)	الموقع الكيلومتری		الكود	مسلسل
			الى الكم	من الكم		
١٠٠٤,١٩	٥٠,٢١	٢٠	٣٤٦+٤٦٠	٣٤٦+٤٤٠	IR-FT-004 Rev02	١
١٠٧٣٩,٣٥	٥٩,٦٦	١٨٠	٣٤٦+٨٢٠	٣٤٦+٦٤٠	IR-FT-005	٢
٩٦٦,٨٥	٤٨,٣٤	٢٠	٣٤٦+٤٨٠	٣٤٦+٤٦٠	IR-FT-006	٣
٢٢٨٠,٨٦	٤٥,٦٢	٥٠	٣٤٧+٠٨٠	٣٤٧+٠٣٠	IR-FT-007 REV02	٤
١٤٩٩١,٢٥	اجمالي الكمية الهندسي (م٣)					
١٧٩٨٩,٥٠	اجمالي الكمية بعد احتساب نسبة غرز ٢٠% (م٣)					
١٧٩٨٩,٥٠	الاجمالي خلال فترة المستخلص الحالية (م٣)					

مهندس الهيئة  
م / مارجريت مجدي

مهندس الاستشاري  
مكتب أ.د/ خالد قنديل  
م / السيد سيف الدين

مهندس الاستشاري  
مكتب XYZ  
م / محمد خليل

مهندس الشركة  
م / محمد حافظ



قائمة الكميات الواردة بالمستخلص جاري (٢)

اسناد أعمال الجسر الترابي للخط الأول من مشروع القطار الكهربائي السريع  
(برج العرب - العلمين) (أعمال سن الفلتر)  
المسافة من الكم ٣٤٥,٩٦٠ إلى الكم ٣٤٧,٤٦٠ بطول ١,٥ كم (بالأمر المباشر).

علاوة بند (٢-٣) علاوة تحصيل رسوم الكارثة والموازن طبقا للائحه الشركة الوطنية.

تنفيذ : "شركة اورانج للاستيراد والتصدير"

مقدار العمل السابق :		٠,٠	٣م			
مسلسل	الكود	الموقع الكيلومتري		الطول (متر)	المسطح (م)	الكمية (م³)
		من الكم	الى الكم			
١	IR-FT-004 Rev02	٣٤٦+٤٤٠	٣٤٦+٤٦٠	٢٠	٥٠,٢١	١٠٠٤,١٩
٢	IR-FT-005	٣٤٦+٦٤٠	٣٤٦+٨٢٠	١٨٠	٥٩,٦٦	١٠٧٣٩,٣٥
٣	IR-FT-006	٣٤٦+٤٦٠	٣٤٦+٤٨٠	٢٠	٤٨,٣٤	٩٦٦,٨٥
٤	IR-FT-007 REV02	٣٤٧+٠٣٠	٣٤٧+٠٨٠	٥٠	٤٥,٦٢	٢٢٨٠,٨٦
اجمالي الكمية الهندسي (م³)						
١٤٩٩١,٢٥						
اجمالي الكمية بعد احتساب نسبة غرز ٢٠% (م³)						
١٧٩٨٩,٥٠						
الاجمالي خلال فترة المستخلص الحالية (م³)						
١٧٩٨٩,٥٠						

مهندس الهيئة  
م / مارجريت مجدي

مهندس الاستشاري  
مكتب د. خالد قنديل  
م / السيد سيف الدين

مهندس الاستشاري  
مكتب XYZ  
م / محمد خليل

مهندس الشركة  
م / محمد حافظ

مهندس الاستشاري  
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مهندس الاستشاري  
مكتب XYZ  
م / محمد خليل

مهندس الشركة  
م / محمد حافظ



# MATERIAL INSPECTION REQUEST



Contractor Company	Orange Company For Import & Export and General Contracting			Designer Company		(KK) Engineering Consulting Office					
Issued by Contractor	Name	Sign		Date/ Serial Number		Time					
	Eng: Abdullah Kamal			26-11-2023 M.I.R-007-1		11:00 AM					
Received by GARB CONSULTANT	Eng. Saied Saif		MIR	C1	C2	C3	DD	MM	YY	HH	MM
				347	EW	CS	27	11	23	11	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials		FILTER LAYER			
Location to be Used		From St. (347+020) To St. (347+080)			
MAR Approval No		MAR (012)		Date	10-11-2023
UIR Approval No		IR (FT-007)			22-11-2023
Supplier Name		AL-Salam & AL-Howayeg			
Test Requirement		P.L.T (DIN 18134)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.	
Reference Photos		No	Other		
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	1	28-11-2023	
2					
3					
4					
Comments by : Saied Saif (K.K)			Comments by: Eng. Alaa Abd-Allatif (ER)		
1- تم اختبار القطاع . Plate load test 2- تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .			1-P.L.T was carried-out By (CEL). 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng: Abdullah Kamal			A
QA/QC *	Eng. Saied Saif			A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif		28-11-2023	AWC

\* Designer

\*\* Alignment / Bridges: Culvert Only

**Company** : Orange contraction.

**Project** : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority

**Sector (5) - Borg Al Arab to El Hamam.**

**Subject** : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

**Test Location** : Station (347+020 to 347+080)

**Test Date** : 27/11/2023

**Repot Date** : 28/11/2023

**Type of soil** : fill filter

**Test level** : ----

**Report No.** : 010

Dear Gentleman,

According to the above mentioned subject the test performed as follows:-

### Apparatus

1. Loading plates consists of one plate with 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

### Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plate 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 300 mm loading plate, the limit values are 5.0 kg/cm<sup>2</sup>
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load
9. Following unloading, a further (2<sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads

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٣ ش الملك الأفضل

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## Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
  - location of test site - Dimension of loading plate
  - Measuring device used - Type of soil
  - Type of Bedding material below the plate -Weathering condition
  - Time and date of measurements - Unusual observation made during test
  - Dial gauge reading and corresponding normal stress - Loading-settlement curve
  - Description of the soil condition below the plate after testing

## Report

- Type of Soil : fill filter
- Job requirement :  $E_{v2} \geq 50 \text{ Mpa}$

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	300
- date of measurement	27/11/2023
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

## Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	$E_{v2}/E_{v1}$ Ratio
		$E_{v1}$ (MPa)	$E_{v2}$ (MPa)	
1	347+050	69	153	2.2

Signature / 



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Company Name : Orange contraction.  
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam  
 Test Date : 27/11/2023  
 report date : 28/11/2023  
 Location : Station 347+050  
 Test No. : 01

**Nonrepetitive Static Plate Load Tests of Soils**  
**DIN 18134**

Data sheet

**Loading Stage (1)**

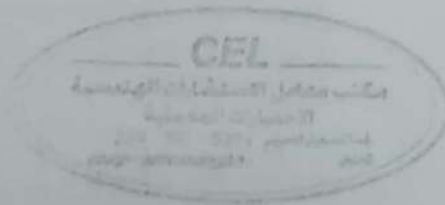
Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.85	0.15	19.83	0.17	19.85	0.15	0.16
2	1.67	19.67	0.33	19.61	0.39	19.71	0.29	0.34
3	2.50	19.46	0.54	19.38	0.62	19.30	0.70	0.62
4	3.33	19.28	0.72	19.11	0.89	18.92	1.08	0.90
5	4.17	19.12	0.88	18.82	1.18	18.68	1.32	1.13
6	5.00	19.04	0.96	18.54	1.46	18.44	1.56	1.33

**Unloading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	19.04	0.96	18.54	1.46	18.44	1.56	1.33
2	2.50	19.08	0.92	18.60	1.40	18.49	1.51	1.28
3	1.250	19.18	0.82	18.68	1.32	18.55	1.45	1.20
4	0.05	19.42	0.58	18.83	1.17	18.78	1.22	0.89

**Loading Stage (2)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	19.30	0.70	18.69	1.31	18.71	1.29	1.10
1	1.67	19.17	0.83	18.52	1.48	18.49	1.51	1.27
2	2.50	19.05	0.95	18.38	1.62	18.42	1.58	1.38
3	3.33	18.93	1.07	18.26	1.74	18.30	1.70	1.50
4	4.17	18.80	1.20	18.13	1.87	18.17	1.83	1.63



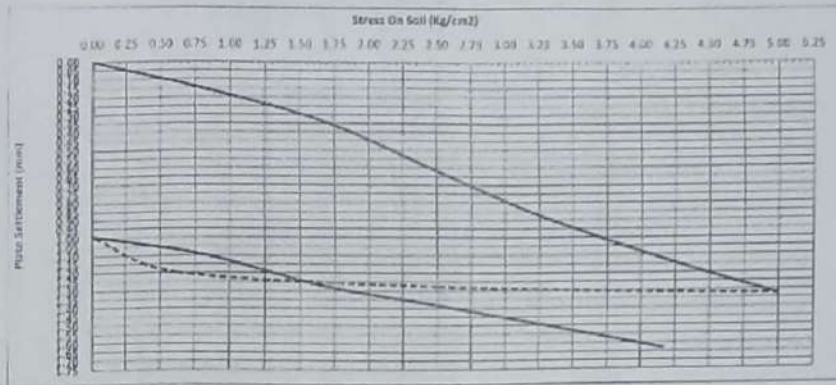
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Company Name : Orange contraction.  
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
 Test Date : 27/11/2023  
 report date : 28/11/2023  
 Location : Station 347+050  
 Test No : 01

## Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	2345.58	4719.4	7065	9410.6	11784	14130
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.16	0.34	0.62	0.90	1.13	1.33

UnLoading (1)	1	2	3	4
Stage(Kg)	14130	7065	1766	0
Stress (Kg/cm2)	5.00	2.50	0.625	0.01
Settlement (mm)	1.33	1.28	1.20	0.99

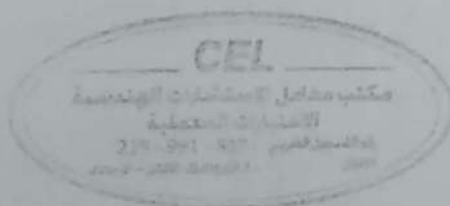
D (mm) =	300	S1 (mm) =	0.30	S2(mm) =	0.94	ΔS =	0.64
Ev1 (MPa) =	(0.75*D*Δσ/ΔS)						
	69						

Ev2/Ev1 =	2.2
-----------	-----

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	2345.58	4719.4	7065	9410.6	11784
Stress (Kg/cm2)	0.01	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	0.99	1.10	1.27	1.38	1.50	1.63

D (mm) =	300	S1 (mm) =	1.24	S2(mm) =	1.53	ΔS =	0.29
Ev2 (MPa) =	(0.75*D*Δσ/ΔS)						
	153						

Ev1 = Modulus of deformation during the loading stage.  
 Ev2 = Modulus of deformation during the Reloading stage.  
 D = Plate diameter (mm)  
 x0 = The difference between 0.3 and 0.7 from the maximum loading (mm)  
 Δx = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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# MATERIAL INSPECTION REQUEST



الهيئة العامة  
للطرق والكباري  
(GARB)



Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign	Date/ Serial Number	Time			
	Eng: Abdullah Kamal	عبدالله كمال					
Received by GARB CONSULTANT	Eng. Saied Saif	MIR	C1	C2	C3	DD	MM
			346	EW	CS	22	10
						YY	HH
						23	11
						MM	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials		FILTER LAYER			
Location to be Used		From St. (346+640) To St. (346+820)			
MAR Approval No		MAR (009) , MAR (010) , MAR (011)		Date	20-09-2023 20-09-2023 -----
UIR Approval No		IR (FT-005)			12-10-2023
Supplier Name		AL-Salam & AL-Howayeg			
Test Requirement		P.L.T (DIN 18134)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.	
Reference Photos		No	Other		
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	2	24-10-2023	
2					
3					
4					
Comments by : Saied Saif (K.K)			Comments by: Eng. Alaa Abd-Allatif (ER)		
1- تم إختبار القطاع . Plate load test 2- تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .			1-P.L.T was carried-out By (CEL). 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng: Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Chaloud Zaki		A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	Alaa Abd-Allatif	25-10-2023	Awc

\* Designer

\*\* Alignment / Bridges: Culvert Only



**Company** : Orange contraction.

**Project** : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority

**Sector (5) - Borg Al Arab to El Hamam.**

**Subject** : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements

**Test Location** : Station (346+640 to 346+820)

**Test Date** : 22/10/2023

**Report Date** : 24/10/2023

**Type of soil** : fill filter

**Test level** : ----

**Report No.** : 006:007

Dear Gentleman,

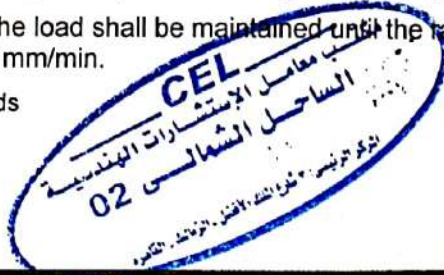
According to the above mentioned subject the test performed as follows:-

### Apparatus

1. Loading plates consists of plate 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

### Test Procedure

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plate 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 5 kg/cm<sup>2</sup>
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2<sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads



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## Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
  - location of test site - Dimension of loading plate
  - Measuring device used - Type of soil
  - Type of Bedding material below the plate -Weathering condition
  - Time and date of measurements - Unusual observation made during test
  - Dial gauge reading and corresponding normal stress - Loading-settlement curve
  - Description of the soil condition below the plate after testing

## Report

- Type of Soil : fill filter

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	300
- date of measurement	22/10/2023
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

## Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	Ev2/ Ev1 Ratio
		Ev1 (MPa)	Ev2 (MPa)	
1	346+700	71	180	2.5
2	346+800	208	208	3.1

Signature

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الساحل الشمالي 02  
الدكتور المهندس: شرف الدين الأفطح: الزمالة: القاهرة



Company Name : Orange contraction.  
 Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
 Test Date : 22/10/2023  
 report date : 24/10/2023  
 Location : Station 346+700  
 Test No. : 06

**Nonrepetitive Static Plate Load Tests of Soils**  
**DIN 18134**

Data sheet

**Loading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.82	0.18	19.78	0.22	19.68	0.32	0.24
2	1.67	19.59	0.41	19.60	0.40	19.33	0.67	0.49
3	2.50	19.40	0.60	19.38	0.62	18.98	1.02	0.75
4	3.33	19.11	0.89	19.08	0.92	18.76	1.24	1.02
5	4.17	18.86	1.14	18.82	1.18	18.53	1.47	1.26
6	5.00	18.60	1.40	18.58	1.42	18.28	1.72	1.51

**Unloading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.60	1.40	18.58	1.42	18.28	1.72	1.51
2	2.50	18.66	1.34	18.63	1.37	18.35	1.65	1.45
3	1.250	18.75	1.25	18.72	1.28	18.48	1.52	1.35
4	0.05	19.06	0.94	18.97	1.03	18.87	1.13	1.03

**Loading Stage (2)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	18.95	1.05	18.86	1.14	18.80	1.20	1.13
1	1.67	18.86	1.14	18.75	1.25	18.65	1.35	1.25
2	2.50	18.77	1.23	18.67	1.33	18.48	1.52	1.36
3	3.33	18.65	1.35	18.60	1.40	18.39	1.61	1.45
4	4.17	18.56	1.44	18.52	1.48	18.31	1.69	1.54



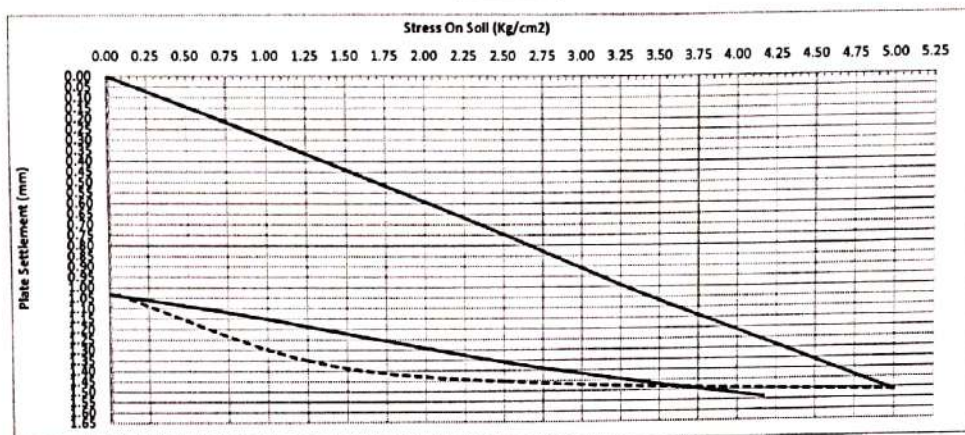


# CEL

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Company Name : Orange contraction.  
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
Test Date : 22/10/2023  
report date : 24/10/2023  
Location : Station 346+700  
Test No. : 06

## Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	589	1178	1767	2357	2946	3535
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.24	0.49	0.75	1.02	1.26	1.51

UnLoading (1)	1	2	3	4
Stage(Kg)	1767	883	35	0
Stress (Kg/cm2)	5.00	2.50	1.250	0.05
Settlement (mm)	1.51	1.45	1.35	1.03

D (mm) = 300	S1 (mm)= 0.44	S2(mm)= 1.06	ΔS = 0.62
Ev1 (MPa) = $(0.75 \cdot D \cdot \Delta\sigma) / \Delta S$	71		

Ev2/Ev1 =	2.5
-----------	-----

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2946
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	1.03	1.13	1.25	1.36	1.45	1.54

D (mm) = 300	S1 (mm)= 1.22	S2(mm)= 1.47	ΔS = 0.25
Ev2 (MPa) = $(0.75 \cdot D \cdot \Delta\sigma) / \Delta S$	179		

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

$\Delta\sigma$  = The difference between 0.3 and 0.7 from the maximum loading (smax) (kg/cm<sup>2</sup>)

$\Delta s$  = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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# CEL

**Consulting Engineering Bureau & Laboratories**  
مكتب معامل الإستشارات الهندسية

Company Name : Orange contraction.  
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
Test Date : 22/10/2023  
report date : 24/10/2023  
Location : Station 346+800  
Test No. : 07

## Nonrepetitive Static Plate Load Tests of Soils DIN 18134

Data sheet

### Loading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.75	0.25	19.81	0.19	19.68	0.32	0.25
2	1.67	19.32	0.68	19.60	0.40	19.37	0.63	0.57
3	2.50	19.00	1.00	19.36	0.64	19.01	0.99	0.88
4	3.33	18.80	1.20	19.05	0.95	18.78	1.22	1.12
5	4.17	18.66	1.34	18.72	1.28	18.59	1.41	1.34
6	5.00	18.43	1.57	18.52	1.48	18.40	1.60	1.55

### Unloading Stage (1)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.43	1.57	18.52	1.48	18.40	1.60	1.55
2	2.50	18.52	1.48	18.61	1.39	18.48	1.52	1.46
3	1.250	18.65	1.35	18.75	1.25	18.55	1.45	1.35
4	0.05	18.92	1.08	19.05	0.95	18.84	1.16	1.06

### Loading Stage (2)

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	18.83	1.17	18.94	1.06	18.77	1.23	1.15
1	1.67	18.74	1.26	18.82	1.18	18.70	1.30	1.25
2	2.50	18.63	1.37	18.75	1.25	18.62	1.38	1.33
3	3.33	18.55	1.45	18.66	1.34	18.53	1.47	1.42
4	4.17	18.46	1.54	18.54	1.46	18.43	1.57	1.52



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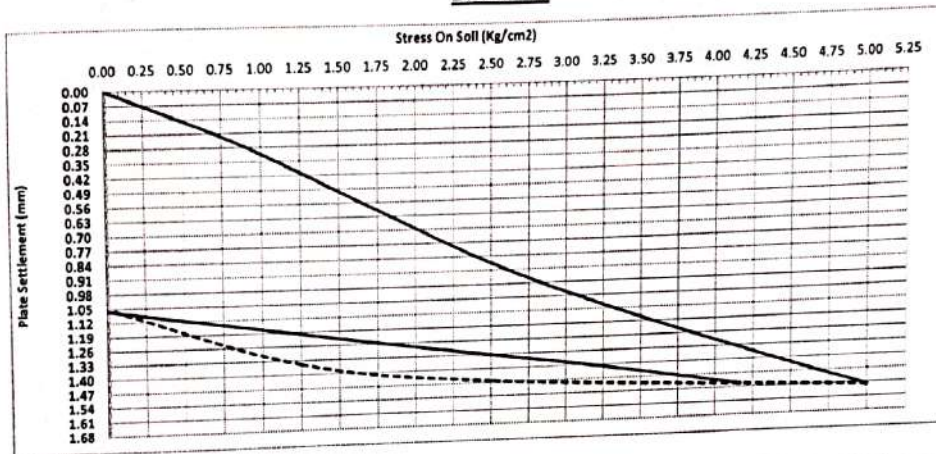
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Company Name  
Project  
Test Date  
report date  
Location  
Test No.

: Orange contraction.  
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
: 22/10/2023  
: 24/10/2023  
: Station 346+800  
: 07

#### Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	589	1178	1767	2357	2946	3535
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.25	0.57	0.88	1.12	1.34	1.55

UnLoading (1)	1	2	3	4
Stage(Kg)	1767	883	35	0
Stress (Kg/cm2)	5.00	2.50	1.250	0.05
Settlement (mm)	1.55	1.46	1.35	1.06

D (mm) =	300	S1 (mm)=	0.51	S2(mm)=	1.17	ΔS =	0.66
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS						
	67						

Ev2/Ev1 =	3.1
-----------	-----

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2946
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	1.06	1.15	1.25	1.33	1.42	1.52

D (mm) =	300	S1 (mm)=	1.23	S2(mm)=	1.44	ΔS =	0.21
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS						
	208						

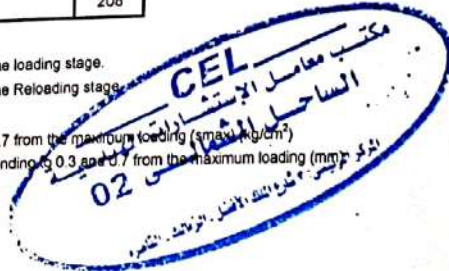
Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (smallest Kg/cm²)

Δs = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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# MATERIAL INSPECTION REQUEST



الهيئة العامة  
للطرق والكباري  
(GARB)



Contractor Company	Orange Company For Import & Export and General Contracting			Designer Company				(KK) Engineering Consulting Office			
Issued by Contractor	Name	Sign		Date/ Serial Number				Time			
	Eng: Abdullah Kamal	عبدالله كامال		21-10-2023 M.I.R-004-1				11:00 AM			
Received by GARB CONSULTANT	Eng. Saied Saif	Phaled Zaki	MIR	C1	C2	C3	DD	MM	YY	HH	MM
				346	EW	CS	22	10	23	11	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE-2	Work Activity		
CODE-3	Sub Element of Activity		

Description of Materials		FILTER LAYER			
Location to be Used		From St. (346+360) To St. (346+460)			
MAR Approval No		MAR (008) , MAR (009)		Date	20-09-2023
UIR Approval No		IR (FT-004)			20-09-2023
Supplier Name		AL-Salam & AL-Howayeg			
Test Requirement		P.L.T (DIN 18134)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.	
Reference Photos		No	Other		
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	1	24-10-2023	
2					
3					
4					
Comments by : Saied Saif (K.K)			Comments by: Eng. Alaa Abd-Allatif (ER)		
1- تم اختبار القطاع Plate load test 2- تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .			1-P.L.T was carried-out By (CEL). 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.		
<b>APPROVAL STATUS</b>					
Organisation	Name	Sign	Date	A-AWC-R	
Contractor	Eng: Abdullah Kamal	عبدالله كامال		A	
QA/QC *	Eng. Saied Saif	Phaled Zaki		A	
GARB**	Eng. Margret Magdy				
Employers Representative	Eng. Alaa Abd-Allatif		23-10-2023	Awc	

\* Designer

\*\* Alignment / Bridges: Culvert Only



# MATERIAL INSPECTION REQUEST



Contractor Company	Orange Company For Import & Export and General Contracting		Designer Company	(KK) Engineering Consulting Office							
Issued by Contractor	Name	Sign	Date/ Serial Number	Time							
	Eng: Abdullah Kamal	عبدالله كمال	21-10-2023 M.I.R-006-1	11:00 AM							
Received by GARB CONSULTANT	Eng. Saied Saif	Khaled Zaki	MIR	C1	C2	C3	DD	MM	YY	HH	MM
				346	EW	CS	22	10	23	11	00

CODE-1	S1 to S21 Station Reference	D1 to S3 Depot Reference	Kp XXX Note For Kilometer point only Start Km is used
CODE - 2	Work Activity		
CODE - 3	Sub Element of Activity		

Description of Materials	FILTER LAYER				
Location to be Used	From St. (346+460) To St. (346+480)				
MAR Approval No	MAR (011) , MAR (012)	Date	16-10-2023		
UIR Approval No	IR (FT-006)				
Supplier Name	AL-Salam & AL-Howayeg				
Test Requirement	P.L.T (DIN 18134)	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP.		
Reference Photos	No	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	Plate load test	NUMBER	1	24-10-2023	
2					
3					
4					
Comments by : Saied Saif (K.K)		Comments by: Eng. Alaa Abd-Allatif (ER)			
1- تم إختبار القطاع Plate load test 2- تم تحقيق النتائج المطلوبة طبقاً لمواصفات المشروع .		1-P.L.T was carried-out By (CEL). 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.			

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng: Abdullah Kamal	عبدالله كمال		A
QA/QC *	Eng. Saied Saif	Khaled Zaki		A
GARB**	Eng. Margret Magdy			
Employers Representative	Eng. Alaa Abd-Allatif	Alaa Abd-Allatif	23-10-2023	Awc

\* Designer

\*\* Alignment / Bridges: Culvert Only



**Company** : Orange contraction.

**Project** : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority  
**Sector (5) - Borg Al Arab to El Hamam.**  
**Subject** : Determine the deformation and strength characteristics of soil by the plate loading test according specifications DIN 18134:2012-04 and project requirements  
**Test Location** : Station (346+360 to 346+480)  
**Test Date** : 22/10/2023  
**Repot Date** : 24/10/2023  
**Type of soil** : fill filter  
**Test level** : ----  
**Report No.** : 004:005

**Dear Gentleman,**

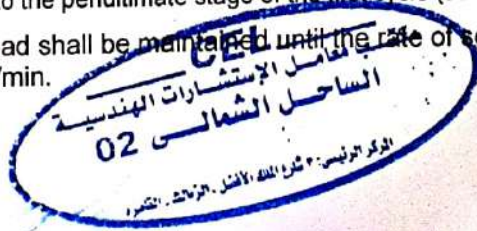
According to the above mentioned subject the test performed as follows:-

**Apparatus**

1. Loading plates consists of plate 300 mm diameter
2. The thickness of plates 30 mm
3. Dial gauges with accuracy 0.01 mm to measuring the settlement
4. Steel straightedges with magnetic supports to fixed the dial gauges
5. Hydraulic jack with pump to transfer reactive loads to the loading plates
6. Dial indicator measuring device with scale capacity 700 Bar (Enerbac)
7. Reaction loading system by roller compactor with weight approximately 15 ton
8. Calibration certificates are attached

**Test Procedure**

1. Clean the ground on test area to the required level with undisturbed soil
2. Install loading plate 300 mm diameter, hydraulic jack and 3 dial gauges
3. Prior to starting the test applied preloading about 30 seconds.
4. The strain gauge and the dial gauge shall be set to zero
5. For a 600 mm loading plate, the limit values are 5 kg/cm<sup>2</sup>
6. The load shall be applied in six stages, in approximately equal increments, until the required maximum normal stress is reached.
7. Each change in load (from stage to stage) shall be completed within one minute
8. The load shall be released in 3 stages, to 50 % , 25 % , and approximately 2 % of the maximum load.
9. Following unloading, a further (2<sup>nd</sup>) loading cycle shall be carried out, in which, however, the load is to be increased only to the penultimate stage of the first cycle (so that the full load is not reached).
10. At each stage the load shall be maintained until the rate of settlement of the plate becomes less than 0.02 mm/min.
11. Remove the loads





## Report

1. Evaluation and representation of results
2. Load Settlement curve
3. The test report content the following:-
  - location of test site - Dimension of loading plate
  - Measuring device used - Type of soil
  - Type of Bedding material below the plate -Weathering condition
  - Time and date of measurements - Unusual observation made during test
  - Dial gauge reading and corresponding normal stress - Loading-settlement curve
  - Description of the soil condition below the plate after testing

## Report

- Type of Soil : fill filter

Item	Descriptions
- Type of bedding material below the plate	Natural Soil
- Weather condition	Partly Sunny
- Plate Diameter (mm)	300
- date of measurement	22/10/2023
- Unusual observation made during test	NO
- Description of the soil conditions below the plate after testing	No deformation

## Evaluation and representation of results

Test No.	Station	First Cycle	Second Cycle	Ev2/ Ev1 Ratio
		Ev1 (MPa)	Ev2 (MPa)	
1	346+400	67	173	2.6
2	346+420	68	173	2.5

Signature



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Company Name : Orange contraction.  
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
Test Date : 22/10/2023  
report date : 24/10/2023  
Location : Station 346+400  
Test No. : 04

**Nonrepetitive Static Plate Load Tests of Soils**  
**DIN 18134**

**Data sheet**

**Loading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.79	0.21	19.76	0.24	19.72	0.28	0.24
2	1.67	19.58	0.42	19.60	0.40	19.40	0.60	0.47
3	2.50	19.34	0.66	19.40	0.60	19.13	0.87	0.71
4	3.33	19.00	1.00	19.03	0.97	18.85	1.15	1.04
5	4.17	18.75	1.25	18.78	1.22	18.60	1.40	1.29
6	5.00	18.50	1.50	18.46	1.54	18.37	1.63	1.56

**Unloading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.50	1.50	18.46	1.54	18.37	1.63	1.56
2	2.50	18.62	1.38	18.54	1.46	18.43	1.57	1.47
3	1.250	18.80	1.20	18.72	1.28	18.56	1.44	1.31
4	0.05	19.25	0.75	19.31	0.69	18.93	1.07	0.84

**Loading Stage (2)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	19.13	0.87	19.20	0.80	18.85	1.15	0.94
1	1.67	19.00	1.00	19.11	0.89	18.77	1.23	1.04
2	2.50	18.88	1.12	19.00	1.00	18.68	1.32	1.15
3	3.33	18.78	1.22	18.85	1.15	18.61	1.39	1.25
4	4.17	18.69	1.31	18.73	1.27	18.49	1.51	1.36



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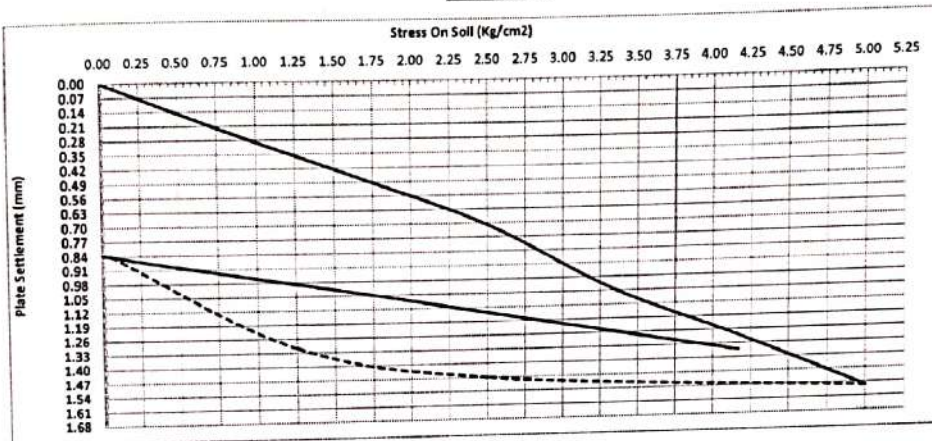
# CEL

**Consulting Engineering Bureau & Laboratories**  
مكتب معامل الاستشارات الهندسية

Company Name  
Project  
Test Date  
report date  
Location  
Test No.

: Orange contraction.  
: Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
: 22/10/2023  
: 24/10/2023  
: Station 346+400  
: 04

## Nonrepetitive Static Plate Load Tests of Soils DIN 18134



Loading (1)	0	1	2	3	4	5	6
Stage(Kg)	0	589	1178	1767	2357	2946	3535
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.24	0.47	0.71	1.04	1.29	1.56

UnLoading (1)	1	2	3	4
Stage(Kg)	1767	883	35	0
Stress (Kg/cm2)	5.00	2.50	1.250	0.05
Settlement (mm)	1.56	1.47	1.31	0.84

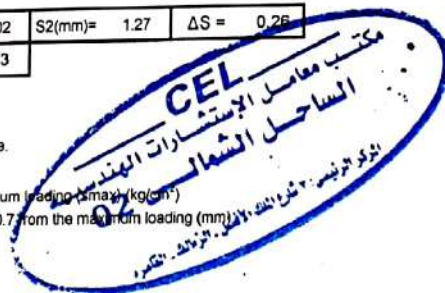
D (mm) =	300	S1 (mm)=	0.43	S2(mm)=	1.09	ΔS =	0.66
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS		67				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2946
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	0.84	0.94	1.04	1.15	1.25	1.36

Ev2/Ev1 = 2.6

D (mm) =	300	S1 (mm)=	1.02	S2(mm)=	1.27	ΔS =	0.26
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS		173				

Ev1 = Modulus of deformation during the loading stage.  
Ev2 = Modulus of deformation during the Reloading stage.  
D = Plate diameter (mm)  
Δσ = The difference between 0.3 and 0.7 from the maximum loading (kg/cm²)  
Δs = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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الممسوحة ضوئياً بـ CamScanner

Company Name : Orange contraction.  
Project : Electric Express Train, Al Ain Sokhna to Marsa Matrouh Priority Sector (5) - Borg Al Arab to El Hamam.  
Test Date : 22/10/2023  
report date : 24/10/2023  
Location : Station 346+420  
Test No. : 05

**Nonrepetitive Static Plate Load Tests of Soils**  
**DIN 18134**

Data sheet

**Loading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.00	20.00	0.00	20.00	0.00	20.00	0.00	0.00
1	0.83	19.75	0.25	19.81	0.19	19.77	0.23	0.22
2	1.67	19.36	0.64	19.58	0.42	19.40	0.60	0.55
3	2.50	19.07	0.93	19.29	0.71	19.18	0.82	0.82
4	3.33	18.82	1.18	18.93	1.07	18.95	1.05	1.10
5	4.17	18.59	1.41	18.75	1.25	18.76	1.24	1.30
6	5.00	18.35	1.65	18.53	1.47	18.56	1.44	1.52

**Unloading Stage (1)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
1	5.00	18.35	1.65	18.53	1.47	18.56	1.44	1.52
2	2.50	18.43	1.57	18.65	1.35	18.63	1.37	1.43
3	1.250	18.57	1.43	18.73	1.27	18.77	1.23	1.31
4	0.05	18.93	1.07	19.10	0.90	19.13	0.87	0.95

**Loading Stage (2)**

Loading	Stress Kg/cm2	Dial 1	Settlement mm	Dial 2	Settlement mm	Dial 3	Settlement mm	Average
0	0.83	18.83	1.17	18.98	1.02	19.00	1.00	1.06
1	1.67	18.70	1.30	18.90	1.10	18.89	1.11	1.17
2	2.50	18.61	1.39	18.78	1.22	18.80	1.20	1.27
3	3.33	18.48	1.52	18.66	1.34	18.71	1.29	1.38
4	4.17	18.39	1.61	18.53	1.47	18.60	1.40	1.49



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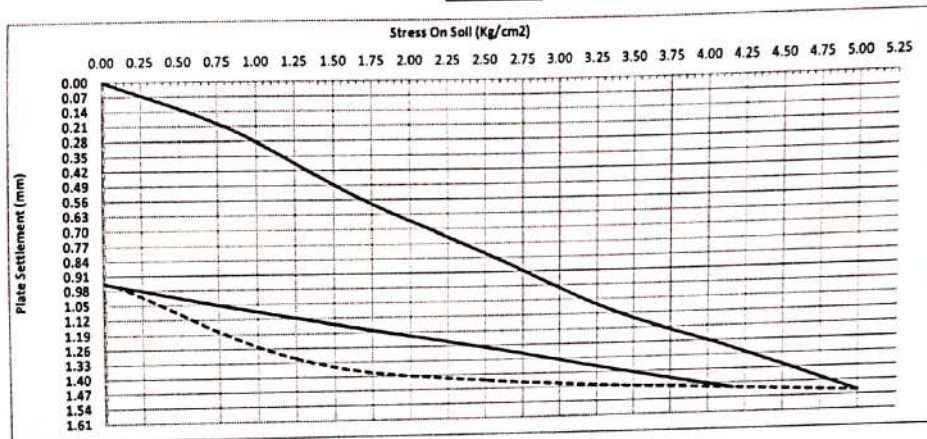
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Company Name  
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#### Nonrepetitive Static Plate Load Tests of Soils DIN 18134



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Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17	5.00
Settlement (mm)	0.00	0.22	0.55	0.82	1.10	1.30	1.52

UnLoading (1)	1	2	3	4
Stage(Kg)	1767	883	35	0
Stress (Kg/cm2)	5.00	2.50	1.250	0.05
Settlement (mm)	1.52	1.43	1.31	0.95

D (mm) =	300	S1 (mm)=	0.49	S2(mm)=	1.14	ΔS =	0.65
Ev1 (MPa) =	(0.75*D*Δσ)/ΔS		68				

Loading (2)	0	1	2	3	4	5
Stage(Kg)	0	589	1178	1767	2357	2946
Stress (Kg/cm2)	0.00	0.83	1.67	2.50	3.33	4.17
Settlement (mm)	0.95	1.06	1.17	1.27	1.38	1.49

Ev2/Ev1 =	2.5
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D (mm) =	300	S1 (mm)=	1.15	S2(mm)=	1.40	ΔS =	0.26
Ev2 (MPa) =	(0.75*D*Δσ)/ΔS		172				

Ev1 = Modulus of deformation during the loading stage.

Ev2 = Modulus of deformation during the Reloading stage.

D = Plate diameter (mm)

Δσ = The difference between 0.3 and 0.7 from the maximum loading (smax) (kg/cm2)

Δs = Difference in settlements corresponding to 0.3 and 0.7 from the maximum loading (mm)



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