

رقم البند و بيانه : (2-5) بالمتر المكعب أعمال توريد وفرش طبقة أساس من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات وأقصى حجم للحبيبات ما بين 31.5 مم الي 40 مم والايزيد نسبة المار من منخل 200 عن 5% والتدرج الوارد بالاشترطات الخاصة بالشروع لا تقل نسبة تحمل كاليفورنيا عن 80 % والا يقل معامل المرونة (Ev2) من تجربة لوح التحميل 120 ميجاباسكال والايزيد نسبة الفاقد بجهاز لوس النجلوس عن 30 % والا يزايد الامتصاص عن 15 % ويتم فردها علي طبقتين باستخدام الات التسوية الحديثة علي ان لا يزيد سمك الطبقة بعد تمام الدمك عن 20 سم و رشها بالمياة الاصولية للوصول الي نسبة الرطوبة المطلوبة والدمك الجيد بالهراسات للوصول الي اقصى كثافة جافة قصوي (لا يقل عن 100%) من الكثافة المعملية و الفنة تشمل اجراء التجارب المعملية والحقلية ويتم تنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا للمواصفات الفنية للمشروع وتقرير الاستشاري وتعليمات المهندس المشرف . مسافة النقل لا تقل 20 كم . يتم احتساب متلاوة 1.2 جنيه لكل 1 كم بالزيادة او النقصان , السعر يشمل اناوة المحاجر السميكة للشركة الوطنية وعلى الشركة المنفذة تقديم ما يثبت تسديد الاتاوة للشركة الوطنية.

كمية المقايضة (م3):	5,855.00	مقدار العمل السابق (م3):	0.00
---------------------	----------	--------------------------	------

لاجمالي الكسي (3م)
مهندس الاستشاري
مكتب XYZ
م/ محمد خليل
خبر الخليج
غرب النيل

مهندس الاستشاري
مكتب XYZ
م/ محمد خليل

م
شركة الهندسة والبناء
عبد السلام الفقي وشركاه



قائمة كمية الأعمال الواردة بالمستخلص الجاري-2- إتجاه فوكة

رقم البند و بيانه : (2-5) بالمتر المكعب اعمال توريد وفرش طبقة تأسيس (Subballast) من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات علاوة نقل السن لمسافة 103 كم = 103 (المسافة الكلية من المحجر للموقع) - 20 كم (المحمل على البند) * 1.20 = 1.20 * 83 = 99.60 جنيهية

تسقيس : شركة أبناء عبدالسلام الشقي للمقاولات والاستشارات الهندسية

0.00

مقدار العمل السابق (م3) :

5,855.00

كمية المقايضة (م3) :

البند	طلب الفحص	المسافة الكيلومترية		الطول	مساحة المقطع	الكمية
		من الكم	الى الكم			
1	1	385+007.5	385+100	92.5	2.99	276.575
2	2	385+100	385+300	200	2.99	598.000
3	3	385+860	386+007.5	147.5	2.99	441.025
4	4	385+300	385+500	200	2.99	598.000
5	5	385+007.5	385+100	92.5	2.86	264.550
6	6	385+100	385+300	200	2.87	574.000
7	7	385+860	386+007.5	147.5	2.86	421.850
8	8	385+500	385+660	160	2.99	478.400
9	9	385+660	385+860	200	2.99	598.000
10	10	385+300	385+500	200	2.86	572.000
11	11	385+660	385+860	200	2.87	574.000
12	12	385+500	385+660	160	2.86	457.600
5,854.00						

الاجمالي (م3)

مهندس الهيئة

م / مارجيت مجدي



مهندس الاستشاري

مكتب XYZ

م / محمد خليل



مهندس الشركة

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل

م / محمد خليل



قائمة كمية الأعمال الواردة بالمستخلص الجاري-2- إتجاه فوكة

رقم البند و بيانه : (2-5) بالمتر المكعب اتعمال توريد وفرش طبقة تأسيس (Subballast) من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات علاوة كارتة تحصيل رسوم وموازين الشركة الوطنية 25 جنية للمتر

تسقيذ : شركة ابناء عبدالسلام الفقي للمقاولات والاستشارات الهندسية

كمية المقايضة (م3) : 5,855.00 مقدار العمل السابق (م3) : 0.00

الكمية	مساحة المقطع	الطول	المسافة الكيلومترية		طلب الفحص	البند
			الى الكم	من الكم		
276.575	2.99	92.5	385+100	385+007.5	1	بالمتر المكعب اتعمال توريد وفرش طبقة تأسيس (prepared Subgrade) من الاحجار الصلبة المتدرجة ناتج تكسير الكسارات والمطابقة للمواصفات وأقصى حجم للحبيبات 100 مم والا تزيد نسبة المار من منخل 200 عن 12 % و التدرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحمل كاليفورنيا عن 25 % والا تزيد نسبة الفاقد بجهاز لوس انجلوس عن 30 % والا يزيد الامتصاص عن 15% والا يقل معامل المرونة (Ev2) من تجربة لوح التحميل عن 80 ميغاباسكال و يتم فردها علي طبقتين باستخدام الات التسوية الحديثة علي ان لا يزيد سمك الطبقة بعد تمام الدمك عن 25 سم و رشها بالنميا الاصولية للوصول الي نسبة الرطوبة المطلوبة والدمك الجيد للهراسات للوصول الي اقصى كثافة جافة قصوي (لا تقل عن 95 %) من الكثافة المعملية والفئة تشمل اجراء التجارب المعملية والحقلية ويتم التنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتملاته طبقا للمواصفات الفنية للمشروع وتقرير الاستشاري وتعليقات المهندس المشرف - مسافة النقل لا تقل 20 كم - يتم احتساب علاوة 1.20 جنية لكل 1 كم بالزيادة او النقصان - السعر يشمل القيمة المحجورية.
598.000	2.99	200	385+300	385+100	2	
441.025	2.99	147.5	386+007.5	385+860	3	
598.000	2.99	200	385+500	385+300	4	
264.550	2.86	92.5	385+100	385+007.5	5	
574.000	2.87	200	385+300	385+100	6	
421.850	2.86	147.5	386+007.5	385+860	7	
478.400	2.99	160	385+660	385+500	8	
598.000	2.99	200	385+860	385+660	9	
572.000	2.86	200	385+500	385+300	10	
574.000	2.87	200	385+860	385+660	11	
457.600	2.86	160	385+660	385+500	12	
5,854.00			الاجمالي الكلي (م3)			

مهندس الهيئة

م / مارجيت مجدي



مهندس الاستشاري

مكتب XYZ

م / محمد خليل

مهندس الشركة

م / محمد عبدالسلام الفقي

مشروع القطر الكهربائي فائق السرعة قطاع (برج العرب - العبد)

المقايمة لبيود الاعمال تنفيذ شركة عبدالسلام الفقي

القطاع من المحطة ٣٨٥+٠٠٠ الى ٣٨٦+٠٠٠ بطول ١ كم اتجاه لوكمة رقم العقد (٨٣٤/٢٠٢٢/٢٠٢٣)

رقم البند	بيان الأعمال	الوحدة	الكمية	سعر الفقة	الإجمالي
١٠٠	أعمال الردم				
١٠٠	بالمتر المكعب أعمال تحميل وتوريد ونقل التربة صالحة للردم مطابقة للمواصفات وتشغيلها باستخدام آلات التسوية بسعة لا يزيد عن ٥٠ سم حتى متسوب ١٠ متر وبسك لا يزيد عن ٢٥ سم لاستكمال المنسوب التصميمي لتشكيل الجسر والانتفاف (تسوية تعمل كإيقونيا لا تقل عن ١٠%) و رشها بالمياد الاصولية للوصول الى نسبة الرطوبة المطلوبة والتمك الجيد بالهراسات للوصول الى النسب المثابة جافة (٩٥% من المثابة الجافة القصوى) ويتم تنفيذ طبقا للمنسوب التصميمية والمطامعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف.	م ^٣	17110.00	85.00	1454350.00
١٠٠	في حلة طلب جهاز الإشراف زيادة نسبة التدمك عن ٩٥% بحسب زيادة ١ جنيه على زيادة نسبة التدمك لكل ١%.				
١٠٠	مسافة النقل حتى ١ كم و يتم احتساب علاوة ١,١ جنيه لكل كم بالزيادة أو النقصان.				
١٠٠	الغباريات ونقل لموقع العمل حتى مسافة ٢ كم.				
١٠٠	علاوة مسافة نقل للتربة لمسافة ١٢٢ كم = ١,١*١٢٢ = ١٣٦,٢ جنيه	م ^٣	13688.00	168.00	2299584.00
١٠٠	علاوة مسافة نقل للرمل لمسافة ٧٥ كم = ١,١*٧٥ = ٨٢,٥ جنيه	م ^٣	3422.00	102.20	349728.40
١٠٠	علاوة تحميل رسوم الكارثة والموازين طبقا للامعة الشركة الوطنية	م ^٣	17110.00	13.00	222430.00
١٠٠	طبقات الاساس				
١٠٠	بالمتر المكعب أعمال توريد وفرش طبقة تلميس (prepared Subgrade) من الاحجار الصلبة المترجعة ناتج تكسير الكسرات والمطابقة للمواصفات والنسب حجم التحبيبات ١٠٠ مم والا تزيد نسبة التدمك من مثقل ١٠٠ عن ١٢% والتخرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحميل كاتيلونيا عن ٢٥% والا تزيد نسبة التدمك بجهاز لوس الجثوس عن ٣٠% والا يزيد الامتصاص عن ١٥% والا يقل معامل المرونة (Ev2) من تجربة لوح التمهيد عن ٨٠ ميجاباسكال ويتم فردها على طبقتين باستخدام آلات التسوية الحديثة على ان لا يزيد سمك الطبقة بعد تمام التدمك عن ٢٥ سم و رشها بالمياد الاصولية للوصول الى نسبة الرطوبة المطلوبة والتمك الجيد بالهراسات للوصول الى النسب المثابة جافة (٩٥% من المثابة الجافة القصوى) ويتم تنفيذ طبقا للمنسوب التصميمية والمطامعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف ومسافة النقل لا تقل عن ١٠ كم، يتم احتساب علاوة ١,٢ جنيه لكل ١ كم بالزيادة أو النقصان، يتم صرف قيمة المواد المعجربة في حلة تقديم ما يثبت تسديد الاتاة للشركة الوطنية.	م ^٣	8037.00	278.00	2234286.00
١٠٠	علاوة مسافة النقل ١٠٢ كم = ١,٢*١٠٢ = ١٢٢,٤ جنيه	م ^٣	8037.00	99.60	800485.20
١٠٠	علاوة تحميل رسوم الكارثة والموازين طبقا للامعة الشركة الوطنية	م ^٣	8037.00	25.00	200925.00
١٠٠	بالمتر المكعب أعمال توريد وفرش طبقة اسس من الاحجار الصلبة المترجعة ناتج تكسير الكسرات والمطابقة للمواصفات والنسب حجم التحبيبات ما بين ٣١,٥ مم الى ١٠ مم والا يزيد نسبة التدمك من مثقل ١٠٠ عن ١٥% والتخرج الوارد بالاشتراطات الخاصة بالمشروع لا تقل نسبة تحميل كاتيلونيا عن ٨٠% والا يقل معامل المرونة (Ev2) من تجربة لوح التمهيد عن ١١٠ ميجاباسكال والا يزيد نسبة التدمك بجهاز لوس الجثوس عن ٣٠% والا يزيد الامتصاص عن ١٥% ويتم فردها على طبقتين باستخدام آلات التسوية الحديثة على ان لا يزيد سمك الطبقة بعد تمام التدمك عن ٢٥ سم و رشها بالمياد الاصولية للوصول الى نسبة الرطوبة المطلوبة والتمك الجيد بالهراسات للوصول الى النسب المثابة جافة (٩٥% من المثابة الجافة القصوى) ويتم تنفيذ طبقا للمنسوب التصميمية والمطامعات العرضية النموذجية والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لاصول الصناعة ومواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف ومسافة النقل لا تقل عن ١٠ كم، يتم احتساب علاوة ١,٢ جنيه لكل ١ كم بالزيادة أو النقصان، يتم صرف قيمة المواد المعجربة في حلة تقديم ما يثبت تسديد الاتاة للشركة الوطنية.	م ^٣	5855.00	298.00	1744790.00
١٠٠	علاوة مسافة النقل ١٠٢ كم = ١,٢*١٠٢ = ١٢٢,٤ جنيه	م ^٣	5855.00	99.60	583158.00
١٠٠	علاوة تحميل رسوم الكارثة والموازين طبقا للامعة الشركة الوطنية	م ^٣	5855.00	25.00	146375.00
١٠٠	الطبقات الفرشانية				
١٠٠	بالمتر المكعب أعمال توريد وعصب خرسانة عادية سمك ١٥ سم لحماية الانتفاف والعيول الجانبية تتكون من ٨, ٣ م من دولوميت مترجج + ٠,١ م رمل حرس + ٢٥٠ كجم اسمنت بورتلاندي عادي و اضافة fiber reinforcement على ان يكون السن نظيف ومغسول والرمل خالى من الشوائب والطفلة والاملاح والمواد الغريبة والبند يشمل تجهيل واستبدال منسوب التربة الطبيعية اسفل البلاطة للوصول الى المنسوب التصميمية على ان تحلق الخرسانة اجهاد لا يقل عن ٢٥٠ كجم / سم ^٢ وتنظيف السطح وتنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لمواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف.	م ^٣	10045.57	266.00	2672121.62
١٠٠	بالمتر المكعب أعمال توريد وعصب خرسانة عادية لتقدمات العمليات والعيول الجانبية تتكون من ٨, ٣ م من دولوميت مترجج + ٠,١ م رمل حرس والاضافات طبقا لتعليمات الاستشاري (اهرير - سبكا) على ان يكون السن نظيف ومغسول والرمل خالى من الشوائب والطفلة والاملاح والمواد الغريبة مع وضع لوم (بلفاسل) بسك ٢ سم (طبقا لتعليمات الاستشاري) والبند يشمل اصلاح الحفر والشقوق و تمل ما يتروم لتبوء العمل على ان تحلق الخرسانة اجهاد لا يقل عن ٢٥٠ كجم / سم ^٢ و ملء الفواصل بالبيتونيم المعمرل و تنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لمواصفات الهيئة العامة للطرق والكبارى وتعليمات المهندس المشرف.	م ^٣	480.00	2200.00	1056000.00
١١	أعمال التربة المسلحة				
١٠٠	بالمتر المكعب توريد وتركيب طبقة من السجج الصناعي جيوجريد مستورد تتداخل لا يقل عن ١٠% و يتم التنفيذ طبقا لاصول الصناعة والرسومات التفصيلية المعتمدة والبند بجميع مشتلاته طبقا لمواصفات الهيئة العامة للطرق والكبارى				
١٠٠	ات قوة شد ٢٠ ك . نيوتن في الاتجاهين Biaxial	م ^٢		23.00	
١٠٠	ات قوة شد ٣٠ ك . نيوتن في الاتجاهين Biaxial	م ^٢	3669.37	37.00	135766.69
١٠٠					13900000.00

يعتمد
رئيس الإدارة المركزية
منطقة غرب الدلتا
(بالإسكندرية / مرسى مطروح)
عقيد مهلمس /
"هاني محمد محمود طه"

مدير عام مشروعات المنطقة الخاصة
م / محمد حسني قناص

مدير المشروع المالك
م / ماريات مجدي



عبد السلام عبد الحليم الفقي وشركاه
للمقاولات والاستشارات الهندسية

MATERIAL APPROVAL REQUEST



الهيئة العامة
للطرق و الجسور
(GARBB)



Contractor Company	Eng. Abdelsalam ELFely For Contracting		Designer Company	(SPECTRUM) Engineering Consulting Office							
Issued by Contractor	Name	Eng. Mohamed Ismael	Date/Serial Number	24/3/2023							
	Signature		Time	8:00							
Received by GARBB CONSULTANT	Eng. Mazen Essamy		MAR	C1	C2	C3	DD	MM	YY	HH	MM
				385	EW	CS	28	3	23	8	0

CODE 1	S1 to S21	D1 to S3	Kp XXX Note
CODE 2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE 3	Work Activity		
CODE 4	Sub Element of Activity		

Description of Materials	Subballast Layer Total Quantity (5000 m ³)		
Location to be Used	From Station 385+007.5) to Station (386+007.5)		
Sample only	Yes	Materials Type	Fill layers
Supplier Name		Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-43.2) VERSION 2 BY CIVECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No/Yes	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party lab Comibassal is Approved.		1-All tests were selected for Quality test and were carried out by Thrid party lab Comibassal.	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS

Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Ismael			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. 9023			AWC

* Designer

** Alignment/Bridges: Culvert only

11/4



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبدالسلام الفني للمقاولات
Sample : Sub-Ballast
Station : St(385+007.5) to st(386+007.5)
Date of Test : 28/03/2023
QC : 900

II- Sample description:

Crushed stone and sand

III- Required tests

- 1- Grain size analysis and classification
- 2- Modified compaction (Proctor test)
- 3- Liquid limit, plastic limit and plasticity index
- 4- California bearing ratio (CBR)
- 5- Specific gravity (SG)
- 6- Los Angeles test

IV- Results

1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.188
	OMC	5.9%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CB)	CBR ratio	96%
5- Specific gravity (SG), absorption and degradation	S S D	2.520
	Absorption	1.2%
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	27.0%

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For: Dr. M.

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034701191

Email : civdept@comibassal.com

WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt

Tel: 002 033920176 - 002 033931482

Fax : 002 033900476

Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

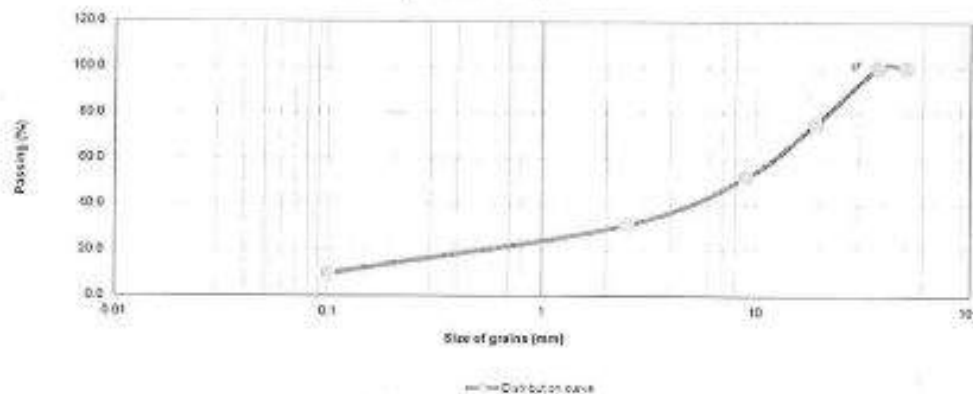
Accredited by : Egypt General Authority for Petroleum under No. 34/28-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
	(gm)				
2	0.00	0.00	0.00	100.0	
1 1/2	0.00	0.00	0.00	100.0	
1	847.00	847.00	8.47	91.5	
3/4	1603.00	2450.00	24.50	75.5	
1/2	1697.00	4147.00	41.47	58.5	
3/8	656.00	4803.00	48.03	52.0	
No.4	1325.00	6128.00	61.28	38.7	
No.10	98.00	98.00	19.60	31.1	
No.200	375.00	375.00	75.00	9.7	

total sample weight= 10000.00 pass No.4= 3872.0 Total fine aggregates weight = 500 gm
pass% 38.7

Size analysis distribution curve



Soil classification: A - 1- a - sample is non plastic



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 3
Volume of mould = 2188 cm³
Weight of mould = 7256 g
G.S = 2.6 g/cm³

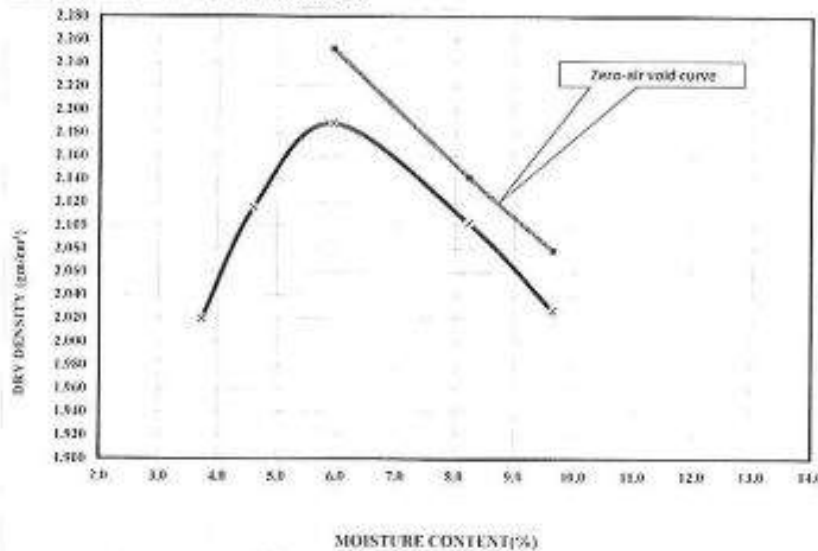
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	11840	12098	12335	12234	12119
Weight of mould (g)	7256	7256	7263	7256	7256
Weight of wet soil (g)	4584	4842	5072	4978	4863
Volume of mould (cm ³)	2188	2188	2188	2188	2188
Wet density (g/cm ³)	2.095	2.213	2.318	2.275	2.223
Dry density (g/cm ³)	2.020	2.116	2.188	2.102	2.027
Zero-air Void curve			2.253	2.142	2.079

B- Moisture Calculations :-

Weight of wet soil (g)	250.0	250.0	250.0	250.0	250.0
Weight of dry soil (g)	241.0	239.0	236.0	231.0	228.0
moisture content %	3.7	4.6	5.9	8.2	9.6

C - Dry density-Moisture relationship:-



M.D.D= 2.188 gm/cm³
O.M.C= 5.9 %



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



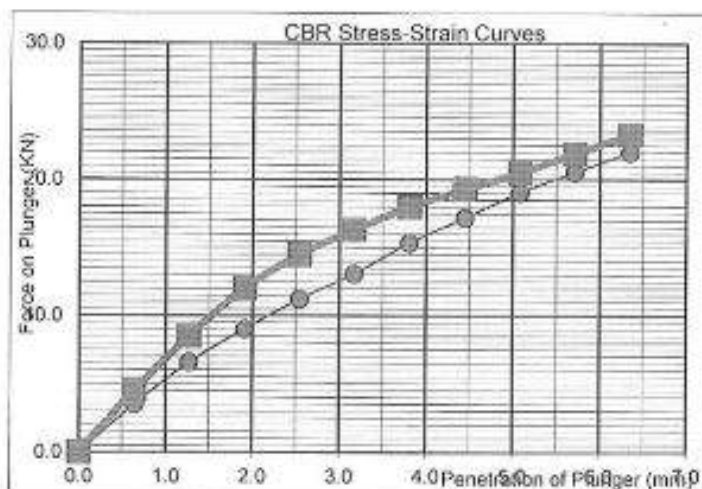
COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56			Swell %			
MOULD NO	1				56		
WT OF MOULD+SOIL	12305			Start	0.00		
WT OF MOULD	7250			End	0.00		
WT OF SOIL	5055			Swell	0.00		
VOLUME OF MOULD	2190						
WET DENSITY	2.308						
		MC before soaking		Weight of Rammer			4.54Kg
TIN NO	1				MDD	Kg/m3	2.188
WT OF WET SOIL+TIN	250.00						
WT OF DRY SOIL+TIN	241				OMC	%	5.9
WT OF WATER	9.00						
WT OF TIN	82			PROVING RING			
WT OF DRY SOIL	159	2.125		Dw/KN			
MOISTURE CONTENT	5.7						
DRY DENSITY	2.185				Capacity (KN)		50
Pen mm	97		Bearing (KN)		CBR		
	56			56		standar	56
0.00	0			FALSE		0.0	
0.64	385			3.5		4.5	
1.27	670			6.6		8.5	
1.91	920			9.0		12.0	
2.54	1145			11.2		14.5	85
3.17	1335			13.1		16.3	
3.81	1567			15.4		18.0	
4.45	1753			17.2		19.3	
5.08	1945			19.1		20.5	96
5.71	2097			20.6		21.9	
6.35	2245			22.0		23.3	



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

ABRASION AND IMPACT " LOS ANGELES " TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	A
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3650
% abrasion By Weight Passing from Sieve No.12	27.0%



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex,Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/28-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2525
Weight of saturated sample in water (C)	1523
Weight of dry sample after heating (A)	2496

Results:-

Saturation surface dry specific gravity = $B / (B - C)$	2.520
Bulk specific gravity = $A / (B - C)$	2.491
Apparent specific gravity = $A / (A - C)$	2.565
Absorption of water = $(B - A) / A * 100$	1.2
Degradation of aggregate = $(2500 - A) / A * 100$	0.2



Kilo 23 Alexandria - Cairo Desert Road - Mergheim
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

Report	:	399 - 2 - Center
Date	:	11/04/2023

CHEMICAL ANALYSIS

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة عيد السلام القوي للمقاولات
Project	:	Electric express train
Sample	:	Sub Ballast
Station	:	ST (385 + 007.5) : (386 + 007.5)
Date of Test	:	28-3-2023

Temperature : 18 °C

Humidity : 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0039%	ASTM D 2974
SULPHATE	0.0025%	
ORGANIG MATTER	NEGATIVE	



LAB DIRECTOR
CH/ Mostafa Asker
for AMANY AMIN

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com

MATERIAL APPROVAL REQUEST



Contractor Company	Eng. Abdelsalam El Feky For Contracting	Designer Company	(SPECTRUM) Engineering Consulting Office
Issued by Contractor	Name Eng. Mohamed Ismael	Date/Serial Number 17/5/2023 QT 56 (2)	Time 8:00
Received by GARAB CONSULTANT	Eng. Mazen Essamy	Signature	Signature
		CL	EW
		CS	18
		MM	5
		YY	23
		HH	8
		MM	0

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

Description of Materials	Subballast Layer Total Quantity (5000 m³)		
Location to be Used	From Station 385+007.5) to Station (386+007.5)		
Sample only	Yes	Materials Type	Fill layers
Supplier Name		Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No/Yes	Other	
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)	
1-Quality test Result By Third Party lab Comibassal Is Approved.		1-All tests were selected for Quality test and were carried-out by Thrid party lab Comibassal.	
2-This Sample Representative (5000 m3) only.		2-Results report attached and acceptable with the project specifications.	
		3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Ismael	[Signature]		A
QA/QC *	Eng. Mazen Essamy	[Signature]		A
GARB**	Eng. Mohammed Fayad	[Signature]		
Employers Representative	Eng. Alaa Abd-Allatif	[Signature]		Awc

* Designer

** Alignment/Bridges: Culvert only

15/6



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypton General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypton Accreditation council (EGAC) under No. 031706/1A

I- Introduction

General Consultant : SYSTRA
Consultant : Spectrum
Contractor : شركة عبد السلام الفقى للمقاولات
Sample : Sub-Ballast
Station : St(386+007.5)to st(385+007.5)
Date of Test : 18/5/2023
QC : 1409-1

II- Sample description:

Crushed stone and sand

III- Required tests and Results:

Required Tests		Results
1- Grain size analysis and classification	Grain size analysis	As showed in appendix
	Classification	A-1-a
2- Modified compaction (Proctor test)	MDD	2.210
	OMC	6.3%
3- Liquid limit, plastic limit and plasticity index	LL	Non plastic
	PL	Non plastic
	PI	Non plastic
4- California bearing ratio (CBR)	CBR ratio	95%
5- Specific gravity (SG), absorption and degradation	S S D	2.518
	Absorption	1.2 %
	Degradation	0.2%
6- Los Angeles test	Abrasion ratio	27.0%

IV- Notes

- 1- Samples were brought by : client
- 2- Samples are responsible from the Person who brought it.
- 3- The results are applying only for the present report.

LAB DIRECTOR

Eng / Eman kandil



Geotechnical consultant

For Dr. H.
Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031708/1A

APPENDIX

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : Internal-Inspection@comibassal.com



COMIBASSAL International Controllers

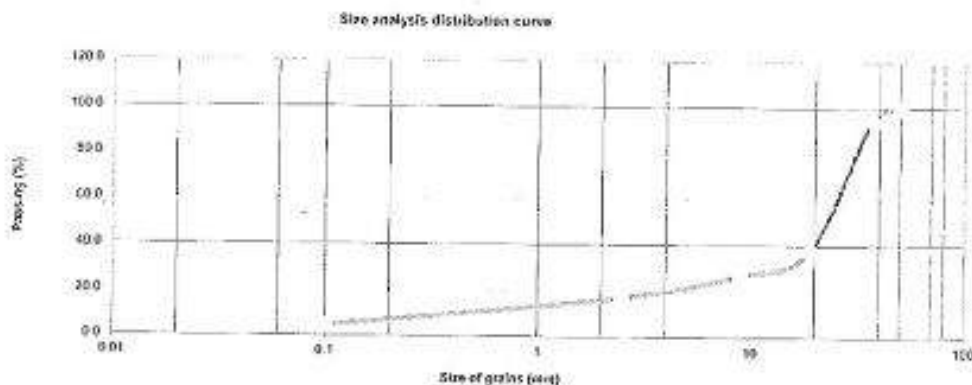
Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

PARTICLE SIZE DISTRIBUTION ANALYSIS ASTM C-136 / AASHTO T27

	WEIGHT RETAINED (gm)	CUMULATIVE WEIGHT RETAINED (gm)	CUMULATIVE PERCENTAGE RETAINED (%)	CUMULATIVE PERCENTAGE PASSING (%)	STANDARD SPECIFICATION LIMITS
2	0.00	0.00	0.00	100.0	
1 1/2	556.00	556.00	5.56	94.4	
1	3721.00	4277.00	42.77	57.2	
3/4	1973.00	6250.00	62.50	37.5	
1/2	773.00	7023.00	70.23	29.8	
3/8	312.00	7335.00	73.35	26.7	
No.4	684.00	8019.00	80.19	19.8	
No.10	74.00	74.00	14.80	16.9	
No.200	392.00	392.00	78.40	4.3	

Total sample weight = 10000.00 pass No.4- 1981.0 Total fine aggregates weight = 500 gm



Soil classification: A - 1- a - sample is non plastic



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : clvdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Modified Proctor Test Report

ASTM - D 1557

Mould Number :- 1
Volume of mould = 2199 cm³
Weight of mould = 5890 g
G.S = 2.65 g/cm³

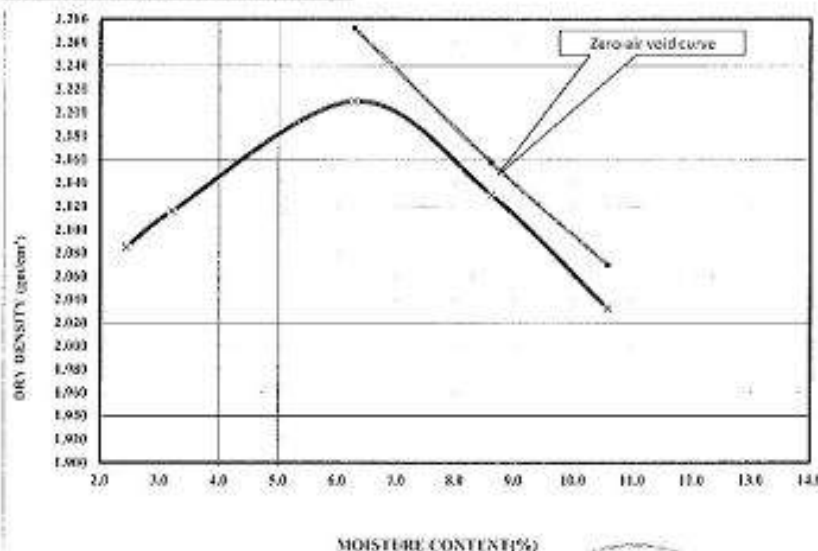
A- Density Calculations :-

	1	2	3	4	5
Weight of wet soil+mould (g)	10586	10691	11054	10977	10832
Weight of mould (g)	5890	5890	5890	5890	5890
Weight of wet soil (g)	4696	4801	5164	5087	4942
Volume of mould (cm ³)	2199	2199	2199	2199	2199
Wet density (g/cm ³)	2.136	2.183	2.348	2.313	2.247
Dry density (g/cm ³)	2.085	2.116	2.210	2.130	2.032
Zero-air Void curve			2.272	2.158	2.070

B- Moisture Calculations :-

Weight of wet soil+container (g)	250.0	250.0	250.0	250.0	250.0
Weight of dry soil+container (g)	246.0	244.2	237.0	232.0	234.5
Weight of container (g)	82.0	63.0	30.0	23.0	88.0
moisture content(%)	2.4	3.2	6.3	8.6	10.6

C - Dry density-Moisture relationship:-



M.D.D= 2.210 gm/cm³
O.M.C= 6.3 %



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701151
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



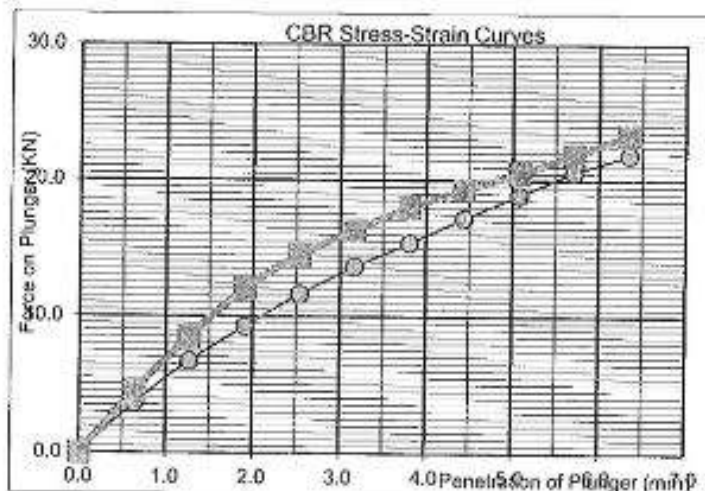
COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report Of CBR Test - ASTM - D 1883

NO OF BLOWS	56					Swell %	
MOULD NO	1					56	
WT OF MOULD+SOIL	12360				Start	0.00	
WT OF MOULD	7250				End	0.00	
WT OF SOIL	5110				Swell	0.00	
VOLUME OF MOULD	2190						
WET DENSITY	2.333						
	MC before soaking				Weight of Rammer		4.54Kg
TIN NO	1				MDD	Kg/m3	2.210
WT OF WET SOIL+TIN	250.00				OMC	%	6.3
WT OF DRY SOIL+TIN	241						
WT OF WATER	9.00						
WT OF TIN	82				PROVING RING		
WT OF DRY SOIL	159	2.125			Dlw/KN		
MOISTURE CONTENT	5.7						
DRY DENSITY	2.208				Capacity (KN)		50
Pen mm	97		Bearing (KN)		CBR		
	56		56		standar	56	
0.00	0		FALSE		0.0		
0.64	368		3.6		4.5		
1.27	684		6.7		8.5		
1.91	943		9.2		12.0		
2.54	1186		11.6		14.5	89	
3.17	1392		13.6		16.3		
3.81	1567		15.4		18.0		
4.45	1753		17.2		19.3		
5.08	1925		18.9		20.5	95	
5.71	2097		20.6		21.9		
6.35	2230		21.9		23.3		



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : info@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

ABRASION AND IMPACT " LOS ANGELES " TEST

(For coarse aggregate)

ASTM- C 131-96 / AASHTO-T-96

Speed	Rotate at 30 to 33 Rpm For 500 Revolution
Trial Grading	A
Intitial Weight (W1) gms	5000
Weight of tested sample (W2) gms Retained on sieve No.12	3650
% abrasion By Weight Passing from Sieve No.12	27.0%



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email: clvdept@comibassal.com
WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : Internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Absorption & Specific Gravity for Aggregate AASHTO T85 - ASTM C127

Weight of sample	2500
Weight of saturated - dry surface sample (B)	2526
Weight of saturated sample in water (C)	1523
Weight of dry sample after heating (A)	2496

Results:-

Saturation surface dry specific gravity = $B / (B-C)$	2.518
Bulk specific gravity = $A / (B-C)$	2.489
Apparent specific gravity = $A / (A-C)$	2.565
Absorption of water = $(B-A)/A \times 100$	1.2
Degradation of aggregate = $(2500-A) / A \times 100$	0.2



Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : info@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egypt General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egypt Accreditation council (EGAC) under No. 031708/LA

Report :	553 - 1 - Center
Date :	15/06/2023

CHEMICAL ANALYSIS

General Consultant :	SYSTRA
Consultant :	SPECTRUM
Contractor :	شركة عيد السلام القوي للمقاولات
Project :	Electric express train
Sample :	Sub Ballast
Station :	ST (386 + 007.5) : (385 + 007.5)
Date of Test :	18-5-2023
Temperature : 25 °C	Humidity : 40%

ANALYSIS	RESULTS	TEST METHOD
CHLORIDE	0.0046%	ASTM D 2974
SULPHATE	0.0180%	
ORGANIC MATTER	NEGATIVE	



LAB DIRECTOR
CH/ Mostafa Asker

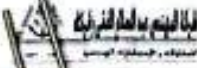
Mostafa

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4704595 - 002 034701191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com

MATERIAL INSPECTION REQUEST



الهيئة العامة
للمرور والخطط
(GARU)



Contractor Company	Eng. Abdel Salam ELFeky For Contracting	Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name: Eng. Mohamed Ismael	Signature:	Time: 12:00 PM																
Received by GARB CONSULTANT	Eng. Mazen Essamy	Signature:	PLT (14)																
			<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>DD</td> <td>MM</td> <td>YY</td> <td>HH</td> <td>MM</td> </tr> <tr> <td>385</td> <td>EW</td> <td>CS</td> <td>11</td> <td>6</td> <td>23</td> <td>3</td> <td>0</td> </tr> </table>	C1	C2	C3	DD	MM	YY	HH	MM	385	EW	CS	11	6	23	3	0
C1	C2	C3	DD	MM	YY	HH	MM												
385	EW	CS	11	6	23	3	0												

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

Description of Materials	AT LAYER (SUB BALLAST 2)				
Location to be Used	From	385+007.5	TO	385+500	
MAR & UIR Approval No	UIR SB (005)	Date	3/5/2023		
	UIR SB (006)		3/5/2023		
	UIR SB (010)		17/5/2023		
	M.A.R.(QT SB 1)		28/3/2023		
Supplier Name					
Test Requirement	PLATE LOAD TEST ON FILL LAYER FERMA	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	PLT BY Comibassal LABORATORY	NUMBER	20	11/6/2023	
2					
3					
4					
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)			
1-The Plate Load Test Result by third party is Approved.		1-9 Point was carried- out by (Comibassal) on Sub ballast layer 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. Mohamed Ismael			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif			AWC

* Designer

** Alignment/Bridges: Consent only

15/6



COMIBASSAL International Controllers Internal inspection and laboratories sector

Authorized by Egyptian Ministry of Planning and Economic Development No. 254-2018
Authorized by Egyptian Ministry of Planning and Economic Development No. 500/2019

Technical report of Plate Loading Test (DIN 18134)

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة عبد السلام القوي القنطرة
Project	:	ELECTRIC EXPRESS TRAIN
Sample	:	Subballast layer (2)
Station	:	St(385+275) to st(385+500)
Date of Test	:	11/06/2023
QC	:	1385

25 El Ghazala - Cairo Governorate - Egypt
Tel: 002 25500000 - 002 25500001
Fax: 002 25500000-02
Email: info@comibassal.com



40 El Fayed St. New El-Dokki - Egypt
Tel: 002 35500000 - 002 35500001
Fax: 002 35500000
Email: info@comibassal.com



COMIBASSAL International Controllers Internal Inspection and laboratories sector

Accredited by Egyptian General Authority for Petroleum Inspection and Control
Accredited by Egyptian General Authority for Petroleum Inspection and Control

Introduction

The three load test is designed to determine the vertical deformation and strength characteristics of soil by measuring the force and movement of penetration with clear view on a digital plate to enable to penetration for soil.

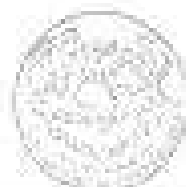
The test to be carried out on the surface soil according to Egyptian specification ENR 18134.

Test methods:

- 1- The Compressor standard C-18, 150 bar was applied to allow the application of load, the loading system, and pressure, and procedure for the test.
- 2- Loading plate with a diameter of 600 mm and 100 mm thickness of 10 mm and is provided with equally spaced 60 mm holes every 100 mm and is provided for the plate to be used for the test. The plate is to be placed on top of it.
- 3- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 150 bar capacity, which is capable of loading and releasing the load.
- 4- The load gauge used to measure the plate is 100 mm and has a resolution of 0.001 mm and the load cells are equal to 1.
- 5- The temperature of the soil at the time of the test was 22°C.
- 6- The plate was carried out on a loading cell (loading cell) and the test surface area was loaded and the plate was loaded on the surface.
- 7- The loading plate was placed on the middle of the soil, and the load was applied to the loading plate by the three load system, and the load system was applied.
- 8- The loading system was applied and the load was applied (more than 20 tons).

Description of equipment:

- 1- Loading, unloading and loading system was applied according to ENR 18134 for the plate load test to determine the vertical deformation.
- 2- Before the test, the load cell was used and the load was applied to the load cell, after which a load was applied corresponding to a value of 0.01 MPa.
- 3- In the first loading cycle, the load was increased with a normal stress of 0.25 MPa and the load was increased with 0.025 MPa. The load was increased in four steps.
- 4- Following unloading, a further series of loading cycle was carried out, in which the load was increased only to the maximum value of the first cycle.



ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control



ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control
ENR 18134 - Egyptian General Authority for Petroleum Inspection and Control



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Accredited by: Registro Nacional de Datos de Acreditación under the N° 001-01-0001
 Registered by: Registro de Instituciones de Acreditación under the 0000000001

2020-12-30

ISO

Table 1: Internal inspection and laboratories sector

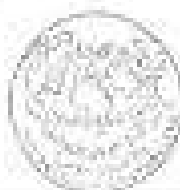
Internal inspection	Internal laboratories	Internal inspection and laboratories	Internal inspection and laboratories
1	1.1	1.1.1	1.1.1.1
2	2.1	2.1.1	2.1.1.1
3	3.1	3.1.1	3.1.1.1
4	4.1	4.1.1	4.1.1.1
5	5.1	5.1.1	5.1.1.1
6	6.1	6.1.1	6.1.1.1
7	7.1	7.1.1	7.1.1.1
8	8.1	8.1.1	8.1.1.1
9	9.1	9.1.1	9.1.1.1
10	10.1	10.1.1	10.1.1.1
11	11.1	11.1.1	11.1.1.1
12	12.1	12.1.1	12.1.1.1
13	13.1	13.1.1	13.1.1.1
14	14.1	14.1.1	14.1.1.1
15	15.1	15.1.1	15.1.1.1
16	16.1	16.1.1	16.1.1.1
17	17.1	17.1.1	17.1.1.1
18	18.1	18.1.1	18.1.1.1
19	19.1	19.1.1	19.1.1.1
20	20.1	20.1.1	20.1.1.1

Table 2: Internal inspection and laboratories sector

Internal inspection	Internal laboratories	Internal inspection and laboratories	Internal inspection and laboratories
1	1.1	1.1.1	1.1.1.1
2	2.1	2.1.1	2.1.1.1
3	3.1	3.1.1	3.1.1.1
4	4.1	4.1.1	4.1.1.1
5	5.1	5.1.1	5.1.1.1
6	6.1	6.1.1	6.1.1.1
7	7.1	7.1.1	7.1.1.1
8	8.1	8.1.1	8.1.1.1
9	9.1	9.1.1	9.1.1.1
10	10.1	10.1.1	10.1.1.1
11	11.1	11.1.1	11.1.1.1
12	12.1	12.1.1	12.1.1.1
13	13.1	13.1.1	13.1.1.1
14	14.1	14.1.1	14.1.1.1
15	15.1	15.1.1	15.1.1.1
16	16.1	16.1.1	16.1.1.1
17	17.1	17.1.1	17.1.1.1
18	18.1	18.1.1	18.1.1.1
19	19.1	19.1.1	19.1.1.1
20	20.1	20.1.1	20.1.1.1

Table 3: Internal inspection and laboratories sector

Internal inspection	Internal laboratories	Internal inspection and laboratories
1	1.1	1.1.1
2	2.1	2.1.1
3	3.1	3.1.1
4	4.1	4.1.1
5	5.1	5.1.1
6	6.1	6.1.1
7	7.1	7.1.1
8	8.1	8.1.1
9	9.1	9.1.1
10	10.1	10.1.1
11	11.1	11.1.1
12	12.1	12.1.1
13	13.1	13.1.1
14	14.1	14.1.1
15	15.1	15.1.1
16	16.1	16.1.1
17	17.1	17.1.1
18	18.1	18.1.1
19	19.1	19.1.1
20	20.1	20.1.1



Our services are - Our best work - People
 Your future - Our vision
 Our commitment
 Our responsibility



1911 1911 1911 1911
 1911 1911 1911 1911
 1911 1911 1911 1911
 1911 1911 1911 1911



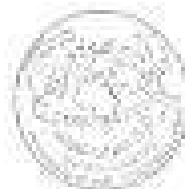
COMIBASSAL International Controllers Internal inspection and laboratories sector

Authorized by the Egyptian Board of Administrative Professionals under the No. 49 of 1997
Authorized by the Egyptian Administrative Council (EAC) under the No. 100/1994



Fig. 3. Load settlement curves, filling levels 100, 200, 300 kN/m² and 1 min, 2 min, 3 min for the first and second loading cycles

- Observed settlement for loading rate
- Observed settlement for loading rate
- △ Observed settlement for loading rate
- Observed settlement
- Observed settlement



City of Alexandria - El-Dokki Road - P.O. Box 100
101 14000 - Egypt
Email: info@comibassal.com
Website: www.comibassal.com



101 14000 - Egypt
Tel: +966 0110000000 - 011 0110000000
Fax: +966 0110000000
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Administrative - Regulatory Board of the Ministry of International Cooperation, Ministry of Health
Authorized by the Egyptian Ministry of Health - Ministry of International Cooperation

Internal Inspection

2022

Internal inspection of the internal and external quality control

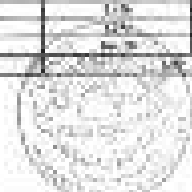
Testing program	Lab ID	Internal quality control	External quality control
1	1.1.1	1.1.1	1.1.1
2	1.1.2	1.1.2	1.1.2
3	1.1.3	1.1.3	1.1.3
4	1.1.4	1.1.4	1.1.4
5	1.1.5	1.1.5	1.1.5
6	1.1.6	1.1.6	1.1.6
7	1.1.7	1.1.7	1.1.7
8	1.1.8	1.1.8	1.1.8
9	1.1.9	1.1.9	1.1.9
10	1.1.10	1.1.10	1.1.10
11	1.1.11	1.1.11	1.1.11
12	1.1.12	1.1.12	1.1.12
13	1.1.13	1.1.13	1.1.13
14	1.1.14	1.1.14	1.1.14
15	1.1.15	1.1.15	1.1.15
16	1.1.16	1.1.16	1.1.16
17	1.1.17	1.1.17	1.1.17
18	1.1.18	1.1.18	1.1.18
19	1.1.19	1.1.19	1.1.19
20	1.1.20	1.1.20	1.1.20

Internal inspection of the internal and external quality control

Testing program	Lab ID	Internal quality control	External quality control
21	1.1.21	1.1.21	1.1.21
22	1.1.22	1.1.22	1.1.22
23	1.1.23	1.1.23	1.1.23
24	1.1.24	1.1.24	1.1.24
25	1.1.25	1.1.25	1.1.25
26	1.1.26	1.1.26	1.1.26
27	1.1.27	1.1.27	1.1.27
28	1.1.28	1.1.28	1.1.28
29	1.1.29	1.1.29	1.1.29
30	1.1.30	1.1.30	1.1.30
31	1.1.31	1.1.31	1.1.31
32	1.1.32	1.1.32	1.1.32
33	1.1.33	1.1.33	1.1.33
34	1.1.34	1.1.34	1.1.34
35	1.1.35	1.1.35	1.1.35

Internal inspection of the internal and external quality control

Testing program	Lab ID	Internal quality control	External quality control
36	1.1.36	1.1.36	1.1.36
37	1.1.37	1.1.37	1.1.37
38	1.1.38	1.1.38	1.1.38
39	1.1.39	1.1.39	1.1.39
40	1.1.40	1.1.40	1.1.40



Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health



Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health
Ministry of International Cooperation - Ministry of Health



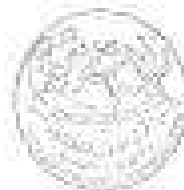
COMIBASSAL International Controllers Internal inspection and laboratories sector

Accountability - Egyptian General Authority for Petroleum under the 2014 Law
Accountability - Egyptian General Authority for Petroleum (EGAP) under the 2014 Law



Fig. 3. Gas uniformity curves (kPa) vs. Gas flow rate (m³/h) for the first and second testing cycles.

- Measured value for the first testing cycle
- Measured value for the second testing cycle
- ▲ Measured value for the second testing cycle
- △ Measured value for the second testing cycle



100 El Shoubra - Lake Maryout - Giza - Egypt
Tel: 002-33821111 - 002-33821112
Email: info@comibassal.com
Website: www.comibassal.com



45 El Shoubra - Lake Maryout - Giza - Egypt
Tel: 002-33821111 - 002-33821112
Fax: 002-33821113
Email: info@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accreditation: ISO 9001:2015 and ISO 17025:2017 under Dec. 2018/01-0204
Accreditation: ISO 14001:2015 under Dec. 2018/01-0204

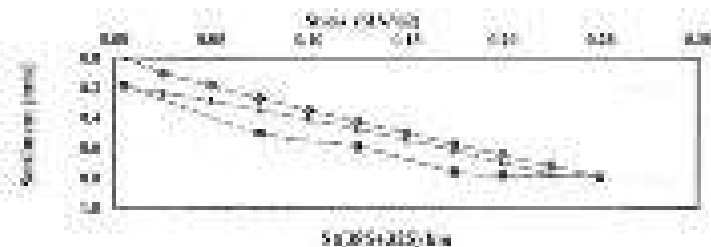
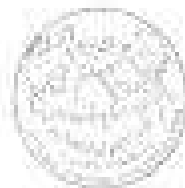


Fig. 3.1. Compressive strength curves. Strength vs. density according to Table 7 and Table 8 for the first and second loading cycle

- 1. Compressive strength from the first loading cycle
- 2. Compressive strength from the second loading cycle
- 3. Compressive strength from the third loading cycle
- 4. Compressive strength from the fourth loading cycle



Office: 11 Avenida 100, Torre 1, 2nd floor, 06000 Mexico City, Mexico
Phone: +52 (55) 52 52 52 52
Email: info@comibassal.com
Website: www.comibassal.com



49 of Avenida 100, Torre 1, 2nd floor, 06000 Mexico City, Mexico
Tel: +52 (55) 52 52 52 52
Fax: +52 (55) 52 52 52 52
Email: info@comibassal.com



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Accredited by Egyptian Board of Accreditation and Quality Assurance (EABQA) No. 001-01-001
 Accredited by Egyptian Board of Accreditation and Quality Assurance (EABQA) No. 001-01-001

Page 1 of 10

4/20

Table 10: Internal audit results for the internal audit system

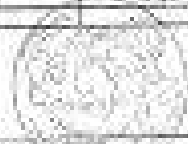
Location no.	Findings no.	Nonconformity no. (NCR)	Internal audit finding
1	1.1.1	001	001
1	1.1.2	002	002
1	1.1.3	003	003
1	1.1.4	004	004
1	1.1.5	005	005
1	1.1.6	006	006
1	1.1.7	007	007
1	1.1.8	008	008
1	1.1.9	009	009
1	1.1.10	010	010
1	1.1.11	011	011
1	1.1.12	012	012
1	1.1.13	013	013
1	1.1.14	014	014
1	1.1.15	015	015
1	1.1.16	016	016
1	1.1.17	017	017
1	1.1.18	018	018
1	1.1.19	019	019
1	1.1.20	020	020

Table 11: Internal audit results for the internal audit system

Location no.	Findings no.	Nonconformity no. (NCR)	Internal audit finding
2	2.1.1	021	021
2	2.1.2	022	022
2	2.1.3	023	023
2	2.1.4	024	024
2	2.1.5	025	025
2	2.1.6	026	026
2	2.1.7	027	027
2	2.1.8	028	028
2	2.1.9	029	029
2	2.1.10	030	030
2	2.1.11	031	031
2	2.1.12	032	032
2	2.1.13	033	033
2	2.1.14	034	034
2	2.1.15	035	035
2	2.1.16	036	036
2	2.1.17	037	037
2	2.1.18	038	038
2	2.1.19	039	039
2	2.1.20	040	040

Table 12: Internal audit results

Location no.	Findings no.	Nonconformity no. (NCR)	Internal audit finding
3	3.1.1	041	041
3	3.1.2	042	042
3	3.1.3	043	043
3	3.1.4	044	044
3	3.1.5	045	045
3	3.1.6	046	046
3	3.1.7	047	047
3	3.1.8	048	048
3	3.1.9	049	049
3	3.1.10	050	050
3	3.1.11	051	051
3	3.1.12	052	052
3	3.1.13	053	053
3	3.1.14	054	054
3	3.1.15	055	055
3	3.1.16	056	056
3	3.1.17	057	057
3	3.1.18	058	058
3	3.1.19	059	059
3	3.1.20	060	060



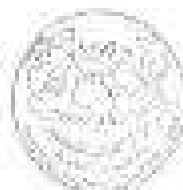
COMIBASSAL International Controllers
 Internal inspection and laboratories sector
 Email: info@comibassal.com
 Website: www.comibassal.com



COMIBASSAL International Controllers
 Internal inspection and laboratories sector
 Email: info@comibassal.com
 Website: www.comibassal.com



10. Information policy is the first building block.
 11. Information policy is the building block.
 12. Information policy is the building block.
 13. Information policy is the building block.
 14. Information policy is the building block.



Elin F. Aronson - Caring Connections - 410-326-7000
 earonson@connections.org
 www.connections.org



OR: 800.842.4266, info@acsl.org
Fax: 802.244.9014 • 802.244.9144
E: info@acsl.org
Web: www.acsl.org



COMIBASSAL International Controllers Internal inspection and laboratories sector

Approved under a Regulatory System of Accreditation for Personnel under the 2013 RSE-0004
Authorized under a Regulatory System of Accreditation (RSE-0004) under the 0000000000

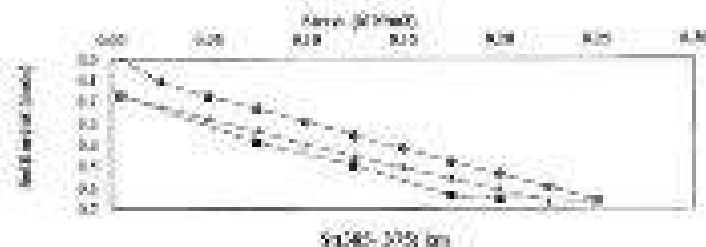


Fig. 3. Load (kg) vs. Distance (km) for three different loading rates. The graph shows the load and distance loading rates.

- Actual load from the first loading rate
- Actual load from the second loading rate
- Actual load from the third loading rate
- Difference between the actual and the theoretical load



100 St. Albans Road - London, England
Tel: +44 (0)20 7464 1000
Fax: +44 (0)20 7464 1001
Web: www.icrc.org



100 St. Albans Road - London, England
Tel: +44 (0)20 7464 1000 / +44 (0)20 7464 1001
Fax: +44 (0)20 7464 1001
Web: www.icrc.org



COMIBASSAL International Controllers Internal inspection and laboratories sector

Procedimiento de inspección interna y de laboratorios para el sector de controladores internacionales
Internal inspection and laboratories sector procedures for international controllers

Page 1 of 10

001

Table 1. Internal values for first reading (first reading type)

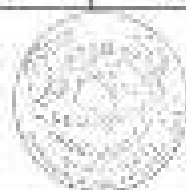
Reading type	Value (V)	Reading type (V)	Reading type (V)
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 2. Internal values for second reading (second reading type)

Reading type	Value (V)	Reading type (V)	Reading type (V)
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 3. Compliance of values

Reading type	Value (V)	Reading type (V)	Reading type (V)
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0



10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024



10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024
10-11-2024 - 10-11-2024 - 10-11-2024



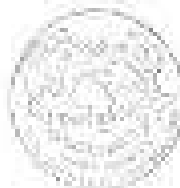
COMIBASSAL International Controllers Internal inspection and laboratories sector

ACTIVIDADES DE INSPECCIÓN INTERNA Y DE LABORATORIOS
ACTIVIDADES DE INSPECCIÓN INTERNA Y DE LABORATORIOS



Fig. 4 Load (tonnes) vs. Distance (km) for the first and second loading cycle

- 1. Normal loading cycle
- 2. Loading cycle
- 3. Normal loading cycle
- 4. Normal loading cycle



45118-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000-0000



45118-0000-0000-0000-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000-0000-0000
45118-0000-0000-0000-0000-0000-0000-0000-0000-0000



COMIBASSAL International Controllers Internal inspection and laboratories sector

International Regulatory System of Authorities For Petroleum under ICAO (ICAO-IRIS) and IATA (IATA-IRIS) and ICAO (ICAO-IRIS) under ICAO (ICAO-IRIS)



Fig. 1. Fuel Flow Rate (kg/hr) vs. Fuel Flow Rate (kg/hr) for the Fuel and second Fueling system

- Fuel Flow Rate from the Fuel Flow Rate
- Fuel Flow Rate from the Fuel Flow Rate
- Fuel Flow Rate from the Fuel Flow Rate
- Fuel Flow Rate from the Fuel Flow Rate



100-11-1000000 - 100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000



100-11-1000000 - 100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000 - 100-11-1000000



doi:10.1371/journal.pone.0142462.g002

110101

10

Table 2.3: Unknown model systems that have been fully characterized (mathematically) [1, 2].

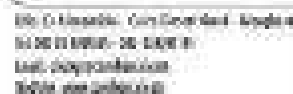
Leasing mode no.	Land (ha)	Capital costs (US\$)	Net Present Value (NPV)
1	1.0	1,000	1,000
2	2.0	2,000	2,000
3	3.0	3,000	3,000
4	4.0	4,000	4,000
5	5.0	5,000	5,000
6	6.0	6,000	6,000
7	7.0	7,000	7,000
8	8.0	8,000	8,000
9	9.0	9,000	9,000
10	10.0	10,000	10,000
11	11.0	11,000	11,000
12	12.0	12,000	12,000
13	13.0	13,000	13,000
14	14.0	14,000	14,000
15	15.0	15,000	15,000
16	16.0	16,000	16,000
17	17.0	17,000	17,000
18	18.0	18,000	18,000
19	19.0	19,000	19,000
20	20.0	20,000	20,000

[illegible]

Leading shape no.	Lead to 6%	Interval above 6% (10000)	Interval of leading shape 6
1	1.000	0.000	0.000
2	1.000	0.000	0.000
3	1.000	0.000	0.000
4	1.000	0.000	0.000
5	1.000	0.000	0.000
6	1.000	0.000	0.000
7	1.000	0.000	0.000
8	1.000	0.000	0.000
9	1.000	0.000	0.000
10	1.000	0.000	0.000
11	1.000	0.000	0.000
12	1.000	0.000	0.000
13	1.000	0.000	0.000
14	1.000	0.000	0.000
15	1.000	0.000	0.000
16	1.000	0.000	0.000
17	1.000	0.000	0.000
18	1.000	0.000	0.000
19	1.000	0.000	0.000
20	1.000	0.000	0.000
21	1.000	0.000	0.000
22	1.000	0.000	0.000
23	1.000	0.000	0.000
24	1.000	0.000	0.000
25	1.000	0.000	0.000
26	1.000	0.000	0.000
27	1.000	0.000	0.000
28	1.000	0.000	0.000
29	1.000	0.000	0.000
30	1.000	0.000	0.000
31	1.000	0.000	0.000
32	1.000	0.000	0.000
33	1.000	0.000	0.000
34	1.000	0.000	0.000
35	1.000	0.000	0.000
36	1.000	0.000	0.000
37	1.000	0.000	0.000
38	1.000	0.000	0.000
39	1.000	0.000	0.000
40	1.000	0.000	0.000
41	1.000	0.000	0.000
42	1.000	0.000	0.000
43	1.000	0.000	0.000
44	1.000	0.000	0.000
45	1.000	0.000	0.000
46	1.000	0.000	0.000
47	1.000	0.000	0.000
48	1.000	0.000	0.000
49	1.000	0.000	0.000
50	1.000	0.000	0.000
51	1.000	0.000	0.000
52	1.000	0.000	0.000
53	1.000	0.000	0.000
54	1.000	0.000	0.000
55	1.000	0.000	0.000
56	1.000	0.000	0.000
57	1.000	0.000	0.000
58	1.000	0.000	0.000
59	1.000	0.000	0.000
60	1.000	0.000	0.000
61	1.000	0.000	0.000
62	1.000	0.000	0.000
63	1.000	0.000	0.000
64	1.000	0.000	0.000
65	1.000	0.000	0.000
66	1.000	0.000	0.000
67	1.000	0.000	0.000
68	1.000	0.000	0.000
69	1.000	0.000	0.000
70	1.000	0.000	0.000
71	1.000	0.000	0.000
72	1.000	0.000	0.000
73	1.000	0.000	0.000
74	1.000	0.000	0.000
75	1.000	0.000	0.000
76	1.000	0.000	0.000
77	1.000	0.000	0.000
78	1.000	0.000	0.000
79	1.000	0.000	0.000
80	1.000	0.000	0.000
81	1.000	0.000	0.000
82	1.000	0.000	0.000
83	1.000	0.000	0.000
84	1.000	0.000	0.000
85	1.000	0.000	0.000
86	1.000	0.000	0.000
87	1.000	0.000	0.000
88	1.000	0.000	0.000
89	1.000	0.000	0.000
90	1.000	0.000	0.000
91	1.000	0.000	0.000
92	1.000	0.000	0.000
93	1.000	0.000	0.000
94	1.000	0.000	0.000

[illegible]

Particulars	1st ending 2018	1st ending 2019
Share Capital	12,700	12,700
Reserves	1,200	1,200
Long-term Debt	1,200	1,200
Current Assets	1,200	1,200
Current Liabilities	1,200	1,200



4900 Wilshire Ave., Berkeley, CA 94704
Tel: 510 835-0000 Fax: 510 835-0001
E-mail: info@bio-protocol.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Procedimiento de inspección interna para el sector de inspección y laboratorios
Procedimento de inspección interna para o setor de inspeção e laboratórios

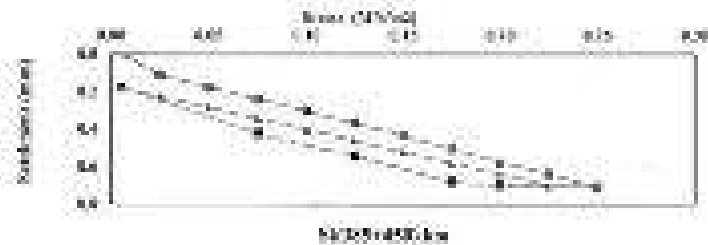
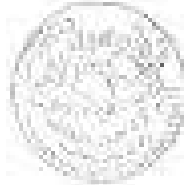


Fig. 1. Diferencia de medida. Gráfico de líneas correspondiente a datos de una tabla de control para el sector de inspección y laboratorios.

- Medida tomada desde la 1ra muestra
- Medida tomada desde la 2da muestra
- Medida tomada desde la 3ra muestra
- Diferencia de medida
- Diferencia de medida



100-20-0000000 - 100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000



100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000
100-20-0000000 - 100-20-0000000



Author's address: Department of Psychology, University of Illinois at Chicago, 4400 S. Maryland Ave., Chicago, IL 60607, USA.
E-mail address: shawn.walker@uic.edu (S. Walker).

Abstract

10

FIGURE 10 | **Reproductive activity for four breeding pairs (see text for details).**

Expenditure category	2017 (\$)	2016 (\$)	2015 (\$)	2014 (\$)
1. Salaries and wages	1,100	1,050	1,000	950
2. Social security	100	95	90	85
3. Pension	100	95	90	85
4. Medical	100	95	90	85
5. Housing	100	95	90	85
6. Education	100	95	90	85
7. Travel	100	95	90	85
8. Entertainment	100	95	90	85
9. Other	100	95	90	85
10. Total	1,500	1,430	1,360	1,290

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Sampling stage no.	Location N°	Number of observations N	Sampling phase no.
1	12.50	1,000	1
2	12.50	1,000	2
3	12.50	1,000	3
4	12.50	1,000	4
5	12.50	1,000	5
6	12.50	1,000	6
7	12.50	1,000	7
8	12.50	1,000	8
9	12.50	1,000	9
10	12.50	1,000	10
11	12.50	1,000	11
12	12.50	1,000	12
13	12.50	1,000	13
14	12.50	1,000	14
15	12.50	1,000	15
16	12.50	1,000	16
17	12.50	1,000	17
18	12.50	1,000	18
19	12.50	1,000	19
20	12.50	1,000	20
21	12.50	1,000	21
22	12.50	1,000	22
23	12.50	1,000	23
24	12.50	1,000	24
25	12.50	1,000	25
26	12.50	1,000	26
27	12.50	1,000	27
28	12.50	1,000	28
29	12.50	1,000	29
30	12.50	1,000	30
31	12.50	1,000	31
32	12.50	1,000	32
33	12.50	1,000	33
34	12.50	1,000	34
35	12.50	1,000	35
36	12.50	1,000	36
37	12.50	1,000	37
38	12.50	1,000	38
39	12.50	1,000	39
40	12.50	1,000	40
41	12.50	1,000	41
42	12.50	1,000	42
43	12.50	1,000	43
44	12.50	1,000	44
45	12.50	1,000	45
46	12.50	1,000	46
47	12.50	1,000	47
48	12.50	1,000	48
49	12.50	1,000	49
50	12.50	1,000	50
51	12.50	1,000	51
52	12.50	1,000	52
53	12.50	1,000	53
54	12.50	1,000	54
55	12.50	1,000	55
56	12.50	1,000	56
57	12.50	1,000	57
58	12.50	1,000	58
59	12.50	1,000	59
60	12.50	1,000	60
61	12.50	1,000	61
62	12.50	1,000	62
63	12.50	1,000	63
64	12.50	1,000	64
65	12.50	1,000	65
66	12.50	1,000	66
67	12.50	1,000	67
68	12.50	1,000	68
69	12.50	1,000	69
70	12.50	1,000	70
71	12.50	1,000	71
72	12.50	1,000	72
73	12.50	1,000	73
74	12.50	1,000	74
75	12.50	1,000	75
76	12.50	1,000	76
77	12.50	1,000	77
78	12.50	1,000	78
79	12.50	1,000	79
80	12.50	1,000	80
81	12.50	1,000	81
82	12.50	1,000	82
83	12.50	1,000	83
84	12.50	1,000	84
85	12.50	1,000	85
86	12.50	1,000	86
87	12.50	1,000	87
88	12.50	1,000	88
89	12.50	1,000	89
90	12.50	1,000	90
91	12.50	1,000	91
92	12.50	1,000	92
93	12.50	1,000	93
94	12.50	1,000	94
95	12.50	1,000	95
96	12.50	1,000	96
97	12.50	1,000	97
98	12.50	1,000	98
99	12.50	1,000	99
100	12.50	1,000	100

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Category	1999	2000
1. Total	1,000	1,000
2. Government	1,000	1,000
3. Private	1,000	1,000
4. Total	1,000	1,000
5. Government	1,000	1,000
6. Private	1,000	1,000
7. Total	1,000	1,000
8. Government	1,000	1,000
9. Private	1,000	1,000
10. Total	1,000	1,000
11. Government	1,000	1,000
12. Private	1,000	1,000
13. Total	1,000	1,000
14. Government	1,000	1,000
15. Private	1,000	1,000
16. Total	1,000	1,000
17. Government	1,000	1,000
18. Private	1,000	1,000
19. Total	1,000	1,000
20. Government	1,000	1,000
21. Private	1,000	1,000
22. Total	1,000	1,000
23. Government	1,000	1,000
24. Private	1,000	1,000
25. Total	1,000	1,000
26. Government	1,000	1,000
27. Private	1,000	1,000
28. Total	1,000	1,000
29. Government	1,000	1,000
30. Private	1,000	1,000
31. Total	1,000	1,000
32. Government	1,000	1,000
33. Private	1,000	1,000
34. Total	1,000	1,000
35. Government	1,000	1,000
36. Private	1,000	1,000
37. Total	1,000	1,000
38. Government	1,000	1,000
39. Private	1,000	1,000
40. Total	1,000	1,000
41. Government	1,000	1,000
42. Private	1,000	1,000
43. Total	1,000	1,000
44. Government	1,000	1,000
45. Private	1,000	1,000
46. Total	1,000	1,000
47. Government	1,000	1,000
48. Private	1,000	1,000
49. Total	1,000	1,000
50. Government	1,000	1,000
51. Private	1,000	1,000
52. Total	1,000	1,000
53. Government	1,000	1,000
54. Private	1,000	1,000
55. Total	1,000	1,000
56. Government	1,000	1,000
57. Private	1,000	1,000
58. Total	1,000	1,000
59. Government	1,000	1,000
60. Private	1,000	1,000
61. Total	1,000	1,000
62. Government	1,000	1,000
63. Private	1,000	1,000
64. Total	1,000	1,000
65. Government	1,000	1,000
66. Private	1,000	1,000
67. Total	1,000	1,000
68. Government	1,000	1,000
69. Private	1,000	1,000
70. Total	1,000	1,000
71. Government	1,000	1,000
72. Private	1,000	1,000
73. Total	1,000	1,000
74. Government	1,000	1,000
75. Private	1,000	1,000
76. Total	1,000	1,000
77. Government	1,000	1,000
78. Private	1,000	1,000
79. Total	1,000	1,000
80. Government	1,000	1,000
81. Private	1,000	1,000
82. Total	1,000	1,000
83. Government	1,000	1,000
84. Private	1,000	1,000
85. Total	1,000	1,000
86. Government	1,000	1,000
87. Private	1,000	1,000
88. Total	1,000	1,000
89. Government	1,000	1,000
90. Private	1,000	1,000
91. Total	1,000	1,000
92. Government	1,000	1,000
93. Private	1,000	1,000
94. Total	1,000	1,000
95. Government	1,000	1,000
96. Private	1,000	1,000
97. Total	1,000	1,000
98. Government	1,000	1,000
99. Private	1,000	1,000
100. Total	1,000	1,000



4800 Riverside Ave., Aliso Viejo
 Tel: 949.441.9014 • Fax: 949.441.9442
 Tel: 949.441.9440
 Email: info@the-ecological-council.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

accredited by the International Laboratory Accreditation Board (ILAB) under No. 04/02/03-0008
accredited by the International Laboratory Accreditation Board (ILAB) under No. 04/02/03-0008



Fig. 3. Graph of the internal inspection and the internal inspection (A1/A2) for the internal inspection and the internal inspection (A1/A2)

- Laboratory results from the internal inspection
- Laboratory results from the internal inspection
- Laboratory results from the internal inspection
- Laboratory results from the internal inspection
- Laboratory results from the internal inspection



COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL



COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL
COMIBASSAL - COMIBASSAL - COMIBASSAL



COMIBASSAL International Controllers Internal inspection and laboratories section

Inspected by: 18/09/2022 and 19/09/2022 for the values under the 104/2019-0003
Authorized by: 18/09/2022 and 19/09/2022 for the values under the 104/2019-0003

18/09/2022 and 19/09/2022

155

Table 10: Processed values for the loading and unloading cycle

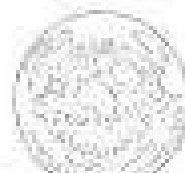
Loading cycle no.	Load (kg)	Actual unloading value	Unprocessed loading value (kg)
1	10.00	1.000	1.00
2	10.00	1.000	1.00
3	10.00	1.000	1.00
4	10.00	1.000	1.00
5	10.00	1.000	1.00
6	10.00	1.000	1.00
7	10.00	1.000	1.00
8	10.00	1.000	1.00
9	10.00	1.000	1.00
10	10.00	1.000	1.00
11	10.00	1.000	1.00
12	10.00	1.000	1.00
13	10.00	1.000	1.00
14	10.00	1.000	1.00
15	10.00	1.000	1.00

Table 11: Processed values for the unloading cycle

Loading cycle no.	Load (kg)	Actual unloading value	Unprocessed loading value (kg)
1	10.00	1.000	1.00
2	10.00	1.000	1.00
3	10.00	1.000	1.00
4	10.00	1.000	1.00
5	10.00	1.000	1.00
6	10.00	1.000	1.00
7	10.00	1.000	1.00
8	10.00	1.000	1.00
9	10.00	1.000	1.00
10	10.00	1.000	1.00
11	10.00	1.000	1.00
12	10.00	1.000	1.00
13	10.00	1.000	1.00
14	10.00	1.000	1.00
15	10.00	1.000	1.00

Table 12: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
Actual (kg)	10.00	10.00
Unprocessed	1.00	1.00
Unprocessed (kg)	1.00	1.00
Unprocessed (kg)	1.00	1.00
Unprocessed (kg)	1.00	1.00
Unprocessed (kg)	1.00	1.00



18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022



18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022
18/09/2022 - 19/09/2022



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accreditation by the Egyptian General Authority for Professional Control No. 8343/014/2008
Accreditation by the Egyptian General Authority for Professional Control No. 8343/014/2008

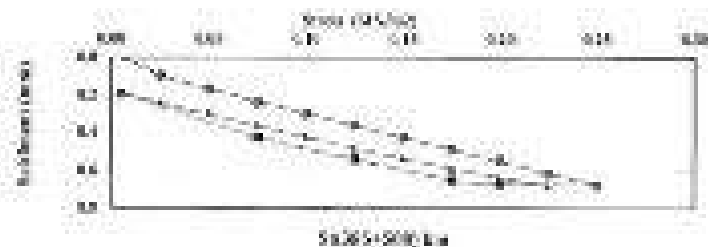
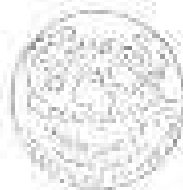


Fig. 10: Load vs. Strain (mm/mm) for three different loading cycles according to Table 20 and Table 21 for the first and second loading cycles

- Load vs. Strain from the first loading cycle
- Load vs. Strain from the second loading cycle
- ▲ Load vs. Strain from the third loading cycle
- Load vs. Strain from the fourth loading cycle
- Load vs. Strain from the fifth loading cycle



100 El Khayma - Cairo - Egypt
Tel: 0020 2 5000 0000 - 0020 2 5000 0001
Fax: 0020 2 5000 0002
Email: info@comibassal.com



100 El Khayma - Cairo - Egypt
Tel: 0020 2 5000 0000 - 0020 2 5000 0001
Fax: 0020 2 5000 0002
Email: info@comibassal.com



COMIBASSAL International Controllers Internal inspection and Laboratories sector

Authorized by: Egyptian General Authority for Petroleum under No. 314/2014-EG
Authorized by: Egyptian Association of Standardization (EASAC) under No. 002/2016/EA

Conclusion:

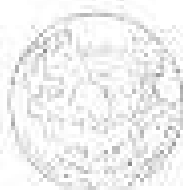
The present test results which were obtained from the performance tests of the studied and analyzed tested types within the EPC, confirm the compliance of the tested types with the EPC (EN 12286-2012) in accordance with the European standard EN 12286-2012 (as illustrated in table 11).

Table 11 - Test results

Condition	$P_{\text{max}}/S_{\text{max}} (\text{kg}/\text{cm}^2)$	$P_{\text{max}}/S_{\text{max}} (\text{kg}/\text{cm}^2)$	$P_{\text{max}}/S_{\text{max}}$ ratio
20/200+270 kg	164.54	182.66	1.12
20/200+300 kg	164.28	179.21	1.09
20/200+320 kg	176.33	195.83	1.11
20/200+350 kg	207.23	226.24	1.14
20/200+400 kg	285.30	304.23	1.10
20/200+450 kg	371.43	397.62	1.10
20/200+500 kg	458.34	483.53	1.05
20/200+550 kg	578.75	593.29	1.02
20/200+600 kg	675.57	694.14	1.03
20/200+650 kg	774.43	804.07	1.04

Lab Director

Eng. / Elwan Khalil



Supervisory Chairman

Prof. Dr. /

Dr. / Mohamed Mostafa Bailey

Elwan Khalil - Cairo General Road - Heliopolis
Tel: 011 4111111 - 011 4111111
Email: elwan@elwan.com
Website: www.elwan.com



EN 12286-2012 Part 2 (EN 12286-2012)
Tel: 011 4111111 - 011 4111111
Email: elwan@elwan.com
Website: www.elwan.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Authorized by Egyptian Council of Scientific Research under No. 24/2013-CP-EGAL
and verified by Egyptian Council of Scientific Research (EGAS) under No. 23/2016-CA

Technical report of Plate Loading Test (DIN 18134)

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة عبد السلام القلي القنطرة
Project	:	ELECTRIC EXPRESS TRAIN
Sample	:	Subballast layer (2)
Station	:	S(385+025) to st(385+250)
Date of Test	:	11/06/2023
QC	:	1389

COMIBASSAL - Cairo Desert Road - Heliopolis
Tel: 203 60002 - 20 649610
Email: info@comibassal.com
Website: www.comibassal.com



MR. Dr. Hossam Elmaghrabi
Tel: 202 411100070 - 402 411101441
Fax: 202 800500426
Email: info@comibassal.com, info@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by Egyptian Ministry of Planning and Economic Development under No. 144 (E-0-0170)
Accredited by Egyptian Association for Standardization (EAS) under No. 008/006/04

Introduction:

The Plate Load test is designed to determine the vertical deformation and strength characteristics of soil by measuring the force and amount of penetration with time when a rigid plate is made to penetrate the soil.

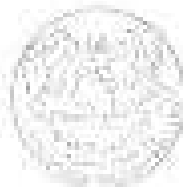
The test is performed on the native soil according to the main specifications EN 15336.

Test method:

- 1- The system standard EN 15336 was applied to define the apparatus used, the loading system, test conditions, and procedure for plate load test.
- 2- Loading plates with a diameter of 600 mm have a thickness of 20 mm and are prepared with equally spaced radial ribs with cross section parallel to the plate surface. Two 100 mm plates to be placed on top of it.
- 3- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 100 ton capacity, which is capable of applying and releasing the load stages.
- 4- The dial gauge used to measure the displacement system has a resolution of 0.002 mm and the lower scale was adjusted to 0.
- 5- The temperature of the floor of the test was 20°C.
- 6- The plate was placed on a uniform loading area. The test surface was leveled and the plate was leveled on this surface.
- 7- The hydraulic jack was placed on the specified, and at the same time, the loading plate beneath the reaction loading system and secured against lifting.
- 8- The reaction loading system was a heavy multi-point reaction frame (more than 20 tons).

Description of experiment:

- 1- Loading, unloading and reloading stages were applied according to EN 15336 for the plate load test to get the desired load of 600 kN.
- 2- Prior to the test, the force transducer and dial gauge were calibrated, after which a total test applied corresponding to a load of 600 kN was.
- 3- In the first loading cycle, the load was increased until a normal stress of 0.25 MPa (2.5 kg/cm²) was reached, and the loading was increased up to 0.5 MPa (5 kg/cm²). The load was released to four stages.
- 4- Following unloading, a further second loading cycle was started until, in effect, the load was increased only to the previous stage of the first cycle.



15/13 Elmasara - Cairo - Egypt - 11511
Tel: 002 2500 4000 - 002 2500 4001
Fax: 002 2500 4002
Email: info@comibassal.com



40 El Masara Ave. - Cairo - Egypt
Tel: 002 2500 4000 - 002 2500 4001
Fax: 002 2500 4002
Email: info@comibassal.com



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Accredited by: Egyptian General Authority for Quality Control and Assurance (EGQA) No. 100/2018
 Accredited by: Egyptian Administrative Council (EAC) No. 100/2018

ISSUE-001-01

001

Table 1: Chemical analysis of food samples (g/L) (continued)

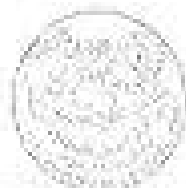
Sample No.	Unit (g/L)	Maximum value (g/L)	Maximum value (g/L)
1	1.00	1.00	1.00
2	1.00	1.00	1.00
3	1.00	1.00	1.00
4	1.00	1.00	1.00
5	1.00	1.00	1.00
6	1.00	1.00	1.00
7	1.00	1.00	1.00
8	1.00	1.00	1.00
9	1.00	1.00	1.00
10	1.00	1.00	1.00
11	1.00	1.00	1.00
12	1.00	1.00	1.00
13	1.00	1.00	1.00
14	1.00	1.00	1.00
15	1.00	1.00	1.00
16	1.00	1.00	1.00
17	1.00	1.00	1.00
18	1.00	1.00	1.00
19	1.00	1.00	1.00
20	1.00	1.00	1.00

Table 2: Chemical analysis of food samples (g/L)

Sample No.	Unit (g/L)	Maximum value (g/L)	Maximum value (g/L)
1	1.00	1.00	1.00
2	1.00	1.00	1.00
3	1.00	1.00	1.00
4	1.00	1.00	1.00
5	1.00	1.00	1.00
6	1.00	1.00	1.00
7	1.00	1.00	1.00
8	1.00	1.00	1.00
9	1.00	1.00	1.00
10	1.00	1.00	1.00
11	1.00	1.00	1.00
12	1.00	1.00	1.00
13	1.00	1.00	1.00
14	1.00	1.00	1.00
15	1.00	1.00	1.00
16	1.00	1.00	1.00
17	1.00	1.00	1.00
18	1.00	1.00	1.00
19	1.00	1.00	1.00
20	1.00	1.00	1.00

Table 3: Chemical analysis of food samples (g/L)

Sample No.	Unit (g/L)	Maximum value (g/L)	Maximum value (g/L)
1	1.00	1.00	1.00
2	1.00	1.00	1.00
3	1.00	1.00	1.00
4	1.00	1.00	1.00
5	1.00	1.00	1.00
6	1.00	1.00	1.00
7	1.00	1.00	1.00
8	1.00	1.00	1.00
9	1.00	1.00	1.00
10	1.00	1.00	1.00
11	1.00	1.00	1.00
12	1.00	1.00	1.00
13	1.00	1.00	1.00
14	1.00	1.00	1.00
15	1.00	1.00	1.00
16	1.00	1.00	1.00
17	1.00	1.00	1.00
18	1.00	1.00	1.00
19	1.00	1.00	1.00
20	1.00	1.00	1.00



100 El Nasr El Khatayeb El Khatayeb El Khatayeb
 100 El Nasr El Khatayeb El Khatayeb El Khatayeb
 Email: info@comibassal.com
 Website: www.comibassal.com



45 El Nasr El Khatayeb El Khatayeb El Khatayeb
 100 El Nasr El Khatayeb El Khatayeb El Khatayeb
 Fax: 011 11111111
 Email: info@comibassal.com



Journal of the Egyptian Society of Authors, Publishers, and Translators (No. 146) 1993-1994
Journal of the Egyptian Society of Authors, Publishers, and Translators (No. 147) 1994-1995



- ☐ maximum potential for economic growth
☐ maximum potential for the job-creating
☐ maximum potential for the growth of the
 economy

Dr. H. Knebel, Co-Editorial - Mayhem
Tel.: +49 7081 65 100 11
Email: h.knebel@uni-wuerzburg.de
http://www.uni-wuerzburg.de



4811 Alcora Ave. Alcora, Guyana
Tel: 592 2150014, 2021 0011442
Fax: 592 2150047
Email: info@alcora-guyana.co.uk



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Asociación de Expertos Técnicos de Aduana por Procesos de la MAEP-E-2008
 Asociado por el Registro Nacional de Expertos (RNE) número 0000000000

EXAMEN DE AVALUACIÓN **2018**

Tabla 1: Tabla de conversión de los resultados de los exámenes de evaluación

Grado de logro	Nota de la prueba	Porcentaje de aciertos	Resultados de la prueba de evaluación
1	11-15	0.00%	0.00
2	16-20	0.00%	0.00
3	21-25	0.00%	0.00
4	26-30	0.00%	0.00
5	31-35	0.00%	0.00
6	36-40	0.00%	0.00
7	41-45	0.00%	0.00
8	46-50	0.00%	0.00
9	51-55	0.00%	0.00
10	56-60	0.00%	0.00
11	61-65	0.00%	0.00
12	66-70	0.00%	0.00
13	71-75	0.00%	0.00
14	76-80	0.00%	0.00
15	81-85	0.00%	0.00
16	86-90	0.00%	0.00
17	91-95	0.00%	0.00
18	96-100	0.00%	0.00

Tabla 2: Tabla de conversión de los resultados de los exámenes de evaluación

Grado de logro	Nota de la prueba	Porcentaje de aciertos	Resultados de la prueba de evaluación
1	11-15	0.00%	0.00
2	16-20	0.00%	0.00
3	21-25	0.00%	0.00
4	26-30	0.00%	0.00
5	31-35	0.00%	0.00
6	36-40	0.00%	0.00
7	41-45	0.00%	0.00
8	46-50	0.00%	0.00
9	51-55	0.00%	0.00
10	56-60	0.00%	0.00
11	61-65	0.00%	0.00
12	66-70	0.00%	0.00
13	71-75	0.00%	0.00
14	76-80	0.00%	0.00
15	81-85	0.00%	0.00
16	86-90	0.00%	0.00
17	91-95	0.00%	0.00
18	96-100	0.00%	0.00

Tabla 3: Tabla de conversión de los resultados de los exámenes de evaluación

Grado de logro	Nota de la prueba	Porcentaje de aciertos	Resultados de la prueba de evaluación
1	11-15	0.00%	0.00
2	16-20	0.00%	0.00
3	21-25	0.00%	0.00
4	26-30	0.00%	0.00
5	31-35	0.00%	0.00
6	36-40	0.00%	0.00
7	41-45	0.00%	0.00
8	46-50	0.00%	0.00
9	51-55	0.00%	0.00
10	56-60	0.00%	0.00
11	61-65	0.00%	0.00
12	66-70	0.00%	0.00
13	71-75	0.00%	0.00
14	76-80	0.00%	0.00
15	81-85	0.00%	0.00
16	86-90	0.00%	0.00
17	91-95	0.00%	0.00
18	96-100	0.00%	0.00



Asociación de Expertos Técnicos de Aduana por Procesos de la MAEP-E-2008
 MAEP-E-2008-0000000000
 Email: info@comibassal.com
 Website: www.comibassal.com



Asociación de Expertos Técnicos de Aduana por Procesos de la MAEP-E-2008
 MAEP-E-2008-0000000000
 Email: info@comibassal.com
 Website: www.comibassal.com



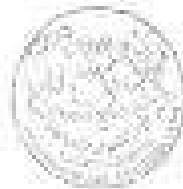
COMIBASSAL International Controllers Internal inspection and laboratories sector

Accreditation & Regulatory Demand of Authority for Participation under the ICAO in 2016
Accreditation & Regulatory Demand of Authority for Participation under the ICAO in 2016



Fig. 1: Number of controllers from the first level of the hierarchy, the second level of the hierarchy and the third level of the hierarchy

- Number of controllers from the first level of the hierarchy
- Number of controllers from the second level of the hierarchy
- Number of controllers from the third level of the hierarchy



COMIBASSAL - International Controllers
Internal inspection and laboratories sector
Email: comibassal@icao.int
Website: www.comibassal.com



ICAO - International Civil Aviation Organization
Tel: +392 611920111 - 611920111
Fax: +392 611920111
Email: internal_inspection@comibassal.com



Reprinted by permission of the author, the publisher and the copyright holder. Reproduction is prohibited without the author's permission.

4444

100

There is evidence that many have found self-help tools and strategies useful.

Sampling frequency (Hz)	Time (s)	Displacement (mm)	Acceleration (m/s ²)
0	0.000	0.000	0.000
1	0.001	0.001	0.001
2	0.002	0.002	0.002
3	0.003	0.003	0.003
4	0.004	0.004	0.004
5	0.005	0.005	0.005
6	0.006	0.006	0.006
7	0.007	0.007	0.007
8	0.008	0.008	0.008
9	0.009	0.009	0.009
10	0.010	0.010	0.010
11	0.011	0.011	0.011
12	0.012	0.012	0.012
13	0.013	0.013	0.013
14	0.014	0.014	0.014
15	0.015	0.015	0.015
16	0.016	0.016	0.016
17	0.017	0.017	0.017
18	0.018	0.018	0.018
19	0.019	0.019	0.019
20	0.020	0.020	0.020

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

Exceeding strength (%)	1 out of 10 N=	Exceeding by less than additional	Exceeding by at least additional 50%
10	1,000	1,000	1,000
20	1,250	1,000	1,000
30	1,500	1,000	1,000
40	1,750	1,000	1,000
50	2,000	1,000	1,000
60	2,250	1,000	1,000
70	2,500	1,000	1,000
80	2,750	1,000	1,000
90	3,000	1,000	1,000
100	3,250	1,000	1,000

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

Parameter	Estimate	Standard Error
$\beta_0 = 1.000$	1.000	0.000
$\beta_1 = 0.000$	0.000	0.000
$\beta_2 = 0.000$	0.000	0.000
$\beta_3 = 0.000$	0.000	0.000
$\beta_4 = 0.000$	0.000	0.000
$\beta_5 = 0.000$	0.000	0.000
$\beta_6 = 0.000$	0.000	0.000
$\beta_7 = 0.000$	0.000	0.000
$\beta_8 = 0.000$	0.000	0.000
$\beta_9 = 0.000$	0.000	0.000
$\beta_{10} = 0.000$	0.000	0.000
$\beta_{11} = 0.000$	0.000	0.000
$\beta_{12} = 0.000$	0.000	0.000
$\beta_{13} = 0.000$	0.000	0.000
$\beta_{14} = 0.000$	0.000	0.000
$\beta_{15} = 0.000$	0.000	0.000
$\beta_{16} = 0.000$	0.000	0.000
$\beta_{17} = 0.000$	0.000	0.000
$\beta_{18} = 0.000$	0.000	0.000
$\beta_{19} = 0.000$	0.000	0.000
$\beta_{20} = 0.000$	0.000	0.000
$\beta_{21} = 0.000$	0.000	0.000
$\beta_{22} = 0.000$	0.000	0.000
$\beta_{23} = 0.000$	0.000	0.000
$\beta_{24} = 0.000$	0.000	0.000
$\beta_{25} = 0.000$	0.000	0.000
$\beta_{26} = 0.000$	0.000	0.000
$\beta_{27} = 0.000$	0.000	0.000
$\beta_{28} = 0.000$	0.000	0.000
$\beta_{29} = 0.000$	0.000	0.000
$\beta_{30} = 0.000$	0.000	0.000
$\beta_{31} = 0.000$	0.000	0.000
$\beta_{32} = 0.000$	0.000	0.000
$\beta_{33} = 0.000$	0.000	0.000
$\beta_{34} = 0.000$	0.000	0.000
$\beta_{35} = 0.000$	0.000	0.000
$\beta_{36} = 0.000$	0.000	0.000
$\beta_{37} = 0.000$	0.000	0.000
$\beta_{38} = 0.000$	0.000	0.000
$\beta_{39} = 0.000$	0.000	0.000
$\beta_{40} = 0.000$	0.000	0.000
$\beta_{41} = 0.000$	0.000	0.000
$\beta_{42} = 0.000$	0.000	0.000
$\beta_{43} = 0.000$	0.000	0.000
$\beta_{44} = 0.000$	0.000	0.000
$\beta_{45} = 0.000$	0.000	0.000
$\beta_{46} = 0.000$	0.000	0.000
$\beta_{47} = 0.000$	0.000	0.000
$\beta_{48} = 0.000$	0.000	0.000
$\beta_{49} = 0.000$	0.000	0.000
$\beta_{50} = 0.000$	0.000	0.000
$\beta_{51} = 0.000$	0.000	0.000
$\beta_{52} = 0.000$	0.000	0.000
$\beta_{53} = 0.000$	0.000	0.000
$\beta_{54} = 0.000$	0.000	0.000
$\beta_{55} = 0.000$	0.000	0.000
$\beta_{56} = 0.000$	0.000	0.000
$\beta_{57} = 0.000$	0.000	0.000
$\beta_{58} = 0.000$	0.000	0.000
$\beta_{59} = 0.000$	0.000	0.000
$\beta_{60} = 0.000$	0.000	0.000
$\beta_{61} = 0.000$	0.000	0.000
$\beta_{62} = 0.000$	0.000	0.000
$\beta_{63} = 0.000$	0.000	0.000
$\beta_{64} = 0.000$	0.000	0.000
$\beta_{65} = 0.000$	0.000	0.000
$\beta_{66} = 0.000$	0.000	0.000
$\beta_{67} = 0.000$	0.000	0.000
$\beta_{68} = 0.000$	0.000	0.000
$\beta_{69} = 0.000$	0.000	0.000
$\beta_{70} = 0.000$	0.000	0.000
$\beta_{71} = 0.000$	0.000	0.000
$\beta_{72} = 0.000$	0.000	0.000
$\beta_{73} = 0.000$	0.000	0.000
$\beta_{74} = 0.000$	0.000	0.000
$\beta_{75} = 0.000$	0.000	0.000
$\beta_{76} = 0.000$	0.000	0.000
$\beta_{77} = 0.000$	0.000	0.000
$\beta_{78} = 0.000$	0.000	0.000
$\beta_{79} = 0.000$	0.000	0.0



the publisher - also want local, regional
 1-800-451-0001 - 212 693-8100
 local: 212-693-8100
 1-800-451-0001



4111 Marlin Ave. - Mar. Jpgg'd
Tel. 602-345-5116 • 500 MARLIN AVE.
P.O. BOX 1000000
Box C • Internet is also through southern.com



COMIBASSAL International Controllers

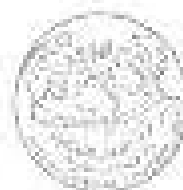
Internal inspection and laboratories sector

Accreditation: ISO 9001:2015 (scope: all services) - Certificate number: 04-0274-01-008
 Accreditation: ISO 17025:2017 (scope: all services) - Certificate number: 04-0274-01-009



Fig. 3. Graph of the number of controllers per country (see Table 1 and Table 2 for the internal control system)

- 1. Without the internal control system
- 2. Without the internal control system (including the internal control system)
- 3. Without the internal control system (including the internal control system)



4511 Florida Ave., Mexico City
 Mexico 06702-4010
 Email: info@comibassal.com
 Website: www.comibassal.com



4511 Florida Ave., Mexico City
 Tel: +52 55 55095115 - 555 55095140
 Fax: +52 55 55095140
 Email: info@comibassal.com



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Approved by a Regulatory Board of Authority for Metrology under the number 11/2019
 Approved by a Regulatory Board of Authority for Metrology under the number 11/2019

Internal inspection

2019

Table 1: Parameters for the testing and calibration

Testing type	Test type	Value of the parameter	Value of the parameter
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 2: Parameters for the testing and calibration

Testing type	Test type	Value of the parameter	Value of the parameter
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 3: Parameters for the testing and calibration

Testing type	Test type	Value of the parameter	Value of the parameter
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 4: Parameters for the testing and calibration

Testing type	Test type	Value of the parameter	Value of the parameter
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

Table 5: Parameters for the testing and calibration

Testing type	Test type	Value of the parameter	Value of the parameter
1	1.1	1.1	1.1
2	1.2	1.2	1.2
3	1.3	1.3	1.3
4	1.4	1.4	1.4
5	1.5	1.5	1.5
6	1.6	1.6	1.6
7	1.7	1.7	1.7
8	1.8	1.8	1.8
9	1.9	1.9	1.9
10	2.0	2.0	2.0
11	2.1	2.1	2.1
12	2.2	2.2	2.2
13	2.3	2.3	2.3
14	2.4	2.4	2.4
15	2.5	2.5	2.5
16	2.6	2.6	2.6
17	2.7	2.7	2.7
18	2.8	2.8	2.8
19	2.9	2.9	2.9
20	3.0	3.0	3.0

COMIBASSAL - Cairo General Field - Egypt
 Tel: +202 23333333 - Fax: +202 23333333
 Email: info@comibassal.com
 Website: www.comibassal.com



COMIBASSAL - Cairo General Field - Egypt
 Tel: +202 23333333 - Fax: +202 23333333
 Tel: +202 23333333
 Email: info@inspection.comibassal.com



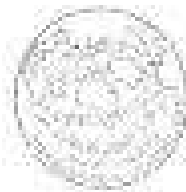
COMIBASSAL International Controllers Internal inspection and laboratories sector

Accreditation e Regulação Demand Authority for Metro-Gases sector (Nº 16.0124-01-0008)
Demand Authority e Regulação for oilfield sector (00042) sector (Nº 008.000424)



Fig. 4. Determination of the number of controllers according to Table 10 and Table 11 for the first and second cycles.

- Inspection cycle described by the graph
- ▲ Inspection cycle described by the graph
- ▲ Inspection cycle described by the graph
- ▲ Inspection cycle described by the graph
- ▲ Inspection cycle described by the graph
- ▲ Inspection cycle described by the graph



16.0124-01-0008
000424-01-0008
16.0124-01-0008
000424-01-0008



16.0124-01-0008
000424-01-0008
16.0124-01-0008
000424-01-0008



COMIBASSAL International Controllers Internal inspection and laboratories sector

Association of Egyptian General Auditors for Petroleum sector No. 2018/2019
Association of Egyptian General Auditors for Petrochemical sector No. 2018/2019

Page 1 of 12

123

Table 14: Chemicals - data for internal audits and external audits

Sampling stage no	Sample (%)	Normal value (ppm)	Acceptance of finding stage 2
1	1.0-1	0.05	0.05
2	1.01	0.05	0.05
3	1.02	0.05	0.05
4	1.03	0.05	0.05
5	1.04	0.05	0.05
6	1.05	0.05	0.05
7	1.06	0.05	0.05
8	1.07	0.05	0.05
9	1.08	0.05	0.05
10	1.09	0.05	0.05
11	1.10	0.05	0.05
12	1.11	0.05	0.05
13	1.12	0.05	0.05
14	1.13	0.05	0.05
15	1.14	0.05	0.05
16	1.15	0.05	0.05
17	1.16	0.05	0.05
18	1.17	0.05	0.05
19	1.18	0.05	0.05
20	1.19	0.05	0.05

Table 15: Chemicals - data for internal audits

Sampling stage no	Sample (%)	Normal value (ppm)	Acceptance of finding stage 2
21	1.20	0.05	0.05
22	1.21	0.05	0.05
23	1.22	0.05	0.05
24	1.23	0.05	0.05
25	1.24	0.05	0.05
26	1.25	0.05	0.05
27	1.26	0.05	0.05
28	1.27	0.05	0.05
29	1.28	0.05	0.05
30	1.29	0.05	0.05
31	1.30	0.05	0.05
32	1.31	0.05	0.05
33	1.32	0.05	0.05
34	1.33	0.05	0.05
35	1.34	0.05	0.05

Table 16: Chemicals - data for external audits

Sampling stage no	Sample (%)	Normal value (ppm)	Acceptance of finding stage 2
36	1.35	0.05	0.05
37	1.36	0.05	0.05
38	1.37	0.05	0.05
39	1.38	0.05	0.05
40	1.39	0.05	0.05
41	1.40	0.05	0.05
42	1.41	0.05	0.05
43	1.42	0.05	0.05
44	1.43	0.05	0.05
45	1.44	0.05	0.05
46	1.45	0.05	0.05
47	1.46	0.05	0.05
48	1.47	0.05	0.05
49	1.48	0.05	0.05
50	1.49	0.05	0.05

Table 17: Chemicals - data for external audits

Sampling stage no	Sample (%)	Normal value (ppm)	Acceptance of finding stage 2
51	1.50	0.05	0.05
52	1.51	0.05	0.05
53	1.52	0.05	0.05
54	1.53	0.05	0.05
55	1.54	0.05	0.05
56	1.55	0.05	0.05
57	1.56	0.05	0.05
58	1.57	0.05	0.05
59	1.58	0.05	0.05
60	1.59	0.05	0.05
61	1.60	0.05	0.05
62	1.61	0.05	0.05
63	1.62	0.05	0.05
64	1.63	0.05	0.05
65	1.64	0.05	0.05
66	1.65	0.05	0.05
67	1.66	0.05	0.05
68	1.67	0.05	0.05
69	1.68	0.05	0.05
70	1.69	0.05	0.05



COMIBASSAL - Your Better Deal - Together
We are to move - We are to move
We are to move - We are to move
We are to move - We are to move



COMIBASSAL International Controllers
Tel: +962 611111111 - +962 611111111
Fax: +962 611111111
Email: comibassal@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Information by all parties General assembly and technical committee under the guidance of the
Administrative and Regulatory Committee of the sector (ARCA) under the direction of



Fig. 1: Relationship between the ratio of the area of the sector to the area of the circle (S/S0) and the ratio of the radius of the sector to the radius of the circle (R/R0).

- Relationship between the ratio of the area of the sector to the area of the circle (S/S0) and the ratio of the radius of the sector to the radius of the circle (R/R0) for the first and second loading points
- Relationship between the ratio of the area of the sector to the area of the circle (S/S0) and the ratio of the radius of the sector to the radius of the circle (R/R0) for the first and second loading points
- ▲ Relationship between the ratio of the area of the sector to the area of the circle (S/S0) and the ratio of the radius of the sector to the radius of the circle (R/R0) for the first and second loading points



COMIBASSAL - 1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999



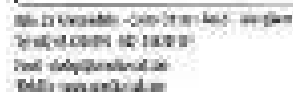
1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999
1994-1995-1996-1997-1998-1999



Feeding strategy class	Number of SAC	Percentage of total fishery ^a	Contribution to feeding guild function
0	1,403	4.56%	0.00%
1	1,495	4.67%	0.01%
2	13,413	40.9%	0.04%
3	1,863	5.69%	0.04%
4	4,963	15.0%	0.09%
5	12,207	36.9%	0.19%
6	14,403	43.4%	0.31%
7	20,403	61.4%	0.59%
8	30,403	91.4%	0.84%
9	40,403	121.4%	1.00%
10	50,403	151.4%	1.16%
11	60,403	181.4%	1.32%
12	70,403	211.4%	1.48%
13	80,403	241.4%	1.64%
14	90,403	271.4%	1.80%
15	100,403	301.4%	1.96%

Learning objective	Level 1 L1	Second Assessment L2/L3	Score based on learning objective L1/L2
1	100%	100%	100%
2	100%	100%	100%
3	100%	100%	100%
4	100%	100%	100%
5	100%	100%	100%
6	100%	100%	100%
7	100%	100%	100%
8	100%	100%	100%
9	100%	100%	100%
10	100%	100%	100%
11	100%	100%	100%
12	100%	100%	100%
13	100%	100%	100%
14	100%	100%	100%
15	100%	100%	100%
16	100%	100%	100%
17	100%	100%	100%
18	100%	100%	100%
19	100%	100%	100%
20	100%	100%	100%
21	100%	100%	100%
22	100%	100%	100%
23	100%	100%	100%
24	100%	100%	100%
25	100%	100%	100%
26	100%	100%	100%
27	100%	100%	100%
28	100%	100%	100%
29	100%	100%	100%
30	100%	100%	100%
31	100%	100%	100%
32	100%	100%	100%
33	100%	100%	100%
34	100%	100%	100%
35	100%	100%	100%
36	100%	100%	100%
37	100%	100%	100%
38	100%	100%	100%
39	100%	100%	100%
40	100%	100%	100%
41	100%	100%	100%
42	100%	100%	100%
43	100%	100%	100%
44	100%	100%	100%
45	100%	100%	100%
46	100%	100%	100%
47	100%	100%	100%
48	100%	100%	100%
49	100%	100%	100%
50	100%	100%	100%
51	100%	100%	100%
52	100%	100%	100%
53	100%	100%	100%
54	100%	100%	100%
55	100%	100%	100%
56	100%	100%	100%
57	100%	100%	100%
58	100%	100%	100%
59	100%	100%	100%
60	100%	100%	100%
61	100%	100%	100%
62	100%	100%	100%
63	100%	100%	100%
64	100%	100%	100%
65	100%	100%	100%
66	100%	100%	100%
67	100%	100%	100%
68	100%	100%	100%
69	100%	100%	100%
70	100%	100%	100%
71	100%	100%	100%
72	100%	100%	100%
73	100%	100%	100%
74	100%	100%	100%
75	100%	100%	100%
76	100%	100%	100%
77	100%	100%	100%
78	100%	100%	100%
79	100%	100%	100%
80	100%	100%	100%
81	100%	100%	100%
82	100%	100%	100%
83	100%	100%	100%
84	100%	100%	100%
85	100%	100%	100%
86	100%	100%	100%
87	100%	100%	100%
88	100%	100%	100%
89	100%	100%	100%
90	100%	100%	100%
91	100%	100%	100%
92	100%	100%	100%
93	100%	100%	100%
94	100%	100%	100%
95	100%	100%	100%
96	100%	100%	100%
97	100%	100%	100%
98	100%	100%	100%
99	100%	100%	100%
100	100%	100%	100%

Particulars	at ending rate	at ending rate
Original MRP of	1,000	1,000
10% discount	(100)	(100)
10% commission	(100)	(100)
10% overhead charges	(100)	(100)
Final Selling Price	600	600
Profit	400	400





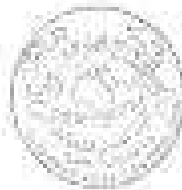
COMIBASSAL International Controllers Internal inspection and laboratories sector

Authorized by a Regulation General de Inspección de Petróleos number 045-2018-E-020
Autorizado por el Reglamento General de Inspección de Petróleos número 045-2018-E-020



Fig. 4. Evaporative Emission Chart, filling vapors according to Table 10 and Table 11 for the first and second loading cycle

- Evaporative emission from the first loading cycle
- Evaporative emission from the second loading cycle
- ▲ Evaporative emission from the total fuel
- ▲ Evaporative emission from the total fuel



City of Lima - Call Center - English
01 800 000000 - 01 800 000000
Email: info@comibassal.com
Website: www.comibassal.com



Peru Office - Lima, Peru
Tel: 0051 1 800 000000 - 0051 1 800 000000
Fax: 0051 1 800 000000
Email: info@comibassal.com



COMIBASSAL International Controllers **Internal inspection and laboratories sector**

Asociación Interamericana de Controladores Internacionales
 Interamerican Association of Internal Controllers

0-0000-0000-0000

100

Table 10. Internal inspection and laboratories sector

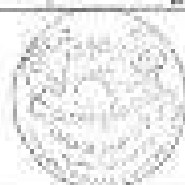
Country/region no.	Area (%)	Performance (p.p.)	Efficiency of facilities (p.p.)
1	1.00	0.00	0.00
2	1.00	0.00	0.00
3	1.00	0.00	0.00
4	1.00	0.00	0.00
5	1.00	0.00	0.00
6	1.00	0.00	0.00
7	1.00	0.00	0.00
8	1.00	0.00	0.00
9	1.00	0.00	0.00
10	1.00	0.00	0.00
11	1.00	0.00	0.00
12	1.00	0.00	0.00
13	1.00	0.00	0.00
14	1.00	0.00	0.00
15	1.00	0.00	0.00
16	1.00	0.00	0.00
17	1.00	0.00	0.00
18	1.00	0.00	0.00
19	1.00	0.00	0.00
20	1.00	0.00	0.00

Table 11. Internal inspection and laboratories sector

Country/region no.	Area (%)	Performance (p.p.)	Efficiency of facilities (p.p.)
21	1.00	0.00	0.00
22	1.00	0.00	0.00
23	1.00	0.00	0.00
24	1.00	0.00	0.00
25	1.00	0.00	0.00
26	1.00	0.00	0.00
27	1.00	0.00	0.00
28	1.00	0.00	0.00
29	1.00	0.00	0.00
30	1.00	0.00	0.00
31	1.00	0.00	0.00
32	1.00	0.00	0.00
33	1.00	0.00	0.00
34	1.00	0.00	0.00
35	1.00	0.00	0.00

Table 12. Consolidation of results

Area (%)	Performance (p.p.)	Efficiency of facilities (p.p.)
Internal MTN	0.00	0.00
By area	0.00	0.00
By area (p.p.)	0.00	0.00
By area (p.p.)	0.00	0.00
By area (p.p.)	0.00	0.00
By area (p.p.)	0.00	0.00



COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal



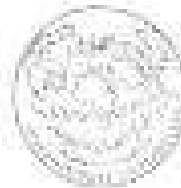
COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal
 COMIBASSAL - Comibassal - Comibassal



doi:10.1371/journal.pone.0142422.g002



- III. Measurement of ρ_{eff} from the first normal mode.
 - III. Measurement of ρ_{eff} from the oscillating part.
 - III. Measurement of ρ_{eff} by the second normal mode.
- IV. Conclusion and remarks
- ACKNOWLEDGMENTS



4850 Riverdale Ave., Atlanta, GA 30340
 Tel: 404.525.0100 FAX: 404.525.1102
 E-mail: info@the-american-ecological.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by a Egyptian Board of Accreditation (EBC) under no. 100/2015
Accredited by a Egyptian Accreditation Council (EAC) under no. 100/2015

Page 1 of 10

2015

Table 1: Internal inspection and laboratories sector

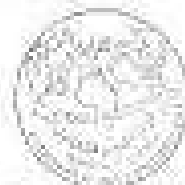
Inspection type	Number of inspections	Number of inspections	Number of inspections
1	1000	1000	1000
2	1000	1000	1000
3	1000	1000	1000
4	1000	1000	1000
5	1000	1000	1000
6	1000	1000	1000
7	1000	1000	1000
8	1000	1000	1000
9	1000	1000	1000
10	1000	1000	1000
11	1000	1000	1000
12	1000	1000	1000
13	1000	1000	1000
14	1000	1000	1000
15	1000	1000	1000
16	1000	1000	1000
17	1000	1000	1000
18	1000	1000	1000
19	1000	1000	1000
20	1000	1000	1000

Table 2: Internal inspection and laboratories sector

Inspection type	Number of inspections	Number of inspections	Number of inspections
1	1000	1000	1000
2	1000	1000	1000
3	1000	1000	1000
4	1000	1000	1000
5	1000	1000	1000
6	1000	1000	1000
7	1000	1000	1000
8	1000	1000	1000
9	1000	1000	1000
10	1000	1000	1000
11	1000	1000	1000
12	1000	1000	1000
13	1000	1000	1000
14	1000	1000	1000
15	1000	1000	1000
16	1000	1000	1000
17	1000	1000	1000
18	1000	1000	1000
19	1000	1000	1000
20	1000	1000	1000

Table 3: Internal inspection and laboratories sector

Inspection type	Number of inspections	Number of inspections
1	1000	1000
2	1000	1000
3	1000	1000
4	1000	1000
5	1000	1000
6	1000	1000
7	1000	1000
8	1000	1000
9	1000	1000
10	1000	1000
11	1000	1000
12	1000	1000
13	1000	1000
14	1000	1000
15	1000	1000
16	1000	1000
17	1000	1000
18	1000	1000
19	1000	1000
20	1000	1000



COMIBASSAL - COMIBASSAL - COMIBASSAL
1000 1000 1000
1000 1000 1000
1000 1000 1000



1000 1000 1000
1000 1000 1000
1000 1000 1000
1000 1000 1000
1000 1000 1000



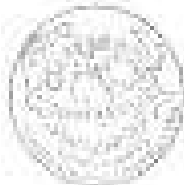
COMIBASSAL International Controllers Internal inspection and laboratories sector

Accreditation: Egyptian General Authority for Metrology under No. 24/2019-E-004
Accreditation: Egyptian General Authority for Metrology (EGAM) under No. 0076/004



Fig. Internal compressed air flow, 2000 L/min, as per Table 1, Table 2 and Table 3 for the first and second loading cycle.

- Flow rate from the first loading cycle
- Flow rate from the second loading cycle
- Flow rate from the third loading cycle
- Flow rate from the fourth loading cycle
- Flow rate from the fifth loading cycle



Dr. El-Azab El-Azab - General Manager
Tel: 011-4000-1000
Email: elazab@comibassal.com
Website: www.comibassal.com



Dr. El-Azab El-Azab - General Manager
Tel: 011-4000-1000
Email: elazab@comibassal.com
Website: www.comibassal.com



COMIBASSAI International Controllers Internal inspections and laboratories sector

Accreditado por el poder Judicial de Colombia under No. 000000000000
Accreditado por el poder Judicial de Colombia under No. 000000000000

SECCION 000000000000

000

Table 000: Financial statements for the reporting period and reporting year

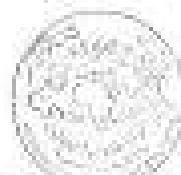
Reporting range (s)	Value (COP)	Amount (COP)	Amount (COP)
01	1,000	1,000	1,000
02	1,000	1,000	1,000
03	1,000	1,000	1,000
04	1,000	1,000	1,000
05	1,000	1,000	1,000
06	1,000	1,000	1,000
07	1,000	1,000	1,000
08	1,000	1,000	1,000
09	1,000	1,000	1,000
10	1,000	1,000	1,000
11	1,000	1,000	1,000
12	1,000	1,000	1,000
13	1,000	1,000	1,000
14	1,000	1,000	1,000
15	1,000	1,000	1,000
16	1,000	1,000	1,000
17	1,000	1,000	1,000
18	1,000	1,000	1,000
19	1,000	1,000	1,000
20	1,000	1,000	1,000

Table 000: Financial statements for the reporting period and reporting year

Reporting range (s)	Value (COP)	Amount (COP)	Amount (COP)
01	1,000	1,000	1,000
02	1,000	1,000	1,000
03	1,000	1,000	1,000
04	1,000	1,000	1,000
05	1,000	1,000	1,000
06	1,000	1,000	1,000
07	1,000	1,000	1,000
08	1,000	1,000	1,000
09	1,000	1,000	1,000
10	1,000	1,000	1,000
11	1,000	1,000	1,000
12	1,000	1,000	1,000
13	1,000	1,000	1,000
14	1,000	1,000	1,000
15	1,000	1,000	1,000
16	1,000	1,000	1,000
17	1,000	1,000	1,000
18	1,000	1,000	1,000
19	1,000	1,000	1,000
20	1,000	1,000	1,000

Table 000: Financial statements for the reporting period and reporting year

Reporting range (s)	Value (COP)	Amount (COP)	Amount (COP)
01	1,000	1,000	1,000
02	1,000	1,000	1,000
03	1,000	1,000	1,000
04	1,000	1,000	1,000
05	1,000	1,000	1,000
06	1,000	1,000	1,000
07	1,000	1,000	1,000
08	1,000	1,000	1,000
09	1,000	1,000	1,000
10	1,000	1,000	1,000
11	1,000	1,000	1,000
12	1,000	1,000	1,000
13	1,000	1,000	1,000
14	1,000	1,000	1,000
15	1,000	1,000	1,000
16	1,000	1,000	1,000
17	1,000	1,000	1,000
18	1,000	1,000	1,000
19	1,000	1,000	1,000
20	1,000	1,000	1,000



COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI



COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI
COMIBASSAI - COMIBASSAI - COMIBASSAI



COMIBASSAI International Controllers Internal inspection and laboratories sector

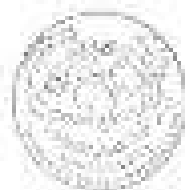
accredited by Egyptian General Authority for Metrology under No. 04/2013-2018
Accredited by Egyptian General Authority for Metrology under No. 04/2013-2018



Fig. 0094-2100 Line

Fig. 0094-2100 Line: String force according to table 0094-2100 for the first and second loading cycle

- Substrate points from the first loading cycle
- Substrate points from the second loading cycle
- ▲ Substrate points from the third loading cycle



100-11-1000000 - 100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000

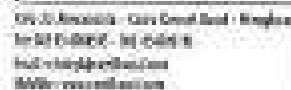


100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000
100-11-1000000 - 100-11-1000000



Transformation no.	Land (m ²)	Normalised $\delta^{15}\text{N}$ (‰)	Attribution of feeding party
1	1,584	0.000	0.000
2	240	0.000	0.000
3	1,111	0.000	0.000
4	1,111	0.000	0.000
5	2,844	0.000	0.000
6	1,111	0.000	0.000
7	1,111	0.000	0.000
8	1,111	0.000	0.000
9	1,111	0.000	0.000
10	1,111	0.000	0.000
11	1,111	0.000	0.000
12	1,111	0.000	0.000
13	1,111	0.000	0.000
14	1,111	0.000	0.000
15	1,111	0.000	0.000
16	1,111	0.000	0.000
17	1,111	0.000	0.000
18	1,111	0.000	0.000
19	1,111	0.000	0.000
20	1,111	0.000	0.000
21	1,111	0.000	0.000
22	1,111	0.000	0.000
23	1,111	0.000	0.000
24	1,111	0.000	0.000
25	1,111	0.000	0.000
26	1,111	0.000	0.000
27	1,111	0.000	0.000
28	1,111	0.000	0.000
29	1,111	0.000	0.000
30	1,111	0.000	0.000
31	1,111	0.000	0.000
32	1,111	0.000	0.000
33	1,111	0.000	0.000
34	1,111	0.000	0.000
35	1,111	0.000	0.000
36	1,111	0.000	0.000
37	1,111	0.000	0.000
38	1,111	0.000	0.000
39	1,111	0.000	0.000
40	1,111	0.000	0.000
41	1,111	0.000	0.000
42	1,111	0.000	0.000
43	1,111	0.000	0.000
44	1,111	0.000	0.000
45	1,111	0.000	0.000
46	1,111	0.000	0.000
47	1,111	0.000	0.000
48	1,111	0.000	0.000
49	1,111	0.000	0.000
50	1,111	0.000	0.000
51	1,111	0.000	0.000
52	1,111	0.000	0.000
53	1,111	0.000	0.000
54	1,111	0.000	0.000
55	1,111	0.000	0.000
56	1,111	0.000	0.000
57	1,111	0.000	0.000
58	1,111	0.000	0.000
59	1,111	0.000	0.000
60	1,111	0.000	0.000
61	1,111	0.000	0.000
62	1,111	0.000	0.000
63	1,111	0.000	0.000
64	1,111	0.000	0.000
65	1,111	0.000	0.000
66	1,111	0.000	0.000
67	1,111	0.000	0.000
68	1,111	0.000	0.000
69	1,111	0.000	0.000
70	1,111	0.000	0.000
71	1,111	0.000	0.000
72	1,111	0.000	0.000
73	1,111	0.000	0.000
74	1,111	0.000	0.000
75	1,111	0.000	0.000
76	1,111	0.000	0.000
77	1,111	0.000	0.000
78	1,111	0.000	0.000
79	1,111	0.000	0.000
80	1,111	0.000	0.000
81	1,111	0.000	0.000
82	1,111	0.000	0.000
83	1,111	0.000	0.000
84	1,111	0.000	0.000
85	1,111	0.000	0.000
86	1,111	0.000	0.000
87	1,111	0.000	0.000
88	1,111	0.000	0.000
89	1,111	0.000	0.000
90	1,111	0.000	0.000
91	1,111	0.000	0.000
92	1,111	0.000	0.000
93	1,111	0.000	0.000
94	1,111	0.000	

Feeding stage (m)	Leaf (%)	Survival percent (%)	Conversion of feeding percent (%)
10	24.2	0.000	0.00
15	24.0	0.000	0.00
20	23.5	0.000	0.00
25	20.9	0.000	0.00
30	20.0	0.000	0.00
35	20.0	0.000	0.00
40	16.4	0.000	0.00
45	16.0	0.000	0.00
50	15.0	0.000	0.00
55	15.0	0.000	0.00
60	14.0	0.000	0.00

[illegible]

1701 Morris Ave., Westfield, NJ 07090
Tel: 908.411.7276 • Fax: 908.411.7274
E-mail: info@harsco.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Assessment of the Effectiveness of the Quality Management System (ISO 9001:2015)
Assessment of the Effectiveness of the Quality Management System (ISO 9001:2015)

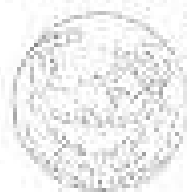
Conclusion

The internal audit results show that the quality management system of the auditor is in full compliance with the standards required for the project. The internal audit results show that the quality management system of the auditor is in full compliance with the standards required for the project.

Table 1 - Audit results

Location	Findings (No.)	Findings (No.)	Findings (No.)
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06
20/000-0000	174.88	159.87	1.06

Signature
Prof. Dr. Roberto de Almeida



Signature
Prof. Dr. Roberto de Almeida

COMIBASSAL - Comissão Inter municipal de Bastantes
Rua 100 - 00000 - 00000000
Fone: 0000-00000000
E-mail: comibassal@comibassal.com.br
Website: www.comibassal.com.br



COMIBASSAL - Comissão Inter municipal de Bastantes
Rua 100 - 00000 - 00000000
Fone: 0000-00000000
E-mail: comibassal@comibassal.com.br



OPV
OVERSEAS PROTECTION VOUCHER







PURPOSE OF APPLICATION: Minimum 50000 Saudi Riyal and less than 1000000
 The beneficiary who is employed in Saudi Arabia and is applying for OPV

Contractor Company	MOHAMED ALI AL-SAYED & CO. LTD. شركة محمد علي السيد وشركاه	Contractor Company	MOHAMED ALI AL-SAYED & CO. LTD. شركة محمد علي السيد وشركاه
Contract No.	MOHAMED ALI AL-SAYED & CO. LTD.	Contractor Company	MOHAMED ALI AL-SAYED & CO. LTD.
Contract Value	1000000000	Contractor Company	MOHAMED ALI AL-SAYED & CO. LTD.

EXPLANATION OF VOUCHER TO BE ISSUED:

Description	Amount	Unit
Contract Value	1000000000	SAR

DECLARATION OF VOUCHER TO BE ISSUED:

I, the undersigned, declare that the above information is true and correct and that the beneficiary is eligible for the OPV.

SIGNATURE OF THE CONTRACTOR:

MOHAMED ALI AL-SAYED & CO. LTD.

SIGNATURE OF THE BENEFICIARY:

MOHAMED ALI AL-SAYED & CO. LTD.

DECLARATION OF VOUCHER TO BE ISSUED:

I, the undersigned, declare that the above information is true and correct and that the beneficiary is eligible for the OPV.

SIGNATURE OF THE CONTRACTOR:

MOHAMED ALI AL-SAYED & CO. LTD.

SIGNATURE OF THE BENEFICIARY:

MOHAMED ALI AL-SAYED & CO. LTD.

22:00

[illegible]

MATERIAL INSPECTION REQUEST



الهيئة العامة
للتخطيط والبنية التحتية
(GARBU)



الهيئة العامة للتخطيط
(Ministry of Planning)



Contractor Company	Eng. Abdelsalam ElFekher Contracting Co.	Designer Company	(SPECTRUM) Engineering Consulting Office																
Issued by Contractor	Name	Date/Serial Number	Time																
	Eng. Mohamed Ismael	11/6/2023 PLT (15)	12:00 PM																
Received by GARBU CONSULTANT	Eng. Mazen Essamy	MIR	<table border="1"> <tr> <th>CL</th> <th>C2</th> <th>C3</th> <th>DO</th> <th>MM</th> <th>YY</th> <th>HH</th> <th>MM</th> </tr> <tr> <td>385</td> <td>EW</td> <td>CS</td> <td>12</td> <td>6</td> <td>23</td> <td>3</td> <td>0</td> </tr> </table>	CL	C2	C3	DO	MM	YY	HH	MM	385	EW	CS	12	6	23	3	0
CL	C2	C3	DO	MM	YY	HH	MM												
385	EW	CS	12	6	23	3	0												

CODE-1	S1 to S21	D1 to S3	Kp XXX Note
CODE-2	Station Reference	Depot Reference	For Kilometer point only Start Km is used
CODE-3	Work Activity		
CODE-4	Sub Element of Activity		

Description of Materials	AT LAYER (SUB BALLAST 2)				
Location to be Used	From	385+500	TO	386+007.5	
MAR & UIR Approval No	UIR SB (007)	Date	16/5/2023		
	UIR SB (011)		28/5/2023		
	UIR SG (012)		30/3/2023		
	M.A.R.(QT SB 2)		18/5/2023		
Supplier Name					
Test Requirement	PLATE LOAD TEST ON FILL LAYER FERMA	Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-41.2) VERSION 2 BY CIVECON GROUP		
Reference Photos	No/Yes	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	PLT BY Comibassal LABORATORY	NUMBER	20	13/6/2023	
2					
3					
4					
Comments by: Eng. Mazen Essamy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allatif (ER)			
1-The Plate Load Test Result by third party is Approved.		1-9 Point was carried- out by (Comibassal) on Sub ballast layer 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. Mohamed Ismael			A
QA/QC *	Eng. Mazen Essamy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allatif		2023/15/6	AWC

* Designer

** Alignment/Bridges/ Culvert only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian Ministry of Supply for Petroleum under No. 242/2011-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081/2016/EA

Technical report

of Plate Loading Test (DIN 18134)

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة عبد السلام القلي للمقاولات
Project	:	ELECTRIC EXPRESS TRAIN
Sample	:	Subballast layer (2)
Station	:	St(385+525)to st(385+750)
Date of Test	:	12/06/2023
QC	:	1405

Kla 23, Mansouria - Cairo Smart Road - Wazany
M: 011 0 60605 - 02 0421161
Email : info@comibassal.com
Website : www.comibassal.com



49 El Hareia Ave. Alex, Egypt
Tel: 002 033926176 - 002 033931482
Fax :002 033980476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/2015-10-2000
Accredited by : Egyptian Accreditation Council (EGAC) under No. 001700/16

Introduction:

The Plate Load test is designed to determine the vertical deformation and strength characteristics of soil by assessing the force and amount of penetration with time when a rigid plate is made to penetrate the soil.

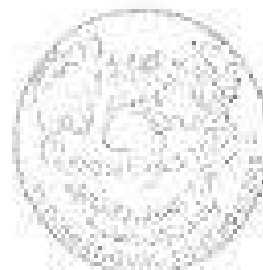
The test is to be carried out on the native soil according to German specifications DIN 18134.

Test methods :

- 1- The German standard DIN 18134 was applied to define the apparatus used, the loading system, test conditions, and procedure for plate load test.
- 2- Loading plates with a diameter of 600 mm have a thickness of 25mm and are provided with equally spaced stiffeners with even upper faces parallel to the plate bottom face to allow 300 mm plate to be placed on top of it.
- 3- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 700 bar capacity, which is capable of applying and releasing the load stages.
- 4- The dial gauge used to measure the plate settlement has a resolution of 0.01mm and the lever ratio was equal to 1.
- 5- The temperature at the time of the test was 25°C.
- 6- The plate was carried out on a native soil (sand-gravel). The test surface area was levelled and the plate was bedded on this surface.
- 7- The hydraulic jack was placed on the middle of, and at normal to, the loading plate beneath the reaction loading system and secured against tilting.
- 8- The reaction loading system was a heavy multi-purpose excavator (more than 30 ton).

Description of experiment:

- 1- Loading, unloading and reloading regime were applied according to DIN 18134 for the plate load test to estimate the resilient modulus.
- 2- Prior to the test, the force transducer and dial gauge were set to zero, after which a load was applied corresponding to a stress of 0.01 MN/m².
- 3- In the first loading cycle, the load was increased until a normal stress of 0.25 MN/m² was reached, and the loading increment was 0.025 MN/m². This load was released in four stages.
- 4- Following unloading, a further second loading cycle was carried out, in which, the load was increased only to the penultimate stage of the first cycle.



40 El Horria Ave. - Cairo Desert Road - Heliopolis
Tel: 002 03 4041111 - 002 0341111
Email : info@comibassal.com
Website : www.comibassal.com



40 El Horria Ave. - Alex, Egypt
Tel: 002 033600176 - 002 033931483
Fax : 002 033999476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 34/20-21-2011
Accredited by: Egyptian Accreditation Council (EGAC) under No. 001706/14

54(205+52 51) 008

606

Table 1: 1 measured values for first loading cycle and unloading cycle

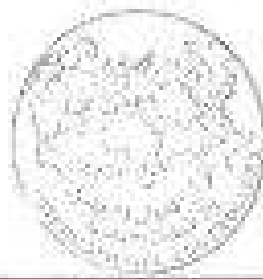
Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain rate of loading plate (ε/mm)
1	1.434	0.005	0.05
2	7.81	0.029	0.30
3	14.35	0.058	0.71
4	21.31	0.079	0.33
5	28.26	0.108	0.05
6	35.21	0.129	0.35
7	42.17	0.158	0.11
8	49.12	0.179	0.40
9	56.08	0.208	0.13
10	63.03	0.235	0.61
11	70.1	0.258	0.40
12	76.55	0.280	0.60
13	83.49	0.298	0.40
14	89.45	0.319	0.33
15	95.41	0.339	0.44
16	1.434	0.005	0.33

Table 1: 2 measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain rate of loading plate (ε/mm)
17	1.435	0.005	0.22
18	7.81	0.029	0.30
19	14.35	0.058	0.33
20	21.31	0.079	0.30
21	28.26	0.108	0.41
22	35.21	0.129	0.40
23	42.17	0.158	0.30
24	49.12	0.179	0.60
25	56.08	0.208	0.40
26	63.03	0.235	0.30

Table 2: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.339	0.290
ϵ_{max} (mm)	0.61	0.21
ΔL (mm) (0.15 mm/g)	1.51	0.00
σ_y (MPa) (0.079 MPa/g)	0.079	0.000
ϵ_y (mm) (0.005 mm/g)	0.005	0.000
Factor	1.02	



Elia 21 Alexandria - Cairo Desert Road - Memphis
Tel: 002 014 00131 - 002 014 00131
Email: info@comibassal.com
Website: www.comibassal.com



49 El Henia Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033904476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 383/2018-01-ETM
Accredited by : Egyptian Accreditation Council (EGAC) under No. 006300116

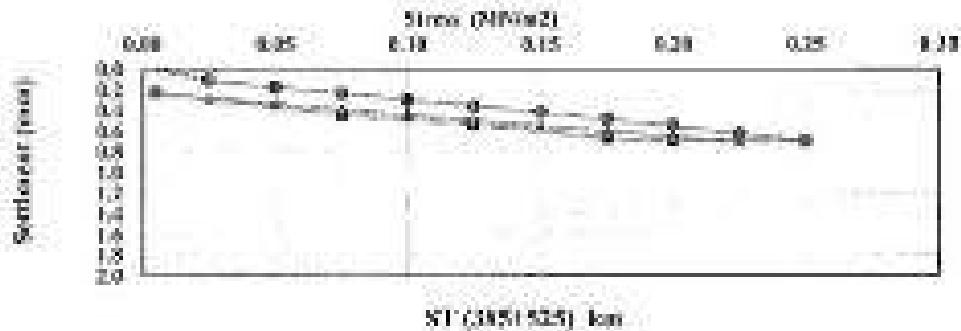


Fig. 1: Load-settlement curve, fitting curves according to Table 1 and Table 2 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the 2nd loading cycle
- Measurement points from the second loading cycle
- Settlement in mm
- σ_v Vertical stress (MPa)



Elk. 31 Alexandria - Elras Elsart Road - Masara
Tel: 002 01 004195 - 001 00420181
Email: info@comibassal.com
Website: www.comibassal.com



49 El Hooria Ave. Alex, Egypt
Tel: 002- 033920174 - 002 033931463
Fax: 002-033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/2011-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081706/16

SIPTMS-5504 KM

500

Table 4: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (T) kN	Normal stress (kN/M ²)	Reduction of loading plate mm
0	1.114	0.005	0.00
1	7.07	0.009	0.18
2	14.14	0.008	0.16
3	21.21	0.079	0.22
4	28.28	0.108	0.27
5	35.35	0.117	0.33
6	42.42	0.138	0.38
7	49.49	0.179	0.47
8	56.56	0.188	0.52
9	63.63	0.214	0.58
10	70.7	0.238	0.68
11	77.76	0.308	0.84
12	84.83	0.179	0.52
13	91.86	0.119	0.32
14	98.91	0.079	0.18
15	1.114	0.008	0.15

Table 5: Measured values for several loading cycle

Loading stage no.	Load (T) kN	Normal stress (kN/M ²)	Reduction of loading plate mm
16	1.114	0.005	0.15
18	7.07	0.015	0.21
17	14.14	0.078	0.15
18	21.21	0.078	0.24
19	28.28	0.088	0.18
20	35.35	0.118	0.11
21	42.42	0.138	0.49
22	49.49	0.178	0.15
23	56.56	0.208	0.28
24	63.63	0.117	0.15

Table 6: Comparison of results

Parameter	1st loading cycle	1st unloading cycle
σ_{max} (kN/M ²)	0.238	0.258
σ_y (kN/M ²)	0.008	0.141
σ_x (kN/M ²)	0.001	0.001
σ_z (kN/M ²)	0.212	0.064
σ_{max} (kN/M ²)	181.52	200.45
Reduction	1.88	

Kilo 19 Alexandria - Cyber Street Road - Heliopolis
Tel: 002 430605 - 002 8641161
Email: info@comibassal.com
Website: www.comibassal.com



49 El-Horria Ave. Alex, Egypt
Tel: 002 433926176 - 002 433931482
Fax: 002 053980476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/20-01-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 001706/1A

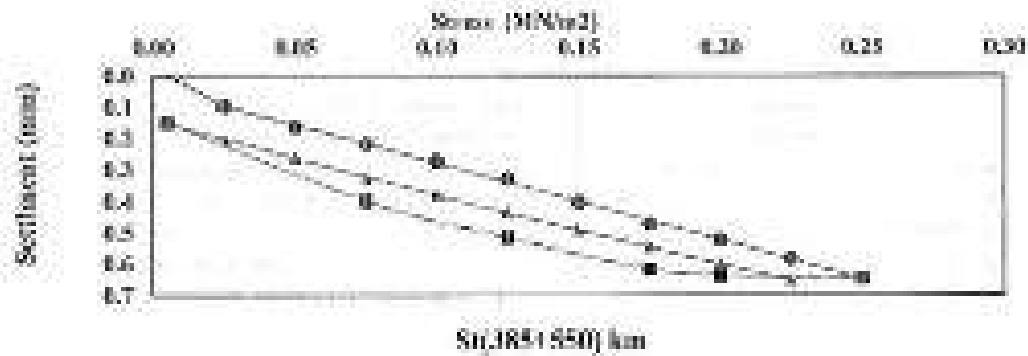


Fig. 2: Total settlement curves, fitting curves according to Table 4 and Table 5 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement in mm
- σ_v Vertical stress (MN/m²)



40 El Hamla Ave. Alex, Egypt
Tel: 002 033930176 - 002 033931482
Email: info@comibassal.com
Website: www.comibassal.com



40 El Hamla Ave. Alex, Egypt
Tel: 002 033930176 - 002 033931482
Fax: 002 033990475
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 24/20-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 081708/2014

S1(285)5752/104

000

Table (1): Measured values for first loading cycle and unloading cycle

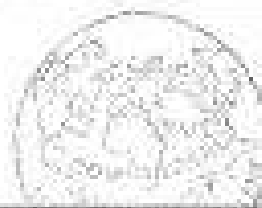
Loading stage no.	Load (P) kN	Nominal stress (σ_n) MPa	Settlement of loading plate S (mm)
0	1.414	0.000	0.00
1	7.07	0.014	0.08
2	14.14	0.028	0.15
3	21.21	0.042	0.24
4	28.28	0.056	0.38
5	35.35	0.070	0.50
6	42.42	0.084	0.68
7	49.49	0.098	0.92
8	56.56	0.112	0.98
9	63.63	0.126	0.98
10	70.7	0.140	0.73
11	77.78	0.154	0.73
12	84.85	0.168	0.78
13	91.92	0.182	0.58
14	98.99	0.196	0.30
15	1.414	0.000	0.18

Table (2): Measured values for second loading cycle

Loading stage no.	Load (P) kN	Nominal stress (σ_n) MPa	Settlement of loading plate S (mm)
16	1.414	0.000	0.18
17	7.07	0.014	0.28
18	14.14	0.028	0.28
19	21.21	0.042	0.30
20	28.28	0.056	0.30
21	35.35	0.070	0.42
22	42.42	0.084	0.47
23	49.49	0.098	0.47
24	56.56	0.112	0.54
25	63.63	0.126	0.52
26	70.7	0.140	0.78

Table (3): Compilation of results

Parameters	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.196	0.196
σ_y (MPa)	0.000	0.196
σ_u (max) (MPa)	0.000	1.791
σ_u (min) (MPa)	0.000	1.743
P_{cr} (kN/cy (avg))	155.24	155.39
Settlement		1.00



Old 21 Necropolis - Cairo Desert Road - Heliopolis
Tel: 002 00 4746001 - 002 004746111
Email: info@comibassal.com
Website: www.comibassal.com



49 El-Barda Ave. Alex, Egypt
Tel: 002 033928176 - 002 033931482
Fax: 002 033900478
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/020-EG-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081706/14

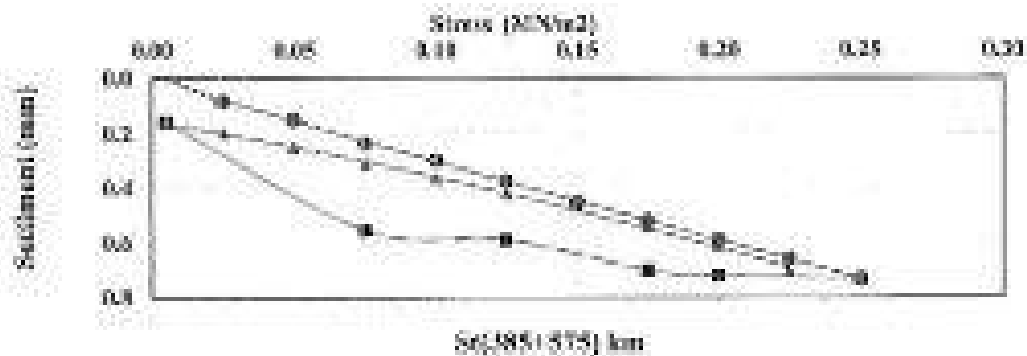
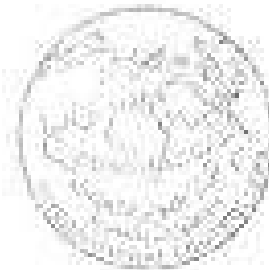


Fig. 3: Load-settlement curves, fitting curves according to Table 7 and Table 8 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement in mm
- σ_0 Normal stress MN/m²



Off: 21 El-Horadia - Cairo Desert Road - Heliopolis
Tel: 002 00 474651 - 00 47461111
Email: info@comibassal.com
Website: www.comibassal.com



49 El-Horadia Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033990478
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by - Egyptian General Authority for Petroleum under No. 34/20-21-2011
Accredited by - Egyptian Accreditation Council (EGAC) under No. 000706/14

50385-60011M

600

Table 10: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Settlement of loading plate S (mm)
0	1.04	0.005	0.00
1	7.07	0.009	0.00
2	14.14	0.009	0.07
3	21.21	0.009	0.24
4	28.28	0.009	0.30
5	35.35	0.009	0.38
6	42.42	0.009	0.44
7	49.49	0.009	0.51
8	56.56	0.009	0.56
9	63.63	0.009	0.63
10	70.7	0.009	0.70
11	77.76	0.009	0.80
12	84.83	0.009	0.87
13	91.89	0.009	0.94
14	98.96	0.009	0.95
15	1.04	0.005	0.77

Table 11: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Settlement of loading plate S (mm)
16	1.04	0.008	0.07
17	7.07	0.005	0.23
18	14.14	0.008	0.28
19	21.21	0.009	0.36
20	28.28	0.009	0.41
21	35.35	0.009	0.49
22	42.42	0.009	0.54
23	49.49	0.009	0.58
24	56.56	0.009	0.64
25	63.63	0.009	0.70

Table 12: Consolidation of results

Parameter	1st loading cycle	2nd loading cycle
Normal Load (kN)	0.158	0.285
σ_1 (mm)	0.005	0.005
σ_2 (mm/ATG ¹⁰⁰)	2.008	1.651
σ_3 (mm/ATG ¹⁰⁰)	1.381	1.151
σ_4 (mm/ATG ¹⁰⁰)	1.0536	1.049
Settlement	1.34	

Site 21 El-Horria - Cairo Desert Road - Mersa Matruh
Tel: 002 03430151 - 002 03430156
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033980476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 24/20-LE-2003
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031705/14

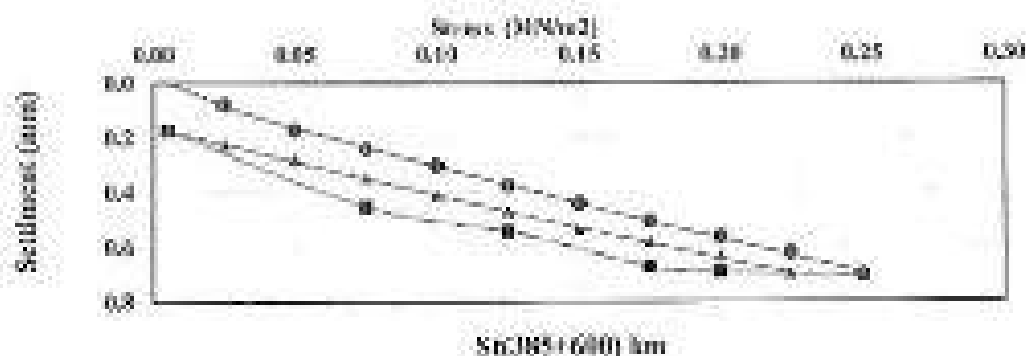


Fig. 4: Load-settlement curves, fitting curves according to Table 10 and Table 11 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement curve
- σ_p Maximal stress (MN/m²)



Kilo 15 Alexandria - Cyber Desert Road - Meghara
Tel: 002 33474005 - 002 33471181
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave, Alex/Egypt
Tel: 002 333928176 - 002 333931482
Fax: 002 333900475
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by - Egyptian General Authority for Petroleum under No. 001/2018-25-EGG
 Accredited by - Egyptian Accreditation Council (EGAC) under No. 000706/1A

SI(385)625) KM

100

Table 10: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Normal stress (p) MPa	Settlement at loading plate S (mm)
0	1.14	0.004	0.00
1	5.89	0.025	0.30
2	14.34	0.060	0.77
3	21.21	0.075	0.91
4	25.26	0.100	0.98
5	25.25	0.125	0.95
6	42.41	0.190	0.43
7	45.45	0.175	0.47
8	45.45	0.200	0.50
9	55.65	0.225	0.60
10	78.7	0.290	0.95
11	85.85	0.300	0.95
12	10.47	0.175	0.55
13	20.15	0.125	0.54
14	11.21	0.075	0.45
15	1.15	0.005	0.15

Table 11: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Normal stress (p) MPa	Settlement of loading plate S (mm)
15	1.14	0.004	0.15
16	7.87	0.035	0.90
17	14.13	0.060	0.15
18	11.21	0.075	0.50
19	10.14	0.060	0.54
20	20.15	0.125	0.40
21	12.45	0.075	0.15
22	10.47	0.075	0.50
23	56.15	0.300	0.40
24	55.65	0.275	0.40

Table 12: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
(q_{lim}) MPa	0.300	0.190
s_u (mm)	0.037	0.125
a_1 (mm ² /N ^{0.5})	2.408	1.001
a_2 (mm ² /N ^{0.5})	0.111	1.581
$C = 1.2(a_1/a_2)$	186.11	75.45
$C(2E)$	1.09	



Elife 23 Alexandria - Cairo Desert Road - Mergham
 Tel: 002 03 490105 - 002 03 09110
 Email: des@comibassal.com
 Website: www.comibassal.com



40 El Horria Ave. Alex, Egypt
 Tel: 002 033900176 - 002 033931482
 Fax: 002 033900476
 Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by - Egyptian General Authority for Petroleum under No. 387/2011-21-2011
Accredited by - Egyptian Accreditation Council (EGAC) under No. 0007001/A

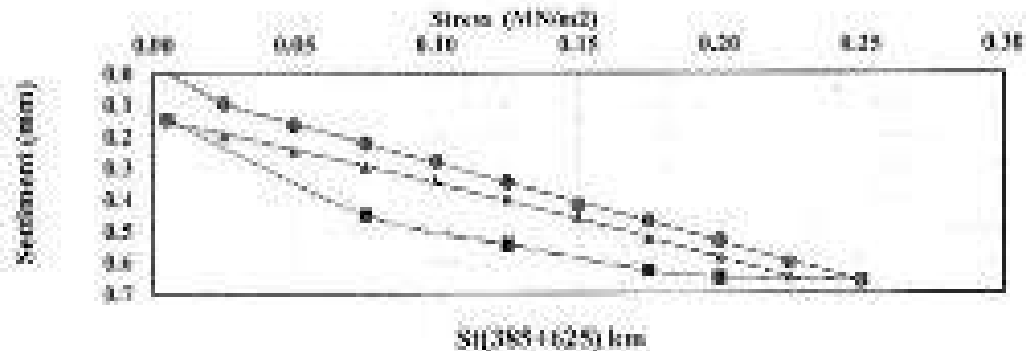


Fig. 5: Load-settlement curve, fitting curves according to Table 1.5 and Table 2.4 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Fitting curve
- σ_u Residual stress (MPa/cm²)



Off: 23 Alexandria - Cairo Desert Road - Heliopolis
Tel: 002 33476005 - MO: 03471111
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex/Egypt
Tel: 002 333628176 - 002 033931482
Fax: 002 033990475
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 041029-12-004
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

SI/2009-450/ KSA

693

Table 16: Measured values for first loading cycle and unloading cycle

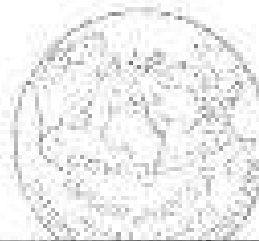
Loading stage no.	Load (T) kN	Normal stress (σ_n) MPa	Settlement at loading plate s_p (mm)
0	1.14	0.000	0.00
1	1.31	0.004	0.01
2	14.14	0.008	0.06
3	21.21	0.012	0.23
4	26.26	0.109	0.31
5	31.31	0.121	0.36
6	41.41	0.130	0.44
7	49.49	0.132	0.50
8	55.55	0.186	0.82
9	63.63	0.221	0.93
10	73.73	0.230	0.95
11	85.85	0.280	0.95
12	93.93	0.175	0.64
13	75.75	0.125	0.33
14	31.31	0.075	0.15
15	1.14	0.001	0.11

Table 17: Measured values for second loading cycle

Loading stage no.	Load (T) kN	Normal stress (σ_n) MPa	Settlement at loading plate s_p (mm)
16	1.14	0.001	0.11
17	1.31	0.005	0.11
18	14.14	0.006	0.35
19	21.21	0.075	0.33
20	26.26	0.100	0.39
21	35.35	0.125	0.45
22	42.42	0.180	0.91
23	49.49	0.175	0.90
24	55.55	0.280	0.61
25	63.63	0.235	0.60

Table 18: Compilation of results

Parameter	1st loading cycle	2nd loading cycle
(σ_{max}) (MPa)	0.280	0.278
s_p (mm)	0.917	0.902
α_p (mm/(MPa $\cdot$ s $^{1/2}$))	0.11	0.09
α_q (mm/(MPa $\cdot$ s $^{1/2}$))	1.809	0.157
For 1.5 (kN/m 2)/second	168.16	189.41
Factor	1.11	



Bldg 25 Alexandria - Canal District Road - Meskara
Tel: 002 41 474335 - 002 01791191
Email: info@comibassal.com
Website: www.comibassal.com



49- El Horia Ave. Alex, Egypt
Tel: 002 033920175 - 002 033931462
Fax: 002 033960476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/EG-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031705/1A

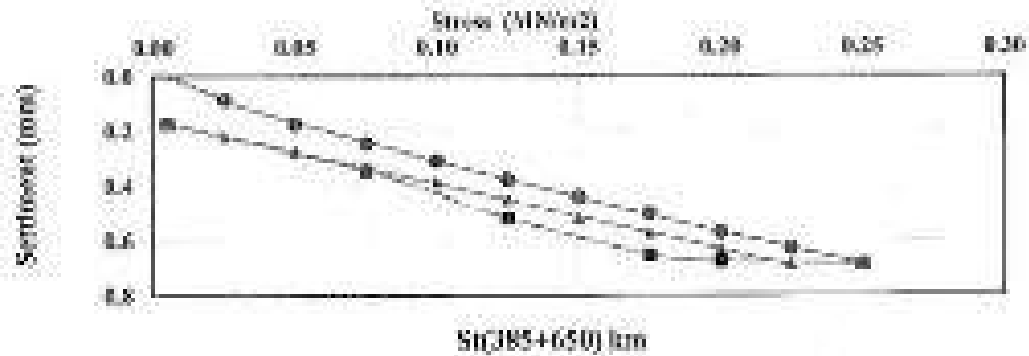


Fig. 6: Load-settlement curve, fitting curves according to Table 16 and Table 17 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement in mm
- σ_v Vertical stress MN/m²



Site 21 Alexandria - Cairo Desert Road - Memphis
Tel: 002 03 4061761 - 002 03 4061191
Email: info@comibassal.com
Website: www.comibassal.com



49 El Hamra Ave., Alex, Egypt
Tel: 002 03 920176 - 002 03 931482
Fax: 002 03 990476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 247/EG-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 001709/EA

90355-8751 KM

600

Table 17: Measured values for first loading cycle and unloading cycle

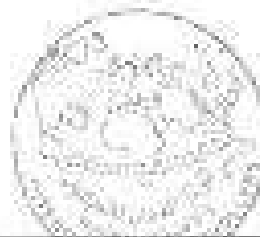
Loading stage no.	Load (F) kN	Maximal stress (σ_1) MPa	Settlement of loading plate S (mm)
0	1.114	0.006	0.08
1	3.07	0.018	0.11
2	14.14	0.060	0.18
3	21.21	0.079	0.24
4	28.28	0.090	0.28
5	35.35	0.110	0.34
6	42.42	0.130	0.54
7	49.49	0.170	0.75
8	56.56	0.200	0.91
9	63.63	0.210	0.98
10	70.7	0.250	0.93
11	77.76	0.300	0.81
12	84.83	0.370	0.68
13	91.90	0.410	0.49
14	98.97	0.470	0.33
15	106.04	0.600	0.19

Table 18: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Maximal stress (σ_1) MPa	Settlement of loading plate-S mm
16	5.114	0.006	0.18
17	7.07	0.009	0.24
18	14.14	0.030	0.38
19	21.21	0.079	0.53
20	28.28	0.100	0.65
21	35.35	0.120	0.80
22	42.42	0.170	0.90
23	49.49	0.200	0.95
24	56.56	0.250	0.85

Table 19: Calculation of results

Parameter	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.600	0.250
σ_1 (mm)	0.008	0.015
σ_1 (mm) (MPa)	1.666	1.667
σ_2 (mm) (MPa)	2.400	0.417
For US of Soil, σ_{max}	0.0001	114.15
Factor	1.06	



1015 10 Alexandria - Cairo Desert Road - Mersina
Tel: 002 01 470605 - 002 0001151
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033928176 - 002 033621482
Fax: 002 013900475
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/20-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 000708/1A

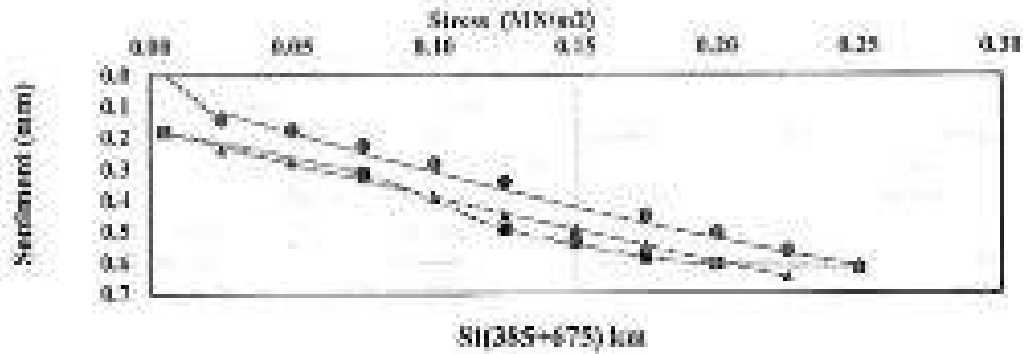


Fig. 3: Load-settlement curve, fitting curves according to Table 16 And Table 20 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_p Normal stress (kPa/cm²)



8110 10 Alexandria - Giza Desert Road - Meskara
Tel: 002 03 6790005 - 002 036791781
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 0339311402
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 242/PM-11-2001
Accredited by : Egyptian Accreditation Council (EGAC) under No. 0027008/14

00385-2021 002

600

Table 21: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Maximal stress (σ_1) MPa	Settlement of loading plate S (mm)
0	1.414	0.005	0.08
1	5.07	0.015	0.08
2	14.14	0.030	0.12
3	21.21	0.045	0.18
4	28.28	0.060	0.27
5	35.35	0.075	0.32
6	42.42	0.100	0.38
7	49.49	0.175	0.44
8	56.56	0.200	0.58
9	63.63	0.215	0.59
10	70.7	0.230	0.62
11	77.78	0.300	0.61
12	84.85	0.112	0.55
13	91.92	0.115	0.61
14	98.99	0.122	0.55
15	106.06	0.002	0.54

Table 16: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Maximal stress (σ_1) MPa	Settlement of loading plate S mm
16	1.414	0.005	0.14
18	5.07	0.009	0.15
17	14.14	0.009	0.24
19	21.21	0.019	0.30
15	28.28	0.108	0.34
20	35.35	0.122	0.35
21	42.42	0.158	0.44
22	49.49	0.175	0.50
23	56.56	0.208	0.58
24	63.63	0.225	0.61

Table 24: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.230	0.219
s_1 (mm)	0.001	0.007
s_2 (mm) (2015/2017)	2.197	1.550
s_3 (mm) (2015/2017)	0.005	0.002
$\sigma_{av} = 1.2 \times \sigma_{max} / (s_1 + s_2 + s_3)$	109.31	11.150
EGAC	0.12	



810 21 Alexandria - Cairo Desert Road - Marghara
Tel: 002 4354495 - 011 03478190
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horia Ave. Alex, Egypt
Tel: 002 033920175 - 002 033511482
Fax: 002 033500476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 24/22-21-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031706/1A

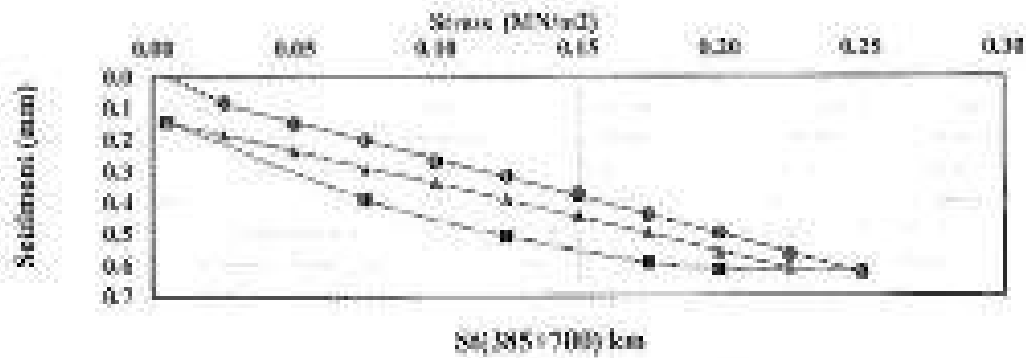


Fig. 8: Load-settlement curve, fitting curves according to Table 22 and Table 23 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the second loading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement in mm
- σ_v Vertical stress (kPa/cm²)



Kilo 19, El Mansara - Cairo Desert Road - Heliopolis
Tel: 002 33474005 - 002 33471151
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave., Alex, Egypt
Tel: 002 333928176 - 002 333931482
Fax: 002 333900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: (Egyptian General Authority for Metrology) under No. 247/2011-EGM
Accredited by: (Egyptian Accreditation Council - EGAC) under No. 001705/EA

90385-47251 KM

600

Table 15: Measured values for first loading cycle and unloading cycle

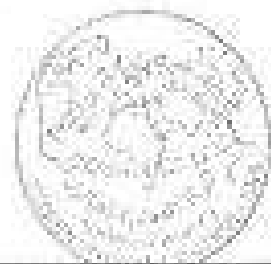
Loading stage no.	Load (F) kN	Measured stress (σ) MN/m ²	Settlement of loading plate S (mm)
0	1.414	0.000	0.08
1	7.07	0.015	0.08
2	14.14	0.030	0.17
3	21.21	0.045	0.22
4	28.28	0.060	0.28
5	35.35	0.075	0.30
6	42.42	0.090	0.38
7	49.49	0.115	0.45
8	56.56	0.200	0.50
9	63.63	0.215	0.58
10	70.7	0.230	0.55
11	77.78	0.200	0.54
12	84.85	0.175	0.50
13	91.92	0.155	0.50
14	98.99	0.075	0.38
15	1.414	0.005	0.17

Table 16: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Measured stress (σ) MN/m ²	Settlement of loading plate S (mm)
16	1.414	0.005	0.17
17	7.07	0.015	0.22
18	14.14	0.040	0.27
19	21.21	0.075	0.30
20	28.28	0.100	0.38
21	35.35	0.115	0.44
22	42.42	0.140	0.49
23	49.49	0.175	0.55
24	56.56	0.200	0.60
25	63.63	0.215	0.68

Table 27: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
σ_{max} (MN/m ²)	0.230	0.238
σ_y (MN/m ²)	0.045	0.108
σ_u (MN/m ²)	0.200	0.174
σ_c (MN/m ²)	0.007	0.008
Compressive strength (σ_{cu})	195.16	205.74
σ_{avg}	1.00	



Kilo 10 Alexandria - Cairo Desert Road - Memphis
Tel: 002 01 670036 - 01 6426181
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horia Ave. Alex, Egypt
Tel: 002 033920175 - 002 033911462
Fax: 002 033960476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 84/2011-2011
 Accredited by : Egyptian Accreditation Council (EGAC) under No. 001/2018/EA

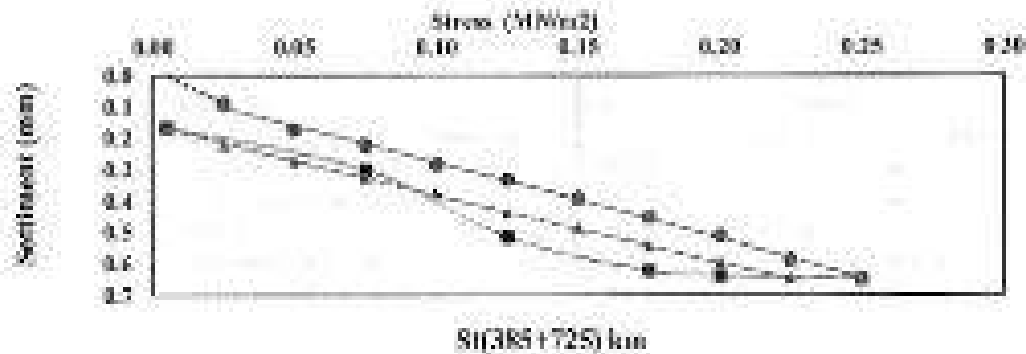


Fig. 5: Load-settlement curve, fitting curves according to Table 25 and Table 26 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the second loading cycle
- △ Measurement points from the third loading cycle
- Settlement in mm
- σ_p Normal stress MPa/cm²



Bile 21 Alexandria - Cairo Desert Road - Mersin
 Tel: 0020 4741551 - 002 4741511
 Email: info@comibassal.com
 WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt
 Tel: 002 033920175 - 002 033931462
 Fax: 002 033960436
 Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by (Egyptian Mineral Authority for Petroleum) under No. 84/2011-11-2011
Accredited by (Egyptian Accreditation Council (EGAC)) under No. 001/2018/EA

00385-7500 436

600

Table 20: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Normal stress (σ_2) MPa ²	Settlement at loading plate (mm)
0	1.04	0.004	0.00
1	1.07	0.005	0.10
2	14.14	0.090	0.16
3	21.21	0.075	0.21
4	20.26	0.100	0.22
5	25.25	0.125	0.22
6	41.41	0.150	0.26
7	40.40	0.175	0.46
8	40.80	0.200	0.52
9	40.80	0.200	0.55
10	10.7	0.200	0.65
11	05.06	0.200	0.65
12	40.40	0.175	0.65
13	25.25	0.125	0.49
14	21.21	0.075	0.35
15	1.04	0.004	0.12

Table 20: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Normal stress (σ_2) MPa ²	Settlement at loading plate S (mm)
04	1.04	0.004	0.22
06	1.07	0.005	0.23
07	14.14	0.090	0.24
08	21.21	0.075	0.26
09	20.26	0.100	0.28
20	25.25	0.125	0.44
21	41.41	0.150	0.49
22	40.40	0.175	0.54
23	40.80	0.200	0.55
24	40.80	0.200	0.65

Table 20: Comparison of results

Parameters	04 loading cycle	2nd loading cycle
σ_{2max} (MPa ²)	0.200	0.200
σ_2 (mm)	0.090	0.090
σ_2 (mm) (MPa ²)	2.000	1.316
σ_2 (mm) (MPa ²)	1.600	4.798
σ_{2max} (MPa ²)	100.00	100.00
(%)	1.11	



40 El Horria Ave. - Cairo Desert Road - Heliopolis
Tel: 002 03 470001 - 002 00401161
Email: info@comibassal.com
Website: www.comibassal.com



40 El Horria Ave. Alex, Egypt
Tel: 002 033920170 - 002 033931402
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. DAU29-15-0100
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031706/1A

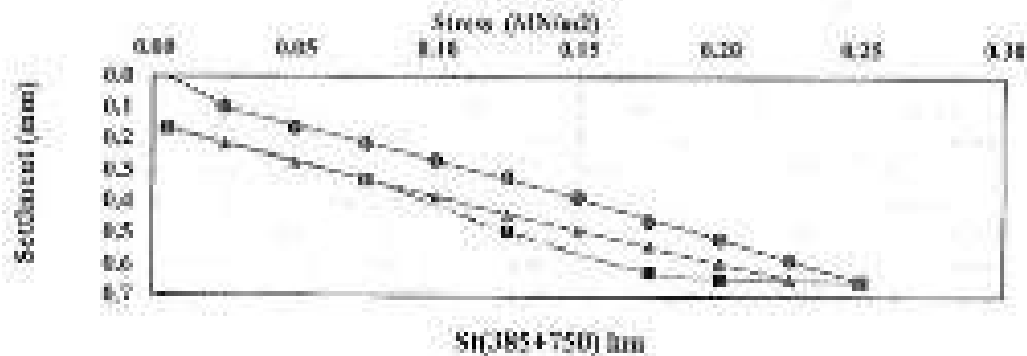


Fig. 5: Load-settlement curve, Siting curves according to Table 28 and Table 29 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the second loading cycle
- △ Measurement points from the third loading cycle
- Settlement limits
- Normal stress limit (kN/m²)



Site 21 Alexandria - Cairo Desert Road - Mersa Matruh
Tel: 002 05404001 - 002 05404002
Email: info@comibassal.com
Website: www.comibassal.com



48 El Horria Ave. Alex, Egypt
Tel: 002 033926176 - 002 033931402
Fax: 002 033990426
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 84/EGH-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 001700/2011

Conclusions:

The present test results which obtained from the plate loading tests of the native fill-fallst layer of the electric express toll project at location (From km 385+525 to km 385+750) in accordance to the German Standard , DIN 18134 are illustrated in table 31 .

Table 31 : Test results

Location	Ev1(MN/m ²)	Ev2(MN/m ²)	Ev2/Ev1 ratio
St(385+525) km	174.54	212.72	1.22
St(385+550) km	184.31	200.45	1.09
St(385+575) km	155.24	183.39	1.18
St(385+600) km	168.06	190.40	1.13
St(385+625) km	180.11	196.45	1.09
St(385+650) km	168.14	189.41	1.13
St(385+675) km	199.17	214.28	1.08
St(385+700) km	189.23	211.33	1.12
St(385+725) km	187.36	206.74	1.10
St(385+750) km	186.69	209.41	1.12

Lab Director

Eng / Esmat Kamel

Geotechnical Consultant

for Mr. H.
Dr / Mohamed Mustafa Badry



Elko 23 Alexandria - Giza Desert Road - Meskara
Tel: 002 03 404555 - 002 03393118
Email: info@comibassal.com
Website: www.comibassal.com



49-51 Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033990476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/2011-21-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 0007001A

Technical report

of Plate Loading Test (DIN 18134)

General Consultant	:	SYSTRA
Consultant	:	SPECTRUM
Contractor	:	شركة عبد السلام القلي للمقاولات
Project	:	ELECTRIC EXPRESS TRAIN
Sample	:	Subballast layer (2)
Station	:	St(385+775)to st(386+000)
Date of Test	:	12/06/2023
QC	:	1405

Kilo 13 Alexander - Cairo Desert Road - Heliopolis
Tel: 00145 474006 - 001 00474111
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033928176 - 002 033931487
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/2011-EG
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081306/14

Introduction:

The Plate Load test is designed to determine the vertical deformation and strength characteristics of soil by assessing the force and amount of penetration with time when a rigid plate is made to penetrate the soil.

The test to be carried out on the native soil according to German specifications DIN 18134.

Test methods :

- 1- The German standard DIN 18134 was applied to define the apparatus used, the loading system, test conditions, and procedure for plate load test.
- 2- Loading plates with a diameter of 600 mm have a thickness of 25mm and are provided with equally spaced stiffeners with even upper faces parallel to the plate bottom face to allow 300 mm plate to be placed on top of it.
- 3- The loading system consisted of a hydraulic pump connected to a hydraulic jack of 700 bar capacity, which is capable of applying and releasing the load stages.
- 4- The dial gauge used to measure the plate settlement has a resolution of 0.01mm and the lever ratio was equal to 1.
- 5- The temperature at the time of the test was 25°C.
- 6- The plate was carried out on a native soil (sand-gravel). The test surface area was levelled and the plate was bedded on this surface.
- 7- The hydraulic jack was placed on the middle of, and at normal to, the loading plate beneath the reaction loading system and secured against tilting.
- 8- The reaction loading system was a heavy multi-purpose excavator (more than 20 ton).

Description of experiment:

- 1- Loading, unloading and reloading regime were applied according to DIN 18134 for the plate load test to estimate the resilient modulus.
- 2- Prior to the test, the force transducer and dial gauge were set to zero, after which a load was applied corresponding to a stress of 0.01 MN/m².
- 3- In the first loading cycle, the load was increased until a normal stress of 0.25 MN/m² was reached, and the loading increment was 0.025 MN/m². The load was released in four stages.
- 4- Following unloading, a further second loading cycle was carried out, in which, the load was increased only to the penultimate stage of the first cycle.



Ello 20 Alcadida - Cairo Street Road - Merghe
Tel: 002 4334595 - 002 4334596
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave, Alex, Egypt
Tel: 002 033929176 - 002 033931482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/2015-EG
Accredited by : Egyptian Accreditation Council (EGAC) under No. 001206/14

04/2015-EG

006

Table 1: Mechanical values for first loading cycle and unloading cycle

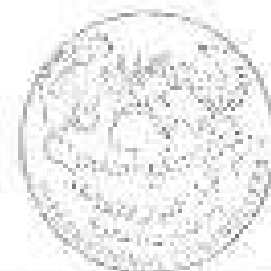
Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain at loading plate ε (mm/mm)
1	1.11	0.003	0.00
2	7.61	0.003	0.00
3	14.14	0.003	0.10
4	21.31	0.003	0.21
5	28.25	0.100	0.36
6	35.35	0.128	0.51
7	42.41	0.158	0.64
8	49.45	0.178	0.78
9	56.45	0.200	0.91
10	63.45	0.220	1.04
11	70.4	0.238	1.17
12	77.35	0.258	1.30
13	84.35	0.278	1.43
14	91.31	0.300	1.56
15	1.11	0.003	0.10

Table 1: Mechanical values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain at loading plate ε (mm/mm)
15	1.11	0.003	0.10
16	7.61	0.003	0.20
17	14.14	0.003	0.27
18	21.31	0.003	0.34
19	28.25	0.100	0.58
20	35.35	0.128	0.64
21	42.41	0.158	0.78
22	49.45	0.178	0.91
23	56.45	0.200	1.04
24	63.45	0.220	1.17

Table 2: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
Proportional Limit	0.178	0.200
σ_y (MPa)	0.003	0.003
σ_u (MPa) (UTS)	1.756	1.080
σ_b (MPa) (BTS)	0.003	0.003
Modulus of Elasticity (GPa)	0.003	0.003
Yielded	1.07	



8/10 El Horria Ave. - El Horria - El Horria - El Horria
Tel: 002 033920176 - 002 033921482
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. - El Horria - El Horria - El Horria
Tel: 002 033920176 - 002 033921482
Fax: 002 033600476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/2011-01-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 030706/1A

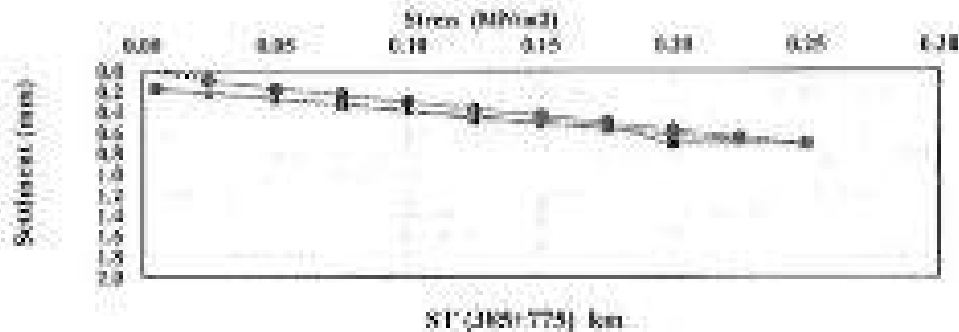
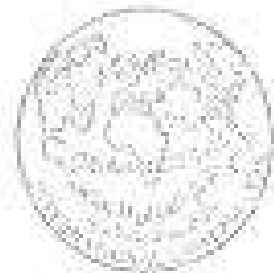


Fig. 3- Load-settlement curve, fitting curves according to Table 3 and Table 2 for the first and second loading cycles

- Measured points from the first loading cycle
- Measured points from the unloading cycle
- Measured points from the second loading cycle
- △ Settlement in mm
- σ_v Vertical stress MPa/cm²



40a 23 Alexandria - Cairo Desert Road - Margham
Tel: 002 30 476005 - 30 30481751
Email: internal@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex/Egypt
Tel: 002 033938126 - 002 033931482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 34/20-31-2011
Accredited by: Egyptian Accreditation Council (EGAC) under No. 000708/1A

543385+800/ KM

EDD

Table 4: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Normal stress (a) MPa	Settlement of loading plate mm
0	1.14	0.005	0.00
1	1.39	0.009	0.00
2	16.14	0.054	0.30
3	31.21	0.075	0.35
4	36.28	0.100	0.41
5	41.35	0.125	0.46
6	47.42	0.150	0.47
7	49.49	0.170	0.49
8	55.56	0.200	0.50
9	61.63	0.220	0.61
10	70.7	0.250	0.69
11	75.76	0.260	0.66
12	81.83	0.275	0.60
13	86.90	0.300	0.51
14	91.97	0.325	0.40
15	1.14	0.005	0.17

Table 5: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Normal stress (a) MPa	Settlement of loading plate S mm
15	1.14	0.005	0.17
16	1.39	0.005	0.33
17	16.14	0.050	0.28
18	31.21	0.075	0.34
19	36.28	0.100	0.30
20	41.35	0.125	0.45
21	47.42	0.150	0.51
22	49.49	0.175	0.61
23	55.56	0.200	0.61
24	61.63	0.225	0.60

Table 6: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
$E_{avg} (MPa)$	0.198	0.203
$\alpha_1 (mm)$	0.058	0.041
$\alpha_2 (mm/MPa)$	2.180	1.511
$\alpha_3 (mm/MPa)$	0.120	-1.364
$E_{avg} (MPa) = \frac{1}{\alpha_1 + \alpha_2 + \alpha_3}$	184.51	208.18
EDDD	1.00	

Elko 30 Alexandria - Cairo Desert Road - Memphis
Tel: 002 41 410124 - 002 41010178
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horra Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931462
Fax: 002 033960476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 241/2019-25-2021
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031706/1A

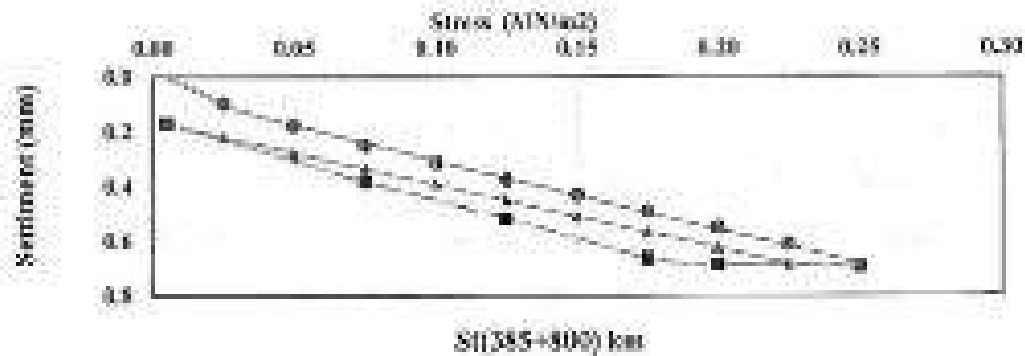


Fig. 3: Load-relaxation curve, fitting curves according to Table 4 and Table 5 for the first and second loading cycles

- measurement points from the first loading cycle
- measurement points from the second loading cycle
- △ measurement points from the third loading cycle
- S Settlement in mm
- σ_0 Normal stress MPa/cm²



8/El 25 Alexandria - Canal Desert Road - Meskara
Tel: 002 41 411134 - 002 41176179
Email: info@comibassal.com
Website: www.comibassal.com



49/El Horia Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033900426
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 04/104-12-9001
Accredited by: Egyptian Accreditation Council (EGAC) under No. 031700/14

59/305-1035/ 990

000

Table 2: Measured values for Test loading cycle and unloading cycle

Loading stage no.	Load (T) (kN)	Normal stress (p ₂) (MPa)	Settlement of loading plate (mm)
0	1.411	0.004	0.00
1	7.67	0.015	0.09
2	14.11	0.030	0.14
3	21.11	0.045	0.20
4	28.20	0.060	0.27
5	35.20	0.075	0.33
6	42.43	0.090	0.39
7	49.45	0.105	0.45
8	55.56	0.118	0.50
9	62.62	0.129	0.56
10	70.7	0.139	0.62
11	80.56	0.150	0.67
12	89.38	0.155	0.68
13	98.38	0.170	0.69
14	21.11	0.075	0.45
15	1.411	0.005	0.17

Table 3: Measured values for second loading cycle

Loading stage no.	Load (T) (kN)	Normal stress (p ₂) (MPa)	Settlement of loading plate 2 (mm)
16	1.411	0.005	0.17
16	7.67	0.015	0.23
17	14.11	0.030	0.27
18	21.21	0.045	0.30
19	28.26	0.060	0.36
20	35.39	0.075	0.40
21	41.42	0.090	0.45
22	49.45	0.105	0.54
23	56.56	0.118	0.58
24	62.62	0.129	0.62

Table 4: Comparison of results

Parameters	1st loading cycle	2nd loading cycle
$\sigma_{ult} (MPa)$	0.250	0.150
$\sigma_0 (MPa)$	0.015	0.150
$\sigma_1 (MPa)$	1.406	2.150
$\sigma_2 (MPa)$	4.040	0.550
Dev. % of p ₂ (kPa)	107.00	204.00
Factor	1.14	

20/5 20 Almanshara - Cairo Desert Road - Heliopolis
Tel: 002 03 479405 - 002 00401161
Email: info@comibassal.com
Web site: www.comibassal.com



49 El Horria Ave, Alex, Egypt
Tel: 002 033928176 - 002 033931482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 241/22-21-EGM
Accredited by : Egyptian Accreditation Council (EGAC) under No. 000706/1A

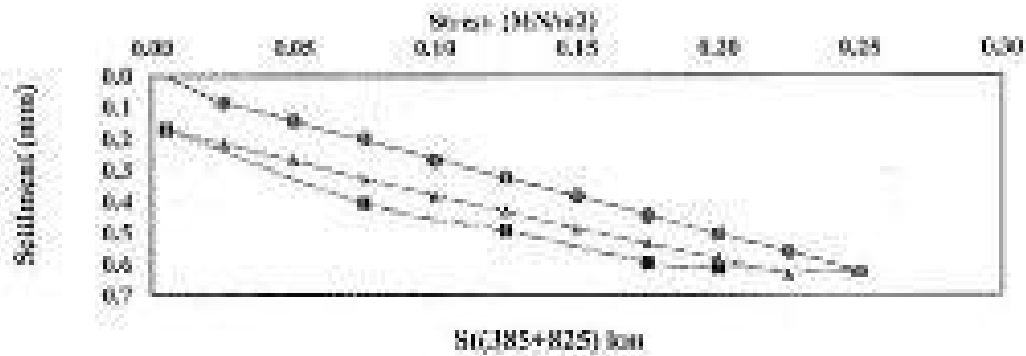


Fig. 3: Load-settlement curves, fitting curves according to Table 7 and Table 8 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- ▲ Measurement points from the second loading cycle
- S Settlement in mm
- σ_p Internal stress MPa



40 El Hamla Ave. - Cairo Desert Road - Heliopolis
Tel: 002 02 676081 - 02 6041161
Email: info@comibassal.com
Website: www.comibassal.com



40 El Hamla Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931462
Fax: 002 033990426
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 24/29-11-2011
Accredited by : Egyptian Accreditation branch (EGAC) under No. 031706/14

51(205+850) KPa

000

Table 10: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (T) kN	Normal stress (σ) MPa	Settlement of loading plate (mm)
1	1.414	0.005	0.08
2	2.827	0.010	0.19
3	4.241	0.015	0.27
4	5.654	0.020	0.33
5	7.068	0.025	0.38
6	8.481	0.030	0.42
7	9.895	0.035	0.45
8	11.308	0.040	0.47
9	12.722	0.045	0.49
10	14.135	0.050	0.50
11	15.549	0.055	0.51
12	16.962	0.060	0.52
13	18.376	0.065	0.52
14	19.789	0.070	0.53
15	21.203	0.075	0.53

Table 11: Measured values for second loading cycle

Loading stage no.	Load (T) kN	Normal stress (σ) MPa	Settlement of loading plate (mm)
16	1.414	0.005	0.10
17	2.827	0.010	0.21
18	4.241	0.015	0.27
19	5.654	0.020	0.33
20	7.068	0.025	0.37
21	8.481	0.030	0.40
22	9.895	0.035	0.43
23	11.308	0.040	0.45
24	12.722	0.045	0.47

Table 12: Comparison of results

Parameter	1st loading cycle	2nd loading cycle
(σ_{max}) (MPa)	0.075	0.078
σ_y (MPa)	0.030	0.032
σ_u (MPa)	1.461	1.318
σ_c (MPa)	0.040	0.041
Compressive strength (MPa)	100.00	100.00
Factor	1.14	

Site 21 Alexandria - Cairo Desert Road - Mersin
Tel: 002 03 400151 - 002 03 401118
Email: info@comibassal.com
Website: www.comibassal.com



39 El Hamla Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033900478
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 203/2014-15-0002
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081200611A

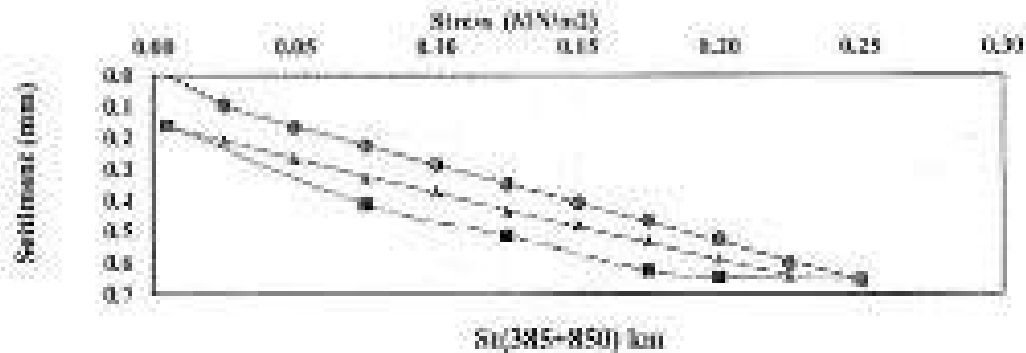


Fig. 4. Load-settlement curve, fitting curves according to Table 10 and Table 11 for the first and second loading cycles.

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_p Normal stress kN/m²



Site 21 El-Kheda - Cairo Desert Road - Mergham
Tel: 002 03 494155 - 002 0310119
Email: vindep@comibassal.com
WebSite: www.comibassal.com



49 El Heerla Ave. Abo, Egypt
Tel: 002 033920175 - 002 033931483
Fax: 002 033900426
Email: Internal-Inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 247/88-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. D01708/EA

00385-0750 KM

600

Table 13: Measured values for first loading cycle and unloading cycle

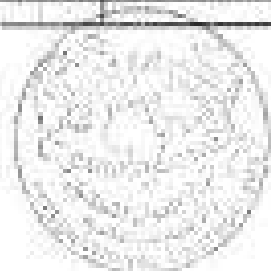
Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain rate at loading plate S/mm
0	1.14	0.005	0.00
1	1.01	0.005	0.00
2	14.14	0.008	0.10
3	21.21	0.009	0.21
4	25.28	0.100	0.30
5	25.25	0.105	0.31
6	41.41	0.150	0.39
7	41.40	0.175	0.40
8	41.40	0.200	0.41
9	41.41	0.200	0.40
10	25.27	0.100	0.40
11	25.28	0.100	0.41
12	41.40	0.175	0.40
13	25.28	0.105	0.40
14	21.21	0.009	0.35
15	1.14	0.005	0.11

Table 14: Measured values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (σ) MPa	Strain rate at loading plate: S (mm/s)
16	1.14	0.008	0.17
17	1.01	0.005	0.21
18	14.14	0.008	0.28
19	21.21	0.009	0.34
20	25.28	0.100	0.38
21	25.28	0.105	0.40
22	41.41	0.150	0.51
23	41.40	0.175	0.50
24	56.56	0.200	0.58
25	61.61	0.225	0.58

Table 15: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.200	0.200
σ_y (MPa)	0.009	0.100
σ_u (MPa) (21% σ_y)	0.004	0.004
σ_1 (MPa) (21% σ_y)	0.008	0.008
Dev. % of σ_y to σ_{max}	100.00	200.76
$R = \sigma_y / \sigma_{max}$	0.02	



Kilo 10 Alexandria - Eliza Desert Road - Marghah
Tel: 001 41 470485 - 011 20481191
Email: info@comibassal.com
Website: www.comibassal.com



49 El Barria Ave. Alex, Egypt
Tel: 002 033930176 - 002 033931482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Certification under No. 001/1998-15-01/002
 Accredited by : Egyptian Accreditation Council (EGAC) under No. 081700416

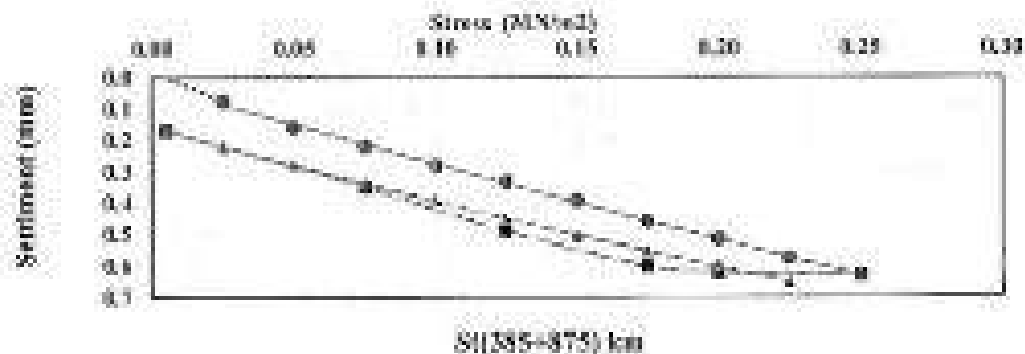


Fig. 14 Load-settlement curve, fitting curves according to Table 13 and Table 14 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement in mm
- σ_g Ground stress MPa/cm²



40 El Horria Ave. - Cairo Desert Road - Heliopolis
 Tel: 002 33 474005 - 002 33471181
 Email: info@comibassal.com
 Website: www.comibassal.com



49 El Horria Ave. Alex/Egypt
 Tel: 002 033938176 - 002 033931482
 Fax: 002 033900475
 Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 243/2014-25-4/002
Accredited by: Egyptian Accreditation Council (EGAC) under No. 0312000116

SI(335+000) IOM

001

Table 16: Measured values for First loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Normal stress (σ) MPa	Settlement of loading plate S (mm)
0	1.04	0.005	0.00
1	1.07	0.015	0.05
2	11.14	0.050	0.14
3	21.21	0.075	0.23
4	25.28	0.090	0.26
5	25.25	0.105	0.30
6	41.42	0.150	0.41
7	45.49	0.175	0.47
8	61.63	0.200	0.53
9	61.63	0.215	0.56
10	75.7	0.250	0.64
11	85.84	0.300	0.83
12	45.49	0.175	0.61
13	25.28	0.105	0.45
14	21.21	0.075	0.43
15	1.04	0.005	0.18

Table 17: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Normal stress (σ) MPa	Settlement of loading plate S (mm)
16	1.04	0.005	0.18
17	1.07	0.015	0.24
18	11.14	0.050	0.23
19	21.21	0.075	0.26
20	25.28	0.090	0.42
21	25.25	0.105	0.48
22	41.42	0.150	0.53
23	45.49	0.175	0.57
24	61.63	0.200	0.61
25	61.63	0.215	0.66

Table 18: Compilation of results

Parameters	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.300	0.250
$s_{1/2}$ (mm)	0.615	0.755
α (mm/MPa ^{2/3})	1.695	1.882
$s_{1/2}$ (mm/MPa ^{2/3})	0.819	1.411
C_m (1/MPa ^{2/3})(mm)	180.67	201.69
Exponent	1.32	



Office 21 El Horria - Cairo Desert Road - Heliopolis
Tel: 002 83 40435 - 002 8340111
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave., Alex, Egypt
Tel: 002 833920136 - 002 033931482
Fax: 002 033980426
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

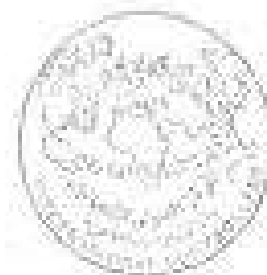
Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/25-13-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 000700116



Fig. 6: Load-settlement curve, fitting curves according to Table 16 and Table 17 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- Settlement in mm
- σ_v Vertical stress (MPa/cm²)



Elko 21 Alexandria - Delta Desert Road - Mersham
Tel: 002 41 419495 - 001 55476781
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033930178 - 002 033511482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 202/2014-15-01002
Accredited by : Egyptian Accreditation council (EGAC) under No. 0317006/1A

SI(335+025)-KM

013

Table 19: Viewward values for first loading cycle and unloading cycle

Loading stage no.	Load (F) kN	Normal stress (F _N) MPa	Settlement of loading plate (mm)
0	0.114	0.000	0.00
1	7.07	0.005	0.18
2	14.14	0.009	0.17
3	21.21	0.015	0.23
4	28.28	0.008	0.29
5	35.35	0.014	0.34
6	42.42	0.019	0.38
7	49.49	0.025	0.46
8	56.56	0.030	0.53
9	63.63	0.035	0.58
10	70.7	0.038	0.64
11	77.78	0.039	0.62
12	84.85	0.037	0.61
13	91.92	0.035	0.63
14	98.99	0.035	0.71
15	0.114	0.000	0.19

Table 19b: Shearward values for second loading cycle

Loading stage no.	Load (F) kN	Normal stress (F _N) MPa	Settlement of loading plate (mm)
16	0.114	0.000	0.17
17	7.07	0.005	0.23
18	14.14	0.008	0.29
19	21.21	0.015	0.34
20	28.28	0.008	0.38
21	35.35	0.014	0.44
22	42.42	0.019	0.50
23	49.49	0.025	0.58
24	56.56	0.030	0.68
25	63.63	0.034	0.78

Table 20: Compilation of results

Parameter	1st loading cycle	2nd loading cycle
(σ_{Nmax}) MPa	0.038	0.038
σ_{Nmax} (mm)	0.64	0.62
σ_{Nmax} (MPa) ²	0.001	0.001
σ_{Nmax} (MPa) ²	0.001	0.001
σ_{Nmax} (MPa) ²	0.001	0.001
σ_{Nmax} (MPa) ²	0.001	0.001
σ_{Nmax} (MPa) ²	0.001	0.001



40 El Horria Ave. - El Horria Road - Alexandria
Tel: 002 03 3350126 - 002 033501482
Email: info@comibassal.com
Website: www.comibassal.com



40 El Horria Ave. - Alex.Egypt
Tel: 002 03350126 - 002 033501482
Fax: 002 033500476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 24/2011-2008
Accredited by : Egyptian Accreditation Council (EGAC) under No. 0317006/16

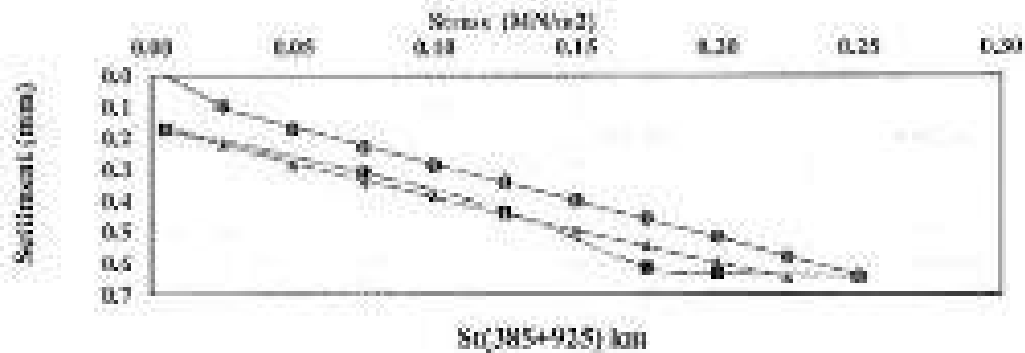


Fig. 3: Load-settlement curves, fitting curves according to Table 14 and Table 20 for the first and second loading cycles

- Measured points from the first loading cycle
- Measured points from the reloading cycle
- ▲ Measured points from the second loading cycle
- x Settlement curves
- σ_p Normal stress (MN/m²)



40 El Monia Ave. - El Helwan Road - Helwan
Tel: 002 033920124 - 002 033921482
Email: info@comibassal.com
Website: www.comibassal.com



49 El Monia Ave. - Alex, Egypt
Tel: 002 033920124 - 002 033921482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Metrology under No. 24/1994-11-9/001
 Accredited by : Egyptian Accreditation council (EGAC) under No. 081706/1A

51(2005+956) KN

000

Table 22: Measured values for first loading cycle and unloading cycle

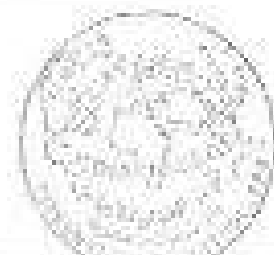
Loading stage no.	Load (T) KN	Normal stress (σ) MPa	Settlement of loading plate (Δmm)
0	1.414	0.004	0.00
1	7.07	0.021	0.10
2	14.14	0.040	0.17
3	21.21	0.059	0.25
4	28.28	0.080	0.32
5	35.35	0.100	0.39
6	42.42	0.120	0.45
7	49.49	0.139	0.52
8	56.56	0.160	0.59
9	63.63	0.179	0.64
10	70.7	0.198	0.69
11	77.75	0.218	0.73
12	84.82	0.237	0.76
13	91.89	0.256	0.81
14	98.96	0.275	0.85
15	1.414	0.004	0.00

Table 23: Measured values for second loading cycle

Loading stage no.	Load (T) KN	Normal stress (σ) MPa	Settlement of loading plate (Δmm)
16	1.414	0.004	0.00
17	7.07	0.021	0.02
18	14.14	0.040	0.07
19	21.21	0.059	0.10
20	28.28	0.080	0.14
21	35.35	0.100	0.18
22	42.42	0.120	0.21
23	49.49	0.139	0.24
24	56.56	0.160	0.28

Table 24: Compilation of results

Parameters	for loading cycle	for unloading cycle
(σ_{max}) MPa	0.275	0.278
σ_0 (mm)	0.014	0.014
σ_1 (mm) MPa	2.100	2.100
σ_2 (mm) MPa	1.405	0.701
σ_3 (mm) MPa	100.00	100.00
REMARK	1.00	



Kilo 25 Alexandria - Elina Street Road - Memphis
 Tel: 002 03 434006 - 03 4340101
 Email: info@comibassal.com
 Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
 Tel: 002 033928176 - 002 033931482
 Fax: 002 033900476
 Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 94/20-01-001
Accredited by : Egyptian Accreditation Council (EGAC) under No. 0017061A

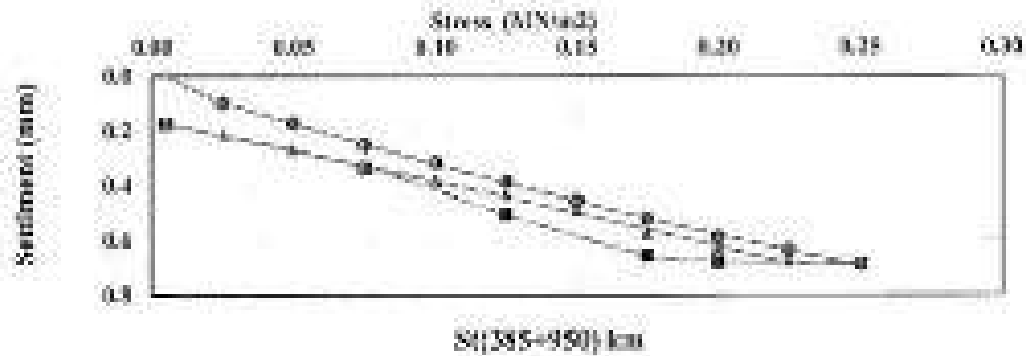


Fig. 8: Load-settlement curves, hysteresis curves according to Table 22 and Table 23 for the first and second loading cycles.

- Measurement points from the first loading cycle
- Measurement points from the unloading cycle
- △ Measurement points from the second loading cycle
- S Settlement curves
- σ_p Normal stress (MN/m²)



Kilo 20 Alexandria - Eliza Desert Road - Mersa Matruh
Tel: 002 01 424595 - 011 304281751
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex.Egypt
Tel: 002 033938176 - 002 033931482
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/029-15-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031708/14

SI (305+075) KM

000

Table 20: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Strained stress (σ) MPa	Settlement of loading plate mm
0	1.415	0.005	0.00
1	7.87	0.021	0.05
2	14.15	0.039	0.15
3	21.21	0.075	0.70
4	28.28	0.100	0.75
5	35.35	0.175	0.70
6	42.42	0.090	0.45
7	49.49	0.075	0.10
8	56.56	0.080	0.30
9	63.63	0.215	0.50
10	70.7	0.200	0.50
11	77.78	0.300	0.50
12	84.85	0.175	0.50
13	91.92	0.115	0.28
14	98.99	0.075	0.20
15	1.014	0.005	0.18

Table 21: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Strained stress (σ) MPa	Settlement of loading plate mm
16	1.014	0.000	0.18
17	7.87	0.025	0.20
18	14.14	0.030	0.28
19	21.21	0.075	0.50
20	28.28	0.100	0.70
21	35.35	0.120	0.80
22	42.42	0.150	0.90
23	49.49	0.175	0.80
24	56.56	0.200	0.80
25	63.63	0.225	0.80

Table 22: Comparison of results

Parameters	1st loading cycle	2nd loading cycle
σ_{max} (MPa)	0.200	0.215
σ_y (MPa)	0.090	0.170
σ_{avg} (MPa)	1.334	1.330
σ_{avg} (MPa)	0.021	0.200
σ_{avg} (MPa)	0.075	0.180
EGAC	1.30	



21 Kheir El-Din - Cairo Desert Road - Heliopolis
Tel: 002 49461 - 02 040111
Email: info@comibassal.com
Website: www.comibassal.com



49 El Hamra Ave. Alex, Egypt
Tel: 002 833830176 - 002 030-931482
Fax: 002 030930424
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 84/2011-11-2011
 Accredited by : Egyptian Accreditation Council (EGAC) under No. 002/2018/15.

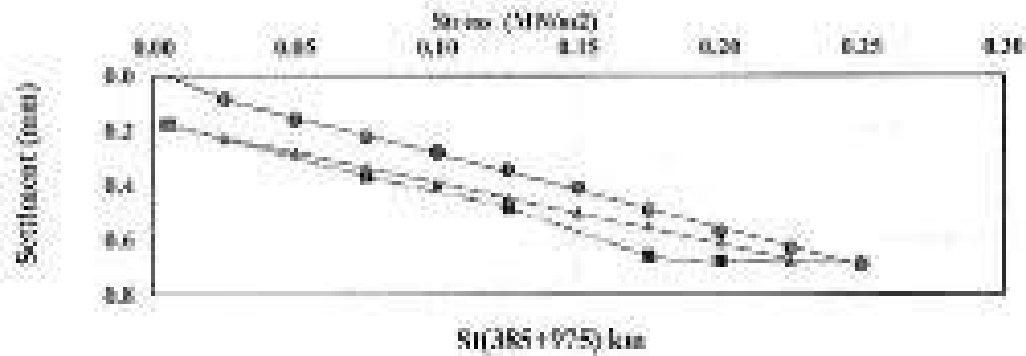


Fig. 9: Load-settlement curve, fitting curves according to Table 25 and Table 26 for the first and second loading cycles

- Measurement points from the first loading cycle
- Measurement points from the second loading cycle
- ▲ Measurement points from the original loading cycle
- Settlement in mm
- $\sigma_{1/2}$ Normal stress (MN/m²)



1110 25 Alexandria - Cairo Desert Road - Mersina
 Tel: 002 033920176 - 002 033531482
 Email: info@comibassal.com
 WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt
 Tel: 002 033920176 - 002 033531482
 Fax: 002 0335000476
 Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 88/PM-11-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 00170001A

55/200-0001 KVA

600

Table 20: Measured values for first loading cycle and unloading cycle

Loading stage no.	Load (P) kN	Normal stress (σ) MPa	Settlement of loading plate (δ) mm
1	1.14	0.000	0.00
2	7.07	0.025	0.18
3	14.14	0.050	0.37
4	21.21	0.075	0.54
5	28.28	0.100	0.78
6	35.35	0.125	0.97
7	42.42	0.150	1.14
8	49.49	0.175	1.31
9	56.56	0.200	1.48
10	63.63	0.225	1.65
11	70.7	0.250	1.73
12	77.75	0.275	1.71
13	84.82	0.300	1.69
14	91.89	0.325	1.65
15	98.96	0.350	1.60

Table 20: Measured values for second loading cycle

Loading stage no.	Load (P) kN	Normal stress (σ) MPa	Settlement of loading plate (δ) mm
16	1.14	0.000	0.20
17	7.07	0.025	0.27
18	14.14	0.050	0.32
19	21.21	0.075	0.38
20	28.28	0.100	0.43
21	35.35	0.125	0.48
22	42.42	0.150	0.53
23	49.49	0.175	0.59
24	56.56	0.200	0.64
25	63.63	0.225	0.70

Table 21: Comparison of results

Parameters	1st loading cycle	2nd loading cycle
$P_{lim} (kN/m^2)$	0.350	0.350
σ_p (mm)	0.004	0.011
σ_1 (mm) (MPa/m ²)	2.668	1.165
σ_2 (mm) (MPa/m ²)	0.184	0.000
For 1st loading cycle σ_1/σ_2	14.501	200.00
For 2nd loading cycle σ_1/σ_2		1.21



88/13 Alexandria - Cairo Desert Road - Heliopolis
Tel: 002 033928176 - 002 033921402
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033928176 - 002 033921402
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 345 (2018-10-2007)
Accredited by : Egyptian Accreditation Council (EGAC) under No. 081200016

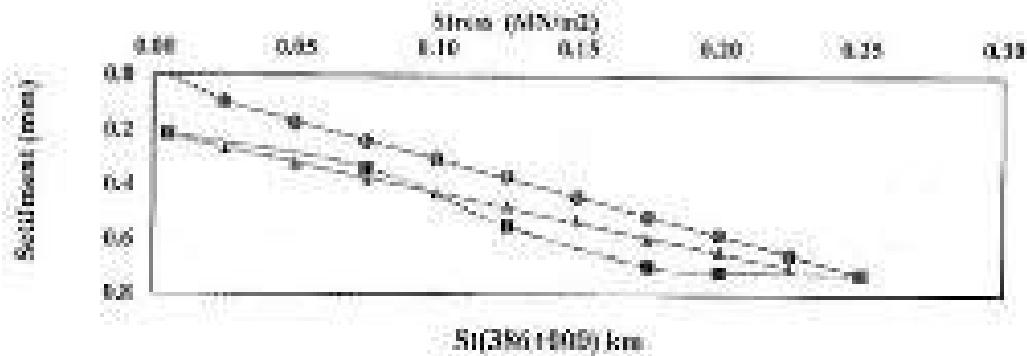


Fig. 9: Load-settlement curve, fitting curves according to Table 26 and Table 29 for the first and second loading cycle

- Measurement points from the first loading cycle
- Measurement points from the second loading cycle
- ▲ Measurement points from the third loading cycle
- S: Settlement in mm
- σ_h : Horizontal stress in kg/cm^2



8/El 21 Alexandria - Cairo Desert Road - Moushram
Tel: 002 03440115 - 002 01121111
Email: info@comibassal.com
WebSite: www.comibassal.com



49 El Horria Ave, Alex, Egypt
Tel: 002 033920176 - 002 011911482
Fax: 002 033988476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 04/09-11-0001
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031708-01A

Conclusions:

The present test results which obtained from the plate loading tests of the native soil on sub-ballast layer of the electric express train project at location (From km 385+775 to km 386+000) in accordance to the German standard , DIN 18194 are illustrated in table 31 .

Table 31 : (Test results)

Location	Ev1(MN/m ²)	Ev2(MN/m ²)	Ev2/Ev1 ratio
S1(385+775) km	164.50	167.44	0.90
S2(385+800) km	184.53	200.45	1.09
S1(385+825) km	187.83	215.05	1.14
S1(385+850) km	182.68	207.75	1.14
S2(385+875) km	183.91	207.76	1.13
S2(385+900) km	180.67	204.09	1.13
S1(385+925) km	189.54	210.50	1.11
S2(385+950) km	186.51	192.11	1.15
S2(385+975) km	187.87	201.81	1.10
S1(386+000) km	163.27	207.11	1.27

Lab Director
Eng / Emran Kouda

Geotechnical Consultant
Dr / Mohamed Mostafa Reddy



Old 23 Meskela - Cairo Desert Road - Memphis
Tel: 002 03 496831 - 800 8141111
Email : info@comibassal.com
Website : www.comibassal.com



89 El Hamla Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033900476
Email : internalinspection@comibassal.com

$\sigma_{\text{eff}}(\text{Liquor}) = 0.00017 \text{ L}^2 \text{Liquor}^{-1}$

Contractor Company	Abid EL-Saary EL-Saary Contracting Company		Designer Company	Saharawi Engineering Consulting Office				
Issued by Contractor	 Mohamed El-Saary		Date/Serial Number	Time				
			27/05/2023 (MSB21911)	4:00 PM				
Facilitated by GARS CONSULTANT	Eng. Mohamed El-Saary 		104	01	02	03	04	05
				06	07	08	09	10

EDS-3	Words Acquired
EDS-3	Words Learned and Available

Description		Element	Item
From 11	300-600	To 20	300-600
		Supply and 10	Subtotal

Planned Inspection Date	Planned Inspection Time
-------------------------	-------------------------

Checklist Attached	Test Results Attached	Calibration Attached	Other as indicated
--------------------	-----------------------	----------------------	--------------------

Drawing Reference	Reference	Std. Reference
Plan and Profile (EN, 32)	(MARR) (OT 584)) (MARR) (OT 584))	-Specification (MARR) (OT 584) (OT 584) -Technical Report (MARR) (OT 584) (OT 584) -Technical Report (MARR) (OT 584) (OT 584)

1 - Auctored Master Sheet, approved by SPECTRUM.

Comments, Inc. Eng. Proj. Muscat, Oman (SP/00000000)	Comments, Inc. Eng. Muscat, Oman (SP/00000000)
1- تم اكمال الطاق الهندسي 2- تم مراجعة مخطط التأسيس	1- Foundation & levels and walls checked by TMR comment 2- (BEN) 37% X-ray / 30% Shrinkage approved from TMR / 30% 3- Final approval is subject to above mentioned comments

INSPECTION RESULT					Approval Status	Please Tick if Not Attend
Organization	Name	Sign	Date	Time	A-AWCR	
Contractor	Eng. Ahmed Abd-Allah				A	
Site Survey	Eng. Mohamed Khalil				AWCR	
QAVOC*	Eng. Mustafa's Ayed					A
QAVOC**	Eng. Mohamed Fayez					
Employment Representative	Eng. Johna. Saad		23-5-2023			AWCR

UNIVERSAL INSPECTION REQUEST		     		
RECEIPT OF NOTIFICATION Minimum Notice Period not less than 24 Hours The below mentioned system will be complete and ready for inspection at the mentioned location				
Contractor Company	Abd EL-Salam EL-Sayed Company		Designer Company*	
Issued by Contractor	Name: محمد عبد السلام السيد Eng. Abd-El-Salam El-Sayed		Date/Serial Number 27/05/2023 IR/550312	
Received by QA/QC CONSULTANT	Eng. Mostafa Ryad	USA	SPECTRUM Engineering 4:00 PM 27/05/2023 13/05	
PROJECT	SI to S21 Eastern Bypass Road From S21 to S22 Intersection Work Activity 200' Extension of Activity			
EXPLANATION OF WORK TO BE INSPECTED				
Description		Drawn	Issue	
From: S21 to S22		Submitted: 2	Submitted:	
INSPECTION DETAILS The following will be made in the stated inspection time				
Planned Inspection Date		Planned Inspection Time		
COMPLIANCE EVIDENCE It will be indicated as appropriate				
Checklist Attached	Test Results Attached	Calibration Attached	Other as Indicated	
Drawing Reference	Reference	As Reference		
Plan and Profile REV. 02	MAA (07/503) MAA (1/10/2023)	Specification, INTERWORK SPECIFICATION A TESTING REPORT (2023-41) APPROVED BY CONCRETE GROUP TECHNICAL REPORT (2023-10/12) APPROVED BY CONCRETE GROUP		
Comments by: Eng. Mohamed Khalil (QA/QC)				
1- Attached Material Sheet approved by SPECTRUM.				
Comments by: Eng. Mostafa Ryad (SPECTRUM)		Comments by: Eng. Mostafa Ryad (SPECTRUM)		
1- تم استلام الأوراق المرفقة 2- تم مراجعة بيانات التصميم		1- Material sheet & levels and width checked by QA/QC consultant 2- plan, 02 & 10sec/20m sheet approved from SYSTEM 3- Final approval is subject to above mentioned comments.		
INSPECTION RESULT				
Organization	Name	Sign	Date	Time
Contractor	Eng. Ahmed Abd-El-Moneem			
QA/QC Survey	Eng. Mohamed Khalil			
QA/QC	Eng. Mostafa Ryad			
QA/QC	Eng. Mohamed Ryad			
Drawings & Inspection	Eng. John Sgum		28-5-2023	
Approval Status: A, MA, B Please Tick if Not Attended				

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26



Contractor Company	Eng. Abdelhakim Elshorbagy For Consulting	Contract Company	Contract No. / Date
Issued by Contractor	Eng. Mohamed Elmaghrabi	Contract Serial Number	1000
Reviewed by QA/QC	Eng. Mervin Elmaghrabi	Contract Serial Number	1000
Reviewed by QA/QC	Eng. Mervin Elmaghrabi	Contract Serial Number	1000

Contract	Contract No. / Date	Contract Serial Number	Contract Serial Number
Contract	Contract No. / Date	Contract Serial Number	Contract Serial Number

Description of Materials	Subcontract Layer Total Quantity (5000 m ²)		
Location to be used	From Station (85+000.5) to Station (85+007.5)		
Sample only	Yes	Materials Type	Filler
Supplier Name		Case Sheet provided	Not attached
Reference in BoD		Specification	Subcontract Layer (5000 m ²) only
Prequal Location reference		Test Samples Results	
Reference Photos	No/Yes	Other	
Comments by Eng. Mervin Elmaghrabi (QA/QC)	Comments by Eng. Mervin Elmaghrabi (QA/QC)		
1- Quality and Quantity of 1000 m ² only (5000 m ²) only	1- All tests were tested for Quality and Quantity (5000 m ²) only		
2- Test Sample Report (5000 m ²) only	2- Test Sample Report (5000 m ²) only		
	3- Final approval is subject to above mentioned comments.		

APPROVAL STATUS				
Organization	Name	Sign	Date	Remarks
Contractor	Eng. Mohamed Elmaghrabi			A
QA/QC	Eng. Mervin Elmaghrabi			A
QA/QC	Eng. Mohamed Elmaghrabi			
Employer Representative	Eng. Mervin Elmaghrabi			Approved

* Supplier
 ** of quality, quantity and quantity

15/6

Contractor Company	Eng. Abdelkarem El-Feky for Consulting		Designer Company	SPECTRUM Engineering Consulting Office																	
Issued by Contractor	Name	Eng. Mohamed El-Feky	Date/Serial Number	10/5/2023																	
	Signature		(M.J.R.14) (2023)	Time: 3:00 PM																	
Received by GARB CONSULTANT	Eng. Momen Essawy		<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>C4</td> <td>MM</td> <td>TY</td> <td>RT</td> <td>UM</td> </tr> <tr> <td>282</td> <td>14</td> <td>05</td> <td>15</td> <td>6</td> <td>23</td> <td>8</td> <td>0</td> </tr> </table>			C1	C2	C3	C4	MM	TY	RT	UM	282	14	05	15	6	23	8	0
C1	C2	C3	C4	MM	TY	RT	UM														
282	14	05	15	6	23	8	0														

CODE: 1	SI to SI	SI to SI	SI to SI
	Station Reference	Depart Reference	For Kilometer point only Start Km is used
Work Activity			
Sub Element of Activity			

Description of Materials	[Subelement2]				
Location to be Used	From	385+007.5	TO	385+500	
MAR & UIR Approval No	UIR SB-005	Date	3/5/2023		
	Uir SB-005		3/5/2023		
	Uir SB-010		17/5/2023		
	M.A.R.(QT SB1)		28/3/2023		
Supplier Name					
Test Requirement	F.D.T (ASTM D 1556)	Specification	DATAWORK SPECIFICATIONS & TESTING REPORT (Q22)-10.2 VERSION 2 BY CRACKON GROUP		
Reference Photos	Na/Yes	Other			
Item	Description	Unit	Quantity	Arrival Date	Note
1	SAND CONE TEST	NUMBER	50	11/6/2023	
2					
3					
4					
Comments by: Eng. Momen Essawy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allah (ER)			
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.		1-F.D.T was carried-out by Third party lab Combussal. 2-Results report attached and acceptable with project specifications. 3-Final approval is subject to above mentioned comments.			

APPROVAL STATUS				
Organization	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed El-Feky			A
QA/QC *	Eng. Momen Essawy			A
GARB**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allah		12-6-2023	AWC

* Designer
 ** Approving/Signs Client only



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/20-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031708/LA

Report NO. : 1386/01/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام الظلي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	1	2	3	4	5
Description	Sr (385+010)	Sr (385+020)	Sr (385+030)	Sr (385+040)	Sr (385+050)
Initial wt. (gm)	11348	9070	10078	6736	9236
Wt. after filling the cone and the hole (gm)	8230	6883	9910	3648	6100
Wt. of wet Sample from hole (gm)	2490	2439	2540	2478	2460
Wt. of sand filling hole (gm)	1590	1590	1040	1678	1610
Wt. of sand filling cone (gm)	1620	1620	1520	1528	1520
Density of standard sand (g/cm ³)	1.50				
Volume of hole (cm ³)	1060.66	1060.66	993	1048.7	1073.3
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	188.1	191.7	191	190.6	191.2
Wet Density (g/cm ³)	2.340	2.292	2.323	2.388	2.290
Moisture ratio (%)	6.2	4.5	5.0	4.9	4.8
Dry Density (g/cm ³)	2.224	2.197	2.213	2.289	2.191
(Prox. dry) (g/cm ³)	2.188				
Compaction Ratio (%)	102	106	101	103	100

Lab director

Eng : Eman. E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Mersha
Tel: 002 83 4794595 - 002 034301199
Email : chdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031705/1A

Report NO. : 1386/20center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام الطائي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Points NO.	6	7	8	9	10
Description	St (385+688)	St (385+678)	St (385+683)	St (385+990)	St (385+500)
Initial wt. (gm)	8760	8660	16493	7216	6190
Wt. after filling the cone and the hole (gm)	5630	5530	7390	4076	3086
Wt. of wet Sample from hole (gm)	3130	3130	9103	3140	3104
Wt. of sand filling hole (gm)	5630	5530	9190	3140	3086
Wt. of sand filling cone (gm)	1520	1520	1820	1620	1520
Density of standard sand (g/cm ³)	1.65				
Volumes of hole (cm ³)	1088.67	1088.67	1053	1088.0	1088.0
Wt. of wet Sample (gm)	209				
Wt. of sample after drying (gm)	198.1	199.3	191	193.6	193.8
Wet Density (gm/cm ³)	2.326	2.301	2.326	2.361	2.290
Moisture ratio (%)	6.2	6.1	4.7	4.9	4.8
Dry Density (gm/cm ³)	2.210	2.189	2.221	2.369	2.187
(Max. dry) (gm/cm ³)	2.188				
Compaction Ratio (%)	101	100	102	103	100

Lab director
Eng : Eman, E. Kandil

Geotechnical consultant
Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Narghes
Tel: 802 83 434955 - 802 834701191
Email : chdept@comibassal.com
WebSite : www.comibassal.com

49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/IA

Report NO. : 1386/03/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1558

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام القلي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Point NO.	11	12	13	14	15
Description	St (385+110)	St (385+120)	St (385+130)	St (385+140)	St (385+150)
Initial wt. (gm)	5138	6290	10188	9670	6580
Wt. after filling the cone and the hole (gm)	8190	6160	7930	6860	3490
Wt. of wet Sample from hole (gm)	3690	2470	2510	2470	2005
Wt. of sand filling hole (gm)	1792	1582	1582	1572	1572
Wt. of sand filling cone (gm)	1518	1518	1518	1518	1518
Density of standard sand (g/cm ³)	1.50				
Volume of hole (cm ³)	1134.67	1064.67	935	1048.0	1048.0
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	199.1	198.3	191	190.8	190.8
Wet Density (g/cm ³)	2.362	2.342	2.366	2.357	2.388
Moisture ratio (%)	6.2	6.1	4.7	4.9	4.8
Dry Density (g/cm ³)	2.245	2.238	2.273	2.245	2.290
(g/cm ³)	2.188				
Compaction Ratio (%)	103	102	104	103	104

Lab director

Eng : Eman. H. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Merghen
Tel: 002 03 034595 - 002 034701191
Email : chelopt@comibassal.com
WebSite : www.comibassal.com

49 El Horria Avo. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-15-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 033708/1A

Report NO. : 1389/04/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام علي تانقوت
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	16	17	18	19	20
Description	St (386+169)	St (386+179)	St (395+180)	St (386+188)	St (395+208)
Initial wt. (gr)	9608	6008	8810	7510	6610
Water filling the cone and the hole (gr)	6608	3360	4890	4300	3600
Wt. of wet Sample from hole (gr)	2938	2648	3920	3210	3010
Wt. of sand filling hole (gr)	1832	1602	1912	1692	1592
Wt. of sand filling cone (gr)	1518	1518	1518	1518	1518
Density of standard sand (gr/cm ³)	1.50				
Volume of hole (cm ³)	1088.00	1088.00	1375	1128.0	1061.3
Wt. of wet Sample (gr)	200				
Wt. of sample after drying (gr)	191.5	188.6	191	190.3	193.7
Wet Density (gr/cm ³)	2.325	2.388	2.364	2.295	2.337
Moisture ratio (%)	4.4	4.9	4.7	5.1	4.9
Dry Density (gr/cm ³)	2.227	2.276	2.267	2.195	2.238
(γ_{max} dry) (gr/cm ³)	2.188				
Compaction Ratio (%)	102	104	103	100	102

Lab director

Eng : Esmat E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Mersha
Tel: 002 43 4304595 - 002 934701151
Email : chdepi@comibassal.com
Website : www.comibassal.com



40 El Horria Ave. Alex, Egypt
Tel: 002 031920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031705/1A

Report NO. : 1388/05center
Date : 12/6/2023

Field Detr. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام قنبر للتقنيات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Points NO.	21	22	23	24	25
Descriptions	St (385+210)	St (385+220)	St (385+230)	St (385+240)	St (385+250)
Initial wt. (gm)	11290	6383	9983	9750	7390
Wt. after filling the cone and the hole (gm)	6386	9050	6789	3690	4250
Wt. of wet Sample from hole (gm)	2616	2600	2679	2515	2490
Wt. of sand filling hole (gm)	1662	1692	1682	1692	1622
Wt. of sand filling cone (gm)	1618	1616	1618	1518	1518
Density of standard sand (g/cc)	1.56				
Volume of hole (cm ³)	1041.33	1061.33	1121	1068.9	1091.3
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	190.6	191.7	191	193.7	191.6
Wet Density (g/cm ³)	2.419	2.359	2.292	2.385	2.205
Moisture ratio (%)	5.9	4.3	6.3	4.5	4.3
Dry Density (g/cm ³)	2.289	2.258	2.194	2.245	2.208
(Proctor Dry) (g/cm ³)	2.188				
Compaction Ratio (%)	105	103	100	103	101

Lab director
Eng : Eman, E. Kandil

Geotechnical consultant
Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Wergthen
Tel: 082 03 4704945 - 082 034701191
Email : info@comibassal.com
WebSite : www.comibassal.com

49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-15-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031708/1A

Report NO. : 1388/06/center
Date : 12/8/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام علي شقولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	24	27	28	29	30
Description	St (385+200)	St (385+270)	St (386+280)	St (388+290)	St (385+399)
Initial wt. (gm)	8290	7930	7200	6750	6420
Weight filling the cone and the hole (gm)	5170	4733	4390	3660	3300
Wt. of wet Sample from hole (gm)	3190	3197	2810	3090	3120
Wt. of sand filling hole (gm)	9002	8582	8642	8582	8602
Wt. of sand filling cone (gm)	1018	9516	1018	1018	1018
Density of standard sand (g/cc)	1.50				
Volume of hole (cm ³)	1995.90	1521.33	1666	1954.7	1998.8
Wt. of wet Sample (gm)	200				
Wet sample after drying (gm)	101.5	100.5	92	101.5	100.5
Wet Density (gm/cm ³)	2.335	2.354	2.284	2.380	2.322
Moisture ratio (%)	4.4	4.9	4.3	4.4	4.6
Dry Density (gm/cm ³)	2.237	2.246	2.190	2.288	2.215
(Theoretical dry) (gm/cm ³)	2.180				
Compaction Ratio (%)	102	103	100	995	101

Lab director

Eng : Eman. E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry



Kilo 23 Alexandria - Cairo Desert Road - Mersha
Tel: 002 83 4394595 - 002 034701196
Email : chlopt@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031708/1A

Report NO. : 1388/07/center
Date : 12/6/2023

Field Detr. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام علي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	31	32	33	34	35
Description	St (388+319)	St (388+328)	St (388+339)	St (388+348)	St (388+350)
Initial wt. (gm)	8266	7748	19390	8930	8860
Wt. after filling the cone and the hole (gm)	6589	4618	7389	3940	6750
Wt. of wet Sample from hole (gm)	2440	2459	3550	2470	2420
Wt. of sand filling hole (gm)	1642	1652	1632	1672	1682
Wt. of sand filling cone (gm)	1618	1618	1618	1618	1618
Density of standard sand (gm/cc)	1.55				
Volume of hole (cc)	1608.66	1614.67	3989	1648.0	1664.7
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	190.5	190.3	191	196.3	190.2
Wet Density (gm/cc)	2.374	2.357	2.344	2.367	2.295
Moisture ratio (%)	6.0	4.8	4.5	6.1	5.2
Dry Density (gm/cc)	2.261	2.210	2.243	2.243	2.182
(max dry) (gm/cc)	2.188				
Compaction Ratio (%)	103	101	103	102	100

Lab director

Eng : Eman. E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

880 23 Alexandria - Cairo Desert Road - Marghera
Tel: 002 63 438495 - 002 63430189
Email : chdept@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/28-El-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 081706/1A

Report NO. : 1386/08/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام القلي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	36	37	38	39	40
Description	St (385+388)	St (385+376)	St (385+380)	St (385+390)	St (385+400)
Initial wt. (gm)	6720	9460	9400	6055	8648
Wt. after filling the cone and the hole (gm)	3550	6340	6330	2870	5490
Wt. of wet Sample from hole (gm)	2680	2520	2640	2500	2500
Wt. of sand filling hole (gm)	1622	1602	1652	1672	1632
Wt. of sand filling cone (gm)	1618	1618	1618	1510	1510
Density of standard sand (Y _s) (gm/cc)	1.50				
Volume of hole (cc)	1061.33	1068.00	1635	1114.7	1038.0
Wt. of wet Sample (gm)	209				
Wt. of sample after drying (gm)	191.5	190.7	190	191.4	190.2
Wet Density (Y _{wet}) (gm/cc)	2.293	2.359	2.356	2.288	2.256
Mixture ratio (%)	4.4	4.9	6.2	4.6	5.1
Dry Density (Y _{dry}) (gm/cc)	2.196	2.269	2.243	2.189	2.188
(Y _{max dry}) (gm/cc)	2.188				
Compaction Ratio (%)	166	163	162	100	100

Lab director

Eng : Emran E. Kandil

Geotechnical consultant

Dr Mohamed Mostafa Barry



8/10 23 Alexandria - Cairo Desert Road - Mersha
Tel: 002 03 4384595 - 002 034391391
Email: cdivdept@comibassal.com
WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-15-2011
Accredited by : Egyptian Accreditation Council (EGAC) under No. 031706/1A

Report NO. : 1388/09/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام التلي للمقاولات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Point NO.	41	42	43	44	45
Description	St (265+450)	St (365+429)	St (385+430)	St (385+448)	St (385+458)
Initial wt. (gm)	10360	7658	6418	7990	7980
Wt. after filling the cone and the hole (gm)	7263	5980	5289	4700	3340
Wt. of wet Sample from hole (gm)	2490	2428	2530	2556	2450
Wt. of sand filling hole (gm)	1582	1582	1612	1642	1622
Wt. of sand filling cone (gm)	1018	1010	1010	1018	1018
Density of standard sand (g/cc)	1.50				
Volume of hole (cc)	1054.67	1056.67	1679	1054.7	1091.3
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	188.6	191.5	191	192.8	193.8
Wet Density (g/cc)	2.352	2.295	2.354	2.329	2.283
Moisture ratio (%)	4.6	4.4	4.5	4.2	4.9
Dry Density (g/cc)	2.223	2.197	2.245	2.236	2.194
Compaction Ratio (%)	102	100	103	103	100

Lab director

Eng : Eman. E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

Kile 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4701595 - 002 034701591
Email: chdopt@comibassal.com
Website: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931462
Fax: 002 033900476
Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/3A

Report NO. : 1306/10/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام علي شقالات
Project : Electric express train
Sample : Sub ballast (2)
Date of test : 11-6-2023

Results :

Points NO.	46	47	48	49	50
Description	St (385+460)	St (385+470)	St (385+480)	St (385+490)	St (385+500)
Initial wt. (gr)	6400	7000	9000	6578	7338
Wt after filling the cone and the hole (gr)	5400	4350	6570	3433	4243
Wt of wet Sample from hole (gr)	2500	2550	2470	3520	2490
Wt. of sand filling hole (gr)	1582	1612	1832	1622	1572
Wt. of sand filling cone (gr)	1518	1518	1518	1518	1518
Density of standard sand (Mg/m ³)	1.50				
Volume of hole (cm ³)	1641.33	1685.33	1666	1695.3	1649.6
Wt of wet Sample (gr)	200				
Wt of sample after drying (gr)	191.5	191.8	191	192.0	190.8
Wet Density (Mg/m ³)	2.435	2.349	2.313	2.320	2.376
Moisture ratio (%)	4.4	4.3	4.9	4.2	4.8
Dry Density (Mg/m ³)	2.299	2.263	2.204	2.237	2.267
($\gamma_{max dry}$) (Mg/m ³)	2.588				
Compaction Ratio (%)	108	103	101	102	104

Lab director

Eng : Eman, E. Kandil

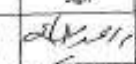
Geotechnical consultant

Dr. Mohamed Mostafa Badry

810 23 Alexandria - Cairo Desert Road - Mergham
Tel: 002 03 4764595 - 002 034791191
Email : civil@comibassal.com
WebSite : www.comibassal.com

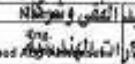
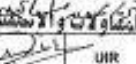
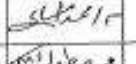
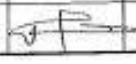


49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com

UNIVERSAL INSPECTION REQUEST		    	
RECEIPT of NOTIFICATION -Minimum Notice Period not less than 24 Hours The Work described below will be complete and ready for inspection at checked time please			
Contractor Company	Abd EL-Salam EL-Fiky Contracting Company	Designer Company*	SPECTRUM Engineering Consulting Office
Issued by Contractor	Name: Ahmed Abdel-Monem Sign:  Ahmed Abdel-Monem	Date/Serial Number	2/05/2023 (RSB2/005)
Received by GARB CONSULTANT	Eng. Mohamed Nagib	UIR	11:00 AM
CODE 1	S1 to S21 Station Reference	S1 to D3 Depot Reference	For XXX Note For XRS meter point only Start Km is used
CODE 2	Work Activity		
CODE 3	Sub Element of Activity		
EXPLANATION OF WORK TO BE INSPECTED			
Description	Element	Item	
from St. 885+007.5 To St. 885+500	Subballast 2	Subballast	
INSPECTION DETAILS the following will be made at the place of inspection then			
Planned Inspection Date	Planned Inspection Time		
COMPLIANCE EVIDENCE when included as appropriate			
Checklist Attached	Test Results Attached	Calibration Attached	Other as Indicated
Drawing Reference	References	MS Reference	
Plan and Profile REV. 32	MAR (QY SB1) MRB (SB(S61))	-Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-44) VERSION 1 BY ONECON GROUP. -TECHNICAL REPORT (CG21-322.1) VERSION 1 BY ONECON GROUP.	
Comments by: Eng. Mohamed Khalil (KY2)			
1- Attached Master Sheet approved by SPECTRUM.			
Comments by: Eng. Mohamed Nagib (SPECTRUM)		Comments by: Eng. Alex Abd-Allah (GB)	
1- تم استلام القطاع فحصه 2- تم مراجعة شيت المتناسيب		1-coordinates & levels and width checked by GARB consultant 2- (REV. 31 & X-sec./20m) Should Approved from SYSTRA. 3-Final approval is subject to above mentioned comments.	
INSPECTION RESULT			
Organization	Name	Sign	Date
Contractor	Eng. Ahmed Abdel-Monem		
KY2 Survey	Eng. Mohamed Khalil		
QA/QC*	Eng. Mohamed Nagib		
GARB**	Eng. Mohamed Fayad		
Employers Representative	Eng. John Sunny		
		Approval Status	Please Tick If Not Attend
		A-AWC-R	
		A	
		AWC	
		A	
		AWC	

* Designer
File Name : MS-F 1022

Page 1 of 1

UNIVERSAL INSPECTION REQUEST											
RECEIPT of NOTIFICATION-Minimum Notice Period not less than 24 Hours The Work described below will be complete and ready for inspection at planned time shown											
Contractor Company		Abd EL-Salam EL-Faky Contracting Company				Designer Company*		(SPECTRUM) Engineering Consulting Office			
Issued by Contractor		 Eng. Ahmed Abdel-Aziz				Date/Serial Number		2/05/2023 IRSB2(008)			
Received by GARBS CONSULTANT		 Eng. Mohamed Nagib				UHR		01 02 03 04 05 06 07 08 09 10 11 12 385 390 395 400 405 410 415 420 425 430 435 440			
CODE - 1		S1 to S21 Station Reference		D1 to D3 Depot Reference		Kp XXX Note For K50 meter point only Start Km is used					
CODE - 2		Work Activity									
CODE - 3		Sub Element of Activity									
EXPLANATION OF WORK TO BE INSPECTED											
Description		Element		Item							
From St. 385+100 To St. 385+108		Subballast 2		Subballast							
INSPECTION DETAILS The following will be ready at the Planned Inspection Time											
Planned Inspection Date				Planned Inspection Time							
COMPLIANCE EVIDENCE Submit be included as appropriate											
Checklist Attached		Test Results Attached		Calibration Attached		Other as Indicated					
Drawing Reference		References		MS Reference							
Plan and Profile REV. 32		MAR (QT 581) MIR () (SB(002)		-Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (EG21-4L) VERSION 2 BY CIVICOM GROUP. -TECHNICAL REPORT (EG21-42-4) VERSION 1 BY CIVICOM GROUP.							
Comments by Eng. Mohamed Khalil (XYZ)											
1- Attached Master Sheet approved by SPECTRUM .											
Comments by Eng. Mohamed Nagib (SPECTRUM)											
1- تم استلام القطاع الممنوع بهي 2- تم مراجعة شيت المتناسب											
Comments by Eng. Alaa Abd-Alaziz (GB)											
1-coordinates & levels and width checked by GARBS consultant 2- (REV. 31 & X-sec./20m) Should Approved from SYSTRAL. 3-final approval is subject to above mentioned comments.											
INSPECTION RESULT											
Organisation	Name	Sign	Date	Time	Approval Status	Please Tick if Not Attend					
Contractor	Eng. Ahmed Abdel-Aziz				A						
XYZ Survey	Eng. Mohamed Khalil				AWC						
QA/QC*	Eng. Mohamed Nagib				A						
GARBS**	Eng. Mohammed Fayal										
Employers Representative	Eng. John Samy		3-5-2023		AWC						

* Designer
File Name : IRS-F.I.02

Page 1 of 1

UNIVERSAL INSPECTION REQUEST		RECEIPT of NOTIFICATION-Minimum Notice Period not less than 24 Hours	
The Work described below will be complete and ready for inspection at planned time.			
Contractor Company	Abd EL-Salam EL-Paky Contracting Company	Designer Company*	(SPECTRUM) Engineering Consulting Office
Issued by Contractor	Name: Eng. Ahmed Abd-Elmesouf Signature: [Signature] Date: 16/05/2023 Time: 4:00 PM	Date/Serial Number	IR.SB2 (010)
Received by GARB CONSULTANT	Eng. Mostafa Ryad Signature: [Signature]	UR	SI SS SW CS 17 05 2023 12 00
CODE-1	S1 to S21 Station Reference	D1 to D3 Depot Reference	Kp XXX Note For K50 meter point only Start Km is used
CODE-2	Work Activity		
CODE-3	Sub Element of Activity		
EXPLANATION OF WORK TO BE INSPECTED			
Description	Element	Item	
From St. 385+300 To St. 385+500	Subballast 2	Subballast	
INSPECTION DETAILS The following will be ready at the Planned Inspection Date.			
Planned Inspection Date	Planned Inspection Time		
COMPLIANCE EVIDENCE must be included as appropriate			
Checklist Attached	Test Results Attached	Calibration Attached	Other as indicated
Drawing Reference	References	MS Reference	
Plan and Profile REV. 32	MAR (QT SB1) MAR (SO (004))	-Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (CG21-43) VERSION 2 BY OMVECON GROUP. -TECHNICAL REPORT (CG21-122-1) VERSION 3 BY OMVECON GROUP.	
Comments by: Eng. Mohamed Khalil (XYZ)			
1- Attached Master Sheet approved by SPECTRUM.			
Comments by: Eng. Eng. Mostafa Ryad (SPECTRUM)		Comments by: Eng. Alaa Abd-Elmot (GRI)	
1- تم استلام اللقاح لمسح بري 2- تم مراجعة شيفت المسحوب		1-coordinates & levels and width checked by GARB consultant 2- (REV. 32 & K-sect./20m) Should Approved from SYSTRA. 3-Final approval is subject to above mentioned comments.	
INSPECTION RESULT			
Organisation	Name	Sign	Date Time Approval Status Please Tick If Not Attend
Contractor	Eng. Ahmed Abd-Elmesouf	[Signature]	17-5-23 A
XYZ Survey	Eng. Mohamed Khalil	[Signature]	ANC
QA/QC*	Eng. Mostafa Ryad	[Signature]	A
GARB**	Eng. Mohammed Fayad		
Employers Representative	Eng. John Samy	[Signature]	17-5-23 ANC

* Designer
File Name: ISS.P.1.032

Page 1 of 1

Contractor Company	Eng. Abdelhaleem ElFayez شركة	Designer Company	(SPECTRUM) Engineering Consulting Office
Issued by Contractor	Name: Eng. Mohamed Ismail Date/Serial Number: 28/3/2023 07/28/23	Time	09:00
Received by GAAR CONSULTANT	Eng. Mazen Essany	CS	CS
	285	EW	CS
	28	9	23
	8	0	

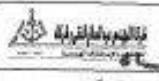
Station Reference	Station Reference	Sub Element of Activity
Sub Element of Activity	Sub Element of Activity	Sub Element of Activity

Description of Materials	Subballast Layer Total Quantity (5000 m ³)		
Location to be Used	From Station 385+007.5) to Station (386+007.5)		
Sample only	Yes	Materials Type	Fill layers
Supplier Name		Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (EG21-41.2) VERSION 2 BY CHRECOR GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No/Yes	Other	
Comments by: Eng. Mazen Essany (SPECTRUM)	Comments by: Eng. Alaa Abd-Atatif (SR)		
Quality test Result By Third Party Lab Comiborsal is Approved.	1-All tests were selected for Quality test and were carried-out by Third party lab Comiborsal.		
This Sample Representative (5000 m ³) only.	2-Results report attached and acceptable with the project specifications.		
	3-Final approval is subject to above mentioned comments		

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Ismail			A
JA/OC *	Eng. Mazen Essany			A
SARB**	Eng. Mohammed Fayad			
Employers Representative	Eng.			AWC

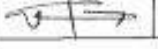
* Designer
** Engineer/Manager/Consultant

11/4

MATERIAL INSPECTION REQUEST		   																	
Contractor Company	Eng. Abdifattah El-Fayez for Construction	Designer Company	SPECTRUM Engineering Consulting Office																
Issued by Contractor	Name: Eng. Mohamed Ismail Date/Serial Number: 12/6/2023 (MLR SB 007)	Time: 2:00 PM																	
Received by G&B CONSULTANT	Eng. Maren Essawy Signature: 	<table border="1"> <tr> <td>CS</td> <td>CS</td> <td>CS</td> <td>CS</td> <td>MM</td> <td>TY</td> <td>HT</td> <td>MM</td> </tr> <tr> <td>385</td> <td>FW</td> <td>CS</td> <td>13</td> <td>6</td> <td>23</td> <td>1</td> <td>0</td> </tr> </table>		CS	CS	CS	CS	MM	TY	HT	MM	385	FW	CS	13	6	23	1	0
CS	CS	CS	CS	MM	TY	HT	MM												
385	FW	CS	13	6	23	1	0												

CODE-1	01 to 531	01 to 53	Sp. 1000 Note
	Material Reference	Depth Reference	For Kilometer point only that it is used
	Work Activity		
	Sub Elements of Activity		

Description of Materials	(Subballast2)			
Location to be Used	From	385+500	TO	396+007.5
MAR & UR Approval No	URR SB-007 URR SB-011 URR SB-0012 M.A.R.(QT 592)	Date	16/5/2023 28/5/2023 30/5/2023 18/5/2023	
Supplier Name				
Test Requirement	F.D.T.(ASTM D 1556)	Specification	LAWYER SPECIFICATIONS & TESTING REPORT (C021-45.1) VERSION 2 BY CIVILCON GROUP	
Reference Photos	No/Yes	Other		
Item	Description	Unit	Quantity	Arrival Date
1	SAND CONE TEST	NUMBER	50	13/6/2023
2				
3				
4				
Comments by: Eng. Maren Essawy (SPECTRUM)		Comments by: Eng. Alaa Abd-Allah (ER)		
1-The Compaction Test Result F.D.T. (ASTM D 1556) is Approved.		1-F.D.T was carried-out by Third party lab Comibatool. 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. Mohamed Ismail			A
QA/QC *	Eng. Maren Essawy			A
G&B**	Eng. Mohammed Fayad			
Employers Representative	Eng. Alaa Abd-Allah		13-6-2023	Awc

* Designer
 ** Alignment/Design/ Survey only



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2021
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/LA

Report NO. : 140401/center
Date : 13/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام طاهر للمقاولات
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Pallets NO.	1	2	3	4	5
Description	SI (285+512)	SI (285+528)	SI (285+538)	SI (285+543)	SI (285+558)
Initial wt. (gm)	7180	8188	6640	7739	8900
Weight after filling the cone and the hole (gm)	3330	5128	3588	4479	4980
Wt. of wet sample in hole (gm)	2450	2538	2588	2470	2950
Wt. of sand filling hole (gm)	1560	1618	1633	1610	1890
Wt. of sand filling cone (gm)	1850	1658	1650	1650	1850
Density of standard sand (g/cc)	1.52				
Volume of hole (cc)	1648.69	1673.32	1687	1673.3	1596.7
Wt. of wet sample (gm)	209				
Wt. of sample after drying (gm)	182.3	193	192	193.4	183.2
Wet Density (g/cc)	2.388	2.357	2.301	2.301	2.384
Moisture ratio (%)	4.8	3.6	4.2	3.4	3.6
Dry Density (g/cc)	2.265	2.276	2.268	2.265	2.328
Specific Gravity	2.210				
Compaction Ratio (%)	102	103	100	101	101

Lab director

Eng : Eman E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

810 23 Alexandria - Calio Desert Road - Heliopolis
Tel: 062 93 4704955 - 062 434701191
Email : info@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/20-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO. : 1404021center
Date : 13/6/2023

Field Detr. Of Density Of Soil In Place Report

ASTM - D 1556

General consultant

SYSTRA

Consultant

SPECTRUM

Contractor

شركة عبد السلام القلي للمقاولات

Project

Electric express train

Sample

Sub-ballast layer (2)

Date of test

12-6-2023

Results

Punches NO.	6	7	8	9	10
Description	Sr (385+668)	Sr (385+570)	Sr (385+568)	Sr (385+568)	Sr (385+668)
Initial wt. (gms)	11688	4268	18700	7368	4870
Wt. after filling the cone and the hole (gms)	8320	5900	1462	4601	3588
Wt. of soil sample from hole (gms)	2870	2430	2458	2488	2348
Wt. of sand filling hole (gms)	1630	1550	1088	1622	1648
Wt. of sand filling cone (gms)	1850	1850	1668	1652	1650
Density of standard sand (g/cc)	1.50				
Volume of hole (cc)	1906.67	1633.33	1668	1684.8	1683.3
Wt. of wet Sample (gms)	280				
Wt. of sample after drying (gms)	190.5	193	193	193.0	190.5
Wet Density (g/cc)	2.395	2.382	2.390	2.284	2.323
Moisture ratio (%)	4.0	3.8	3.8	3.8	3.4
Dry Density (g/cc)	2.274	2.288	2.274	2.204	2.248
Compaction Ratio (%)	2.250				
Compaction Ratio (%)	93	102	103	90	102

Lab director

Eng. : Ezzan. E. Kandil



Geotechnical consultant

For Dr. M. -
Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Mergem
Tel: 002 03 4704595 - 002 034701191
Email : comibassal@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/20-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/LA

Report NO. : 1404/03/center
Date : 13/6/2023

Field Detr. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام العلي للهندسة
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Pokes NO.	11	12	13	14	15
Description	St (285+618)	St (285+628)	St (285+630)	St (285+640)	St (285+650)
Initial wt. (gm)	10659	7270	9430	6030	8706
Wt. after filling the cone and the hole (gm)	7378	4820	6210	2778	5468
Wt. of wet Sample from hole (gm)	2883	2450	2623	2468	2930
Wt. of sand filling hole (gm)	1630	1008	1650	1610	1640
Wt. of sand filling cone (gm)	1650	1658	1630	1630	1650
Density of standard sand (Mg/m ³)	1.50				
Volume of hole (cm ³)	1066.67	1666.67	1613	1673.3	1693.3
Wt. of wet Sample (gm)	200				
Wt. of Sample after drying (gm)	192.2	100	180	182.8	181.5
Wet Density (Mg/m ³)	2.358	2.325	2.342	2.382	2.314
Moisture ratio (%)	3.9	5.3	3.8	4.2	4.6
Dry Density (Mg/m ³)	2.276	2.203	2.254	2.268	2.218
(Mg/m ³)	2.210				
Compaction Ratio (%)	103	106	102	103	100

Lab director

Eng : Esmat E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem
Tel: 002 03 4384595 - 002 034381191
Email : civdept@comibassal.com
WebSite : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/LA

Report NO. :140404/center
Date : 13/6/2023

Field Deter. Of Density Of Soil In Place Report

ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام القلي للمقاولات
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Pit No.	16	17	18	19	20
Describe	St (185+966)	St (305+570)	St (385+088)	St (385+090)	St (385+780)
Initial wt. (gm)	9656	2755	9583	6189	7530
Wt. after filling the cone and the hole (gm)	7260	4583	6190	3895	4268
Wt. of wet Sample from hole (gm)	2478	2990	2436	2560	3579
Wt. of sand filling hole (gm)	1589	1968	1583	1044	1620
Wt. of sand filling cone (gm)	1650	1668	1650	1650	1650
Density of standard sand (g/cc)	1.50				
Volume of hole (cc)	1880.00	1693.33	1048	1006.0	1689.8
Wt. of wet Sample (gm)	280				
Wt. of sample after drying (gm)	190	193	190	193.6	198.3
Wet Density (Wet) (g/cc)	2.338	2.287	2.337	2.318	2.389
Moisture ratio (%)	4.2	3.6	6.3	3.4	5.1
Dry Density (Dry) (g/cc)	2.237	2.287	2.228	2.241	2.264
(Wet/Dry) (g/cc)	2.218				
Compaction Ratio (%)	101	99	100	101	102

Lab director

Eng : Eman E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Mersha
Tel: 002 83 4204395 - 002 83470191
Email : cidepi@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO. : 1484/05/center
Date : 12/6/2023

Field Detr. Of Density Of Soil in Place Report

ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام طاني للمقاولات
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Points NO.	21	22	23	24	25
Description	St (285+712)	St (285+726)	St (285+732)	St (285+742)	St (285+752)
Initial wt. (gm)	11608	7630	13166	7048	6890
Wt. after filling the cone and the hole (gm)	7950	4488	7083	3043	3380
Wt. of wet Sample from hole (gm)	2550	2069	5889	2475	2500
Wt. of sand filling hole (gm)	5625	1615	1665	1885	985
Wt. of sand filling cone (gm)	1545	1545	1545	1545	1545
Density of standard sand (kg/m ³)	1.60				
Volume of hole (cm ³)	1283.33	1075.87	997	1056.7	1123.3
Wt of wet Sample (gm)	200				
Wt of sample after drying (gm)	193.0	182.8	192	193.2	193.4
Wet Density (kg/m ³)	2.398	2.322	2.378	2.342	2.396
Moisture ratio (%)	3.3	3.8	4.2	3.5	3.4
Dry Density (kg/m ³)	2.279	2.238	2.281	2.283	2.238
(kg/m ³)	2.210				
Compaction Ratio (%)	101	101	103	102	101

Lab director
Eng : Eman. E. Kandil



Geotechnical consultant
Dr. Mohamed Mostafa Badry

810 23 Alexandria - Cairo Desert Road - Narghah
Tel: 002 93 4204595 - 002 934701151
Email : info@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax :002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/29-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO. : 1404/08/center
Date : 13/6/2023

Field Detr. Of Density Of Soil In Place Report

ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام المكي للتقانة
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Points NO.	26	27	28	29	30
Description	S1 (305+790)	S2 (385+778)	S3 (395+780)	S4 (395+790)	S1 (305+800)
Initial wt. (gm)	8938	8880	7450	6400	10880
Wt after filling the cone and the hole (gm)	5733	6882	4900	3306	7706
Wt. of wet Sample from hole (gm)	2825	2998	2550	2460	2665
Wt. of sand filling hole (gm)	1885	1645	1668	1585	1645
Wt. of sand filling cone (gm)	1545	1545	1545	1545	1545
Density of standard sand (gm/cc)	1.55				
Volume of hole (cc)	1118.90	1096.67	1670	1583.3	1096.7
Wt of wet Sample (gm)	203				
Wt of sample after drying (gm)	183.6	183.2	183	183.8	182.1
Wet Density (gm/cc)	2.275	2.288	2.383	2.332	2.375
Moisture ratio (%)	3.4	3.5	3.8	3.8	4.1
Dry Density (gm/cc)	2.201	2.282	2.384	2.251	2.260
G(max,dry) (gm/cc)	2.210				
Compaction Ratio (%)	100	100	104	100	103

Lab director

Eng : Eiman E. Kasdi

Geotechnical consultant

For Dr. H -
Dr. Mohamed Mostafa Badry

8/Bo 23 Alexandria - Cairo Desert Road - Menghera
Tel: 002 03 4704595 - 002 034781191
Email: info@comibassal.com
Website: www.comibassal.com



49 El Horria Ave, Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/28-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO. : 140407/center
Date : 13/6/2023

Field Deter. Of Density Of Soil in Place Report

ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام طه للمقاولات
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Results :

Points NO.	31	32	33	34	35
Description	S1 (285+850)	S1 (285+820)	S2 (285+830)	S2 (285+840)	S1 (285+850)
Initial wt. (gm)	16640	7700	9770	8320	8906
Wt after filling the cone and the hole (gm)	7608	4480	8590	3400	6838
Wt. of wet Sample from hole (gm)	2458	2825	2496	2476	2588
Wt. of sand filling hole (gm)	1585	1605	1635	1575	1575
Wt. of sand filling cone (gm)	1545	1545	1545	1545	1545
Density of standard sand (gm/cc)	1.58				
Volume of hole (cc)	1063.33	1110.00	1690	1950.0	1058.0
Wt. of wet Sample (gm)	208				
Wt. of sample after drying (gm)	181	192	193	188.2	193.6
Wet Density (gm/cc)	3.384	2.342	2.384	2.362	2.381
Moisture ratio (%)	4.7	4.2	3.7	5.2	4.9
Dry Density (gm/cc)	2.280	2.263	2.282	2.237	2.268
Compaction Ratio (%)	100	102	100	101	103

Lab director

Eng : Eman. E. Kandil



Geotechnical consultant

Dr. Mohamed Mostafa Badry

Wilo 23 Alexandria - Cairo Desert Road - Heliopolis
Tel: 002 83 4704545 - 002 834701191
Email : info@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : Internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by : Egyptian General Authority for Petroleum under No. 34/89-11-2011
Accredited by : Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO. : 1404/86/center
Date : 12/6/2023

Field Deter. Of Density Of Soil In Place Report ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام القلي للخطوط
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Points NO.	34	37	38	39	40
Description	St (285+668)	St (285+878)	St (285+889)	St (355+890)	St (385+906)
Initial wt. (gm)	8440	8290	7350	8900	8458
Wt after filling the cone and the hole (gm)	5789	5540	4758	5768	5395
Wt. of wet Sample from hole (gm)	2550	2658	2592	2890	2476
Wt. of sand filling hole (gm)	1635	1685	1655	1655	1689
Wt. of sand filling cone (gm)	1645	1545	1645	1645	1645
Density of standard sand (g/cc)	1.50				
Volume of hole (cm ³)	1099.89	1076.68	1503	1763.3	1686.7
Wt of wet Sample (gm)	260				
Wt of sample after drying (gm)	190	190.8	192	199.0	181.8
Wet Density (g/cc)	2.321	2.357	2.347	2.308	2.248
Moisture ratio (%)	5.3	4.8	4.1	4.2	4.7
Dry Density (g/cc)	2.205	2.229	2.255	2.267	2.211
(max.dry) (g/cc)	2.188				
Compaction Ratio (%)	101	102	103	103	101

Lab director
Eng : Eman E. Kandil



Geotechnical consultant
For Dr. H.
Dr. Mohamed Mostafa Badry

Vila 25 Alexandria - Cairo Desert Road - Moushry
Tel: 002 03 4704595 - 002 03470119
Email : cindepa@comibassal.com
Website : www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax : 002 033900476
Email : internal-inspection@comibassal.com



COMIBASSAL International Controllers Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 84/29-11-2021
Accredited by: Egyptian Accreditation council (EGAC) under No. 031708/1A

Report NO.: 140409/ceniter
Date: 13/6/2023

Field Detr. Of Density Of Soil In Place Report ASTM - D 1556

General consultant: SYSTRA
Consultant: SPECTRUM
Contractor: شركة عبد السلام اللامي للتقنيات
Project: Electric express train
Sample: Sub-ballast layer (2)
Date of test: 12-6-2023

Results:

Points NO.	41	42	43	44	45
Description	St (385+810)	St (385+928)	St (385+930)	St (385+940)	St (385+956)
Initial wt. (gm)	10990	6940	7410	8900	8120
Wt. after filling the cone and the hole (gm)	7030	3720	4730	5040	4580
Wt. of wet Sample from hole (gm)	3460	2420	2530	2470	2470
Wt. of sand filling hole (gm)	1615	1575	1635	1585	1505
Wt. of sand filling cone (gm)	1545	1645	1545	1505	1545
Density of standard sand (Mg/m ³)	1.50				
Volume of hole (cc)	9076.67	1890.00	1058	1663.3	1982.3
Wt. of wet Sample (gm)	290				
Wt. of sample after drying (gm)	193.4	193	192	193.5	193.4
Wet Density (Mg/m ³)	2.383	2.353	2.391	2.122	2.276
Moisture ratio (%)	3.2	3.6	4.2	3.4	3.6
Dry Density (Mg/m ³)	2.292	2.292	2.228	2.247	2.201
(from dry) (Mg/m ³)	2.188				
Compaction Ratio (%)	102	95	102	103	101

Lab director

Eng. Eman E. Kandil

Geotechnical consultant

Dr. Mohamed Mostafa Badry

Kilo 23 Alexandria - Cairo Desert Road - Merghem

Tel: 002 03 4704595 - 002 034301191

Email: cndt@comibassal.com

WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt

Tel: 002 033920176 - 002 033931462

Fax: 002 033900476

Email: internal-inspection@comibassal.com



COMIBASSAL International Controllers

Internal inspection and laboratories sector

Accredited by: Egyptian General Authority for Petroleum under No. 34/28-ET-8011
Accredited by: Egyptian Accreditation council (EGAC) under No. 031706/1A

Report NO.: 1464/16center
Date: 13/6/2023

Field Detr. Of Density Of Soil In Place Report

ASTM - D 1556

General consultant : SYSTRA
Consultant : SPECTRUM
Contractor : شركة عبد السلام الفلي للمقاولات
Project : Electric express train
Sample : Sub-ballast layer (2)
Date of test : 12-6-2023

Pit No.	46	47	48	49	50
Description	Si (385+988)	Si (385+376)	Si (385+988)	Si (385+988)	Si (385+820)
Initial wt. (gm)	10000	9283	6670	8340	7558
Wt. after filling the cone and the hole (gm)	6632	6870	2008	5178	4389
Wt. of wet Sample from hole (gm)	3368	2513	4662	3162	3169
Wt. of sand filling hole (gm)	1645	1675	3036	3225	1638
Wt. of sand filling cone (gm)	1545	1586	1545	1545	1545
Density of standard sand (g/cm³)	1.60				
Volume of hole (cm³)	1006.62	1116.87	1008	1003.3	1080.0
Wt. of wet Sample (gm)	200				
Wt. of sample after drying (gm)	192.3	193.5	193	198.6	190.5
Wet Density (g/cm³)	2.289	2.268	2.294	2.388	2.312
Moisture ratio (%)	4.0	3.4	3.9	4.0	5.8
Dry Density (g/cm³)	2.285	2.192	2.208	2.189	2.202
(gmax dry) (g/cm³)	2.188				
Compaction Ratio (%)	101	100	101	108	101

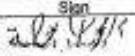
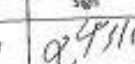
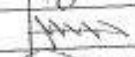
Lab director
Eng. E. Kandil
Eng: Eman, E. Kandil

Geotechnical consultant
For Dr. M.
Dr. Mohamed Mostafa Badry

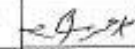
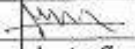
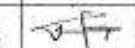
Kilo 23 Alexandria - Cairo Desert Road - Heliopolis
Tel: 002 03 4264895 - 002 034701191
Email: info@comibassal.com
WebSite: www.comibassal.com



49 El Horria Ave. Alex, Egypt
Tel: 002 033920176 - 002 033931482
Fax: 002 033900476
Email: Internal-Inspection@comibassal.com

UNIVERSAL INSPECTION REQUEST		   	
RECEIPT of NOTIFICATION-Minimum Notice Period not less than 24 Hours The block described below will be complete and ready for inspection at planned time shown			
Contractor Company	Abd EL-Salam EL-Feky Contracting Company		Designer Company* SPECTRUM Engineering Consulting Office
Issued by Contractor	Name Eng. Ahmed Abd-Elmoneem	Sign 	Date/Serial Number 15/05/2023 IRSB2(007)
Received by GARB CONSULTANT	Eng. Mustafa Fayed	Sign 	Time 4:00 PM
CODE-1	S1 to S21 Station Reference	Q1 to Q3 Datum Reference	For 100m meter point only Start Km is used
CODE-2	Work Activity		
CODE-3	Sub Element of Activity		
EXPLANATION OF WORK TO BE INSPECTED			
Description	Element	Item	
From St. 385+000 To St. 385+007.5	Subelement 2	Subelement	
INSPECTION DETAILS The following will be ready at the Planned Inspection Time			
Planned Inspection Date	Planned Inspection Time		
COMPLIANCE EVIDENCE Must be included as appropriate			
Checklist Attached	Test Results Attached	Calibration Attached	Other as Indicated
Drawing Reference Plan and Profile REV. 32	References MAR (QT SB2) MIR (SB003)	MS Reference Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (G25-41) VERSION 2 BY CAVECON GROUP TECHNICAL REPORT (G25-122.3) VERSION 1 BY CAVECON GROUP	
Comments by Eng. Mohamed Khalil (XYZ) 1- Attached Master Sheet approved by SPECTRUM.			
Comments by Eng. Eng. Mustafa Fayed (SPECTRUM) 1- تم استلام المقام لمسح بصري 2- تم مراجعة كتيبات الماكشيب		Comments by Eng. Alaa Abd-Allah (GSI) 1-coordinates & levels and width checked by GARB consultant 2- (REV. 32 & X-sec./10m) Should be Approved from SYSTRA. 3-Final approval is subject to above mentioned comments.	
INSPECTION RESULT			
Organisation	Name	Sign	Date
Contractor	Eng. Ahmed Abd-Elmoneem		
XYZ Survey	Eng. Mohamed Khalil		
QA/QC*	Eng. Mustafa Fayed		
GARB**	Eng. Mohammed Fayed		
Employers Representative	Eng. John Samad		16-5-2023
		Approval Status A-AWC-R	Please Tick if Not Attend A

UNIVERSAL INSPECTION REQUEST			
RECEIPT of NOTIFICATION-Minimum Notice Period not less than 24 Hours The Work described below will be complete and ready for inspection at planned time shown			
Contractor Company	Abd EL-Salam EL-Feky Constructing Company		Designer Company*
Issued by Contractor	 Eng. Ahmed Abdel-Moneem		(SPECTRUM) Engineering Consulting Office Date/Serial Number 27/05/2023 IRSB2(011)
Received by GARB CONSULTANT	Eng. Mostafa Ryad UR		Time 4:00 PM C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40 C41 C42 C43 C44 C45 C46 C47 C48 C49 C50 C51 C52 C53 C54 C55 C56 C57 C58 C59 C60 C61 C62 C63 C64 C65 C66 C67 C68 C69 C70 C71 C72 C73 C74 C75 C76 C77 C78 C79 C80 C81 C82 C83 C84 C85 C86 C87 C88 C89 C90 C91 C92 C93 C94 C95 C96 C97 C98 C99 C100
CODE-1	01 to 521 Station Reference		01 to 521 Depot Reference
CODE-2	01 to 521 Station Reference		01 to 521 Depot Reference
CODE-3	01 to 521 Station Reference		01 to 521 Depot Reference
EXPLANATION OF WORK TO BE INSPECTED			
Description		Element	Item
From St.	385+600	To St.	385+600
Subballast 2		Subballast	
INSPECTION DETAILS the following will be ready at the Planned Inspection time			
Planned Inspection Date		Planned Inspection Time	
COMPLIANCE EVIDENCE Must be included as appropriate			
Checklist Attached	Test Results Attached	Calibration Attached	Other as Indicated
Drawing Reference	References	N/S Reference	
Plan and Profile REV. 32	MMR (QT 182) MMR () SR 006	-Specification: EARTHWORKS SPECIFICATIONS & TESTING REPORT (CG21-41.2) WORKING BY CIVICON GROUP. -TECHNICAL REPORT (CG25-132.1) VERSION 1 BY CIVICON GROUP.	
Comments by: Eng. Mohamed Khalil (XYZ)			
1- Attached Master Sheet approved by SPECTRUM.			
Comments by: Eng. Eng. Mostafa Ryad (SPECTRUM)			
1- تم استلام القناع لمعنى بهرى 2- تم مراجعة شيد المقادير			
Comments by: Eng. Alaa Abdel-Razek (KH)			
1-coordinates & levels and width checked by GARB consultant 2- (REV. 32 & X-sec./10m) Should Approved from SYSTRA. 3-Final approval is subject to above mentioned comments.			
INSPECTION RESULT			
Organisation	Name	Sign	Date
Contractor	Eng. Ahmed Abd-Almoneem		
XYZ Survey	Eng. Mohamed Khalil		
QA/QC*	Eng. Mostafa Ryad		
GARB**	Eng. Mohammed Fayad		
Employers Representative	Eng. John Smith		28-5-2023
Approval Status		Please Tick if Not Attend	
A-AWC-R		A	
A-AWC-R		A	
A-AWC-R		A	
A-AWC-R		A	
A-AWC-R		A	

UNIVERSAL INSPECTION REQUEST		    	
RECEIPT OF NOTIFICATION -Minimum Notice Period not less than 24 Hours (The Work described below will be complete and ready for inspection at planned time shown)			
Contractor Company	Abd EL-Salem EL-Fakhry Contracting Company		Designer Company*
Issued by Contractor	Name: <u>Eng. Mohamed Khalil</u> Eng. <u>Abd-El-Moneem</u>		Date/Serial Number 27/05/2023 IBSB2(012)
Received by GARB CONSULTANT	Eng. Moustafa Ryad		Time 4:00 PM
CODE: 1	R1 to R21 Station Reference		R2 to R31 Station Reference
CODE: 2	Work Activity		No. 1000 Note For 150 meter point only Start Km is used
CODE: 3	Sub Element of Activity		
EXPLANATION OF WORK TO BE INSPECTED			
Description	Element	Item	
From St. 305+500 To St. 305+600	Subblast 2	Subblast	
INSPECTION DETAILS the following will be ready at the Planned Inspection Time			
Planned Inspection Date	Planned Inspection Time		
COMPLIANCE EVIDENCE Must be included as appropriate			
Checklist Attached	Test Results Attached	Calibration Attached	Other as Indicated
Drawing Reference	References	MS Reference	
Plan and Profile REV. 32	MAR (Q2 502) MAR (S11 (005)	-Specification: EARTHWORK SPECIFICATIONS & TESTING REPORT (EG2-41.2) VERSION 2 BY CIVTECON GROUP. -TECHNICAL REPORT (C021-122.1) VERSION 3 BY CIVTECON GROUP.	
Comments by: Eng. Mohamed Khalil (XYZ)			
1- Attached Master Sheet approved by SPECTRUM.			
Comments by: Eng. Eng. Moustafa Ryad (SPECTRUM)		Comments by: Eng. Alex Abd-Allah (GRI)	
1- تم استلام القطاع فحص وصرى 2- تم مراجعة شيت المتناسيب		1-coordinates & levels and width checked by GARB consultant 2- (REV. 32 & X-sec./20m) Should Approved from SYSTRA. 3-Final approval is subject to above mentioned comments.	
INSPECTION RESULT			
Organisation	Name	Sign	Date
Contractor	Eng. Ahmed Abd-Elmoneem		
XYZ Survey	Eng. Mohamed Khalil		
QA/QC*	Eng. Moustafa Ryad		
GARB**	Eng. Mohammed Fayad		
Employers Representative	Eng. John Samy		28-5-2023

Contractor Company	Eng. Abdulsalam EL Farah	Designer Company	SPECTRUM Engineering Consulting Office																
Issued by Contractor	Name: Eng. Mohamed Inayat Date/Serial Number: 27/4/2023 QT 99 (1)	Time	8:00																
Received by GARB CONSULTANT	Eng. Maen Essawy	MM	<table border="1"> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>SO</td> <td>MSH</td> <td>YY</td> <td>HT</td> <td>MS</td> </tr> <tr> <td>335</td> <td>EW</td> <td>CS</td> <td>29</td> <td>3</td> <td>22</td> <td>2</td> <td>0</td> </tr> </table>	C1	C2	C3	SO	MSH	YY	HT	MS	335	EW	CS	29	3	22	2	0
C1	C2	C3	SO	MSH	YY	HT	MS												
335	EW	CS	29	3	22	2	0												

Station Reference	SI to S13	Depot Reference	D1 to S3	By KEM Note
Work Activity	For Kilometer point only Start Km is used			
Sub Element of Activity				

Description of Materials	Subballast Layer Total Quantity (5000 m³)		
Location to be Used	From Station 385+007.5) to Station (386+007.5)		
Sample only	Yes	Materials Type	F81 layers
Supplier Name		Data Sheet provided	Yes attached
Reference in BoQ		Specification	SARFAWORK SPECIFICATIONS & TESTING REPORT (0223-AL 2) VERSION 2 BY OVERSEA GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No/Yes	Other	
Comments by: Eng. Maen Essawy (SPECTRUM) -Quality test Result By Third Party Lab Confirmed to Approval. -This Sample Representation (5000 m³) only.		Comments by: Eng. Alaa Abd-Alhadi (ER) 1-All tests were selected for Quality test and were carried-out by Third party lab Confirmed. 2-Results report attached and acceptable with the project specifications. 3-Final approval is subject to above mentioned comments.	

APPROVAL STATUS				
Organisation	Name	Sign	Date	A-AWC/R
Contractor	Eng. Mohamed Inayat			A
QA/QC *	Eng. Maen Essawy			A
GARB**	Eng. Mohamed Fayed			
Employers Representative	Eng. 9023			AWC

* Engineer
** Engineer/Inspector - Civil only

11/4

Contractor Company	Eng. Abdel Salam Safeky For Contracting	Designer Company	SPECTRUM Engineering Consulting Office
Issued by Contractor	Name: Eng. Mohamed Ismail Date/Serial Number: 17/5/2023 Time: 9:09	Received by GARB CONSULTANT	Eng. Mazen Essawy
CL		CS	DS
385	FW	CS	38
5	23	8	0

Station Reference	Station Reference	Work Activity	See Flowchart of Activity
385+007.5	386+007.5	Subballast Layer	

Description of Materials	Subballast Layer Total Quantity (5000 m³)		
Location to be Used	From Station 385+007.5 to Station (386+007.5)		
Sample only	Yes	Materials Type	Fill layers
Supplier Name		Data Sheet provided	Yes attached
Reference in BoQ		Specification	EARTHWORK SPECIFICATIONS & TESTING REPORT (E023-41-2) VERSION 2 BY CH2M HILL GROUP
Prequalification reference		Test Samples Results	
Reference Photos	No/Yes	Other	

Comments by: Eng. Mazen Essawy (SPECTRUM)	Comments by: Eng. Alaa Abd-Allah (CR)
1- Quality test Result By Third Party Lab Combrasil is Approved.	1- All tests were selected for Quality test and were carried-out by Third party lab Combrasil.
2- This Sample Representative (5000 m³) only.	2- Results report attached and acceptable with the project specifications.
	3- Final approval is subject to above mentioned comments.

APPROVAL STATUS				
Organization	Name	Sign	Date	A-AWC-R
Contractor	Eng. Mohamed Ismail			A
QA/QC *	Eng. Mazen Essawy			A
GARB **	Eng. Mohammed Fayel			
Employers Representative	Eng. Alaa Abd-Allah			AWC

* Designer
** Alignment/Highway Center only

15/6