
FULL CONCRETE SOLUTIONS
the international stone maker
Facestone
FULL CONCRETE SOLUTIONS

ZERTIFIKAT • CERTIFICATE • ZERTIFIKAT • CERTIFICATE • ZERTIFIKAT • CERTIFICATE

CERTIFICATE

THE INTERNATIONAL STONE MAKER (FACE STONE)

OFFICE: BUILDING NO. 3, AL-ADEEB MOHAMED EL SEBAEI STREET - NEW NOZHA, CAIRO – EGYPT

FACTORY: SAFA INDUSTRIAL AREA - ABU ZAABAL, EL KHANKA, KALYOUBEYA EGYPT

has implemented and maintains a **Quality Management System**.

MANUFACTURE OF SILICA FUME (MICRO SILICA)

Out of Scope: 8.3, 8.5.1f, 8.5.3, 8.5.5

EA: 15

Through an audit, documented in a report, it was verified that the management System fulfills the requirements of the following standard:

ISO 9001:2015

Certificate registration no..	: QA-D/EGY/9001/1630
Valid from	: 22.07.2022
Valid until	: 22.07.2023
Date of original certification	: 22.07.2022
Certification Cycle	: 3 years

Overseas Operation Manager

Begüm ADKAN
Stuttgart .2022.07.22

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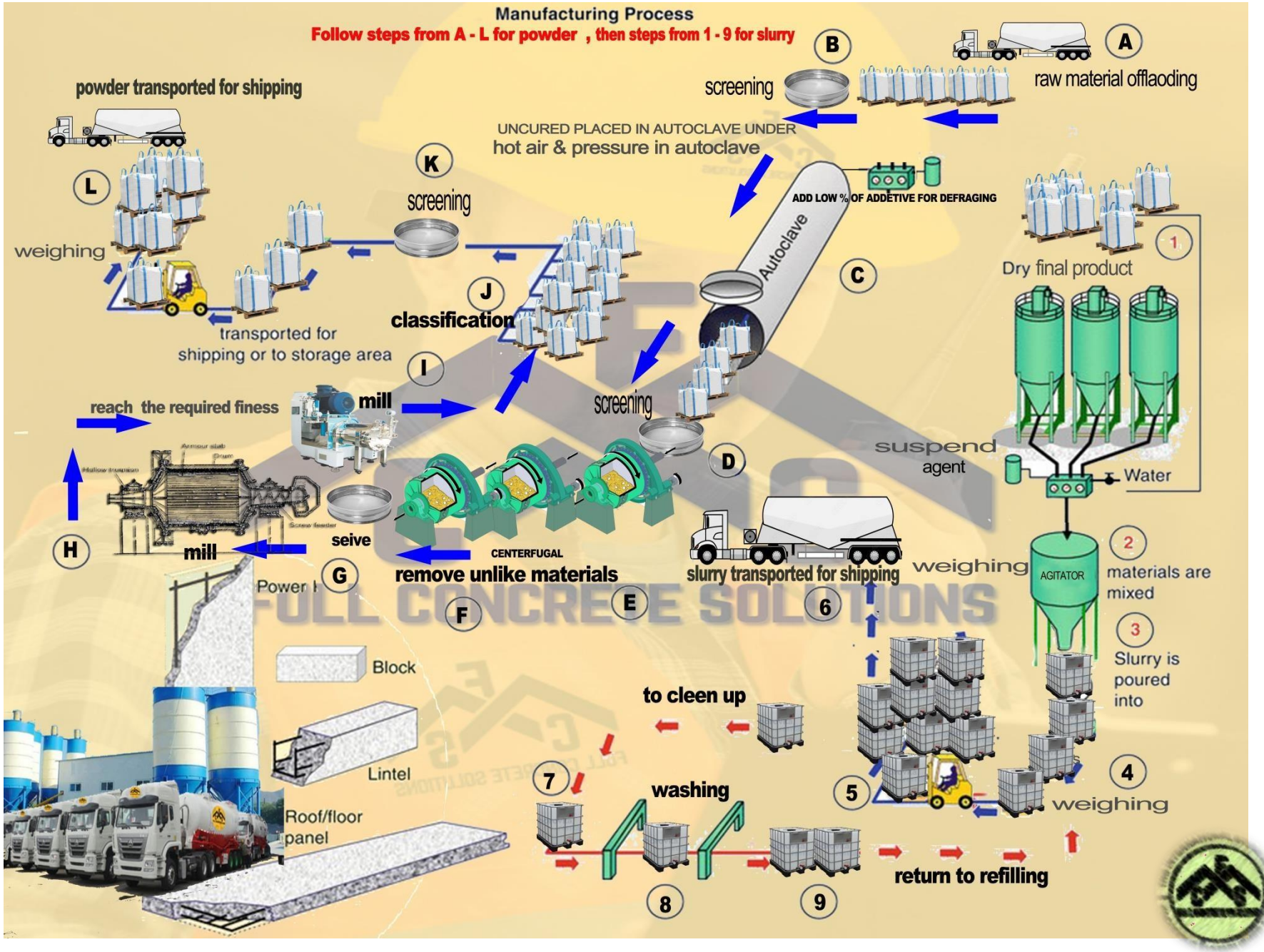
www.qatechnic.de

DAkkS Deutsche Akkreditierungsstelle D-ZM-18949-01-00


Manufacturing Process
Follow steps from A - L for powder , then steps from 1 - 9 for slurry
A
raw material offlaoding
B
screening
UNCURED PLACED IN AUTOCLAVE UNDER
hot air & pressure in autoclave
ADD LOW % OF ADDETIVE FOR DEFRAGING
Autoclave
C
1
Dry final product
suspend
agent
Water
2
weighing
AGITATOR
materials are
mixed
3
Slurry is
poured
into
4
weighing
5
6
slurry transported for shipping
D
screening
CENTERFUGAL
remove unlike materials
E
F
seive
G
mill
H
reach the required finess
I
mill
J
classification
K
screening
L
weighing
transported for
shipping or to storage area
powder transported for shipping
Block
Lintel
Roof/floor
panel
to cleen up
7
washing
8
9
return to refilling

Silica Fume Slurry is wide different than silica fume powder silica fume slurry treated as Cementious admixture not powder but silica fume powder work as Cementious material as cement

The dosage of silica fume slurry is 8% to 12% may be more according to trail mix.

Silica fume dosage 5% to 10%

Reference to ACI 234R-6(2012) Clause 1.72

- Silica-fume slurry—To overcome the difficulties associated with transporting and handling the as-produced silica fume, some suppliers have concentrated on supplying silica fume as a water-based slurry. Slurried silica fume typically contains 42 to 60% silica fume by mass. Slurry of 50% solids content will contain about 700 kg/m^3 (44 lb./ft^3) dry material versus 130 to 430 kg/m^3 (8 to 27 lb./ft^3) for as-produced Material.

Reference to the Above explanation, we confirm that the behavior of silica fume slurry equal to the behavior of silica fume powder and better than it if partial distribution

ACI 211.4R7.3.2.6

When preparing lab trial mixtures for high-strength concrete with silica fume, the effective mixing time is often **2 times longer** than those given in ASTM Practice C192/C192M. This is because silica fume has very fine particles, and a longer mixing time ensures that it is adequately dispersed throughout the mix, achieving the desired workability and performance in the concrete

ACI 211.4R 4.4

ASTM C1240 defines this silica fume as having a minimum 85% amorphous silicon dioxide

ACI 211.4R 4.3

Micro Silica in concrete makes efficient use of the hydration products of Portland cement by consuming calcium hydroxide to produce additional cementing compounds.

ACI 234R.6 3.4

Microstructure modifications the primary effect of silica fume is to reduce the porosity of the transition zone between the cement paste and aggregate

ACI 234R.6 1.7.2

Silica-fume slurry overcome the difficulties associated with transporting and handling the as-produced silica fume, some suppliers have concentrated on supplying silica fume as a water-based slurry. Slurred silica fume typically contains 42 to 60% silica fume by mass.

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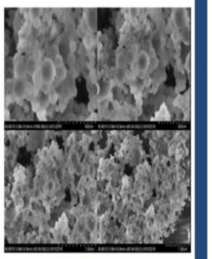
TECHNICAL DATA SHEIT

PHYSICAL AND CHEMICAL PROPERTIIS

State.....Amorphous - Su&micron powder
Solubility.....Insoluble
Structure ..... Flux-Calcined
Color ..... Gray to mediu+ gray powder
Sieve Analysis (Tyler)
/. +150 Mesh I» 105 iiicrons) 11.0
%f+ 325 Mesh I> 44 microns) ..... –
Median Particle Diameter (microns) 33.0
pH t10% Slurry) 10.0
Free Moisture (Maximum %H20) 05
Density: (In/ft3) (g/l)
Bulk Density-Densified(bulk and bagged (725to850kg/m3)
Bulk Density-Undensified{bulk & paper bags›(35Qo452kg/m3
Permeability (millidarcy)* 2100
Specific Gravity 2.33
Refractive Index 1.46
Brightness (Y) 84
* Dete mined using a VEL permea+eter



CHEMICAL ANALYSIS ASTM C1240

Si02 .....85.00%..... 89.00%
Al203 .....1.6%
Fe203 .....0.8%
Ca0 .....0.76%
Mg0.....0.3 o
Ti02 .....0.2%
Na20 .....0.2%
P205 .....0.05%
Mn0.....0.0 o
K20 ..... 0.20%
Cr203 ....<0.01%
Loss on Ignition.....6.0%..... 4.75%
cl.....0.001
zno.....0.16
moisture content .....3.0%.....1.85%
tested with Microwave plasma emission spectroscopy

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SILICA FUME —TECHNICAL DATA SHEET

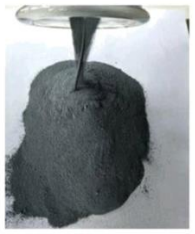
PACKAGING, STORAGE AND HANDLING

STORAGE

SILICAFUME should be keptdry, out of rather and the elements
SILICAFUME Is generallyconsldered a nuisance dust Use and handling of silica fume does not represent a health risk when normal safety rules are observed. Directcontact maycause imitation of eyes. Prdonged contact maycause skin Imitation. Inhalation maycause respiratory imitadon resultlngln coughing and shortness of breath. This product maybe hamriful If swllowed. Oo not get in eyes and awld prolonged skin contact Do not take Internally. \¥ash thorou@lywith water after handling For more deail, see our SDS.

WARRANTY STATEVENT

The information given here is based on our best knowledge, and we believe It to be true and accurate. facestone assumes no responsibilityfbr the use of these statement, recommendations or suggestions, nor are they intended as a recommendation for any use, which would infringe any patent or copyright



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www.facestone-eg.com / m.daha@facestone-eg.com

TECHNICAL DATA SHEET
PHYSICAL AND CHEMICAL PROPERTIES

Fcs 1500-1.2

Densified Microsilica.

Product Description

Fcs 1500-1.2is an industrial by product silica fume used as a supplement to cement to produce and place high performance durable concretes. Advantages

- Increased cohesiveness of the fresh concrete
- Improved placing and pumpability • High early strength.
- Lower permeability and improved durability
- Greater resistance to abrasion and impact than conventional concretes of similar strength grade
- Compressive strengths in excess of 70 MPa are easily achieved.
- Higher flexural strength and modulus of elasticity than conventional concretes of equal compressive strength.

Uses

Fcs 1500-1.2is used in concrete to meet the most demanding applications for high strength, chemical and a brains resistant, such as

- High rise construction
- Bridge construction
- Concrete slipways
- Dam spillways and hard standings
- Concrete piles and foundations

Typical Properties

Silica. Si02 % >85% ,Moisture content % <3.0 , activity index >105 ,Specific surface m2/9 15-35 loi <6.0 , bulk density 600-800

Specification Compliance

ASTM C1240 Standard specification for silica fume for use as a mineral admixture in hydraulic cement concrete, mortar, and grout.

BS EN 13263, Silica fume for concrete.

Packaging , Paper bags 25kg , Jumbo bags 500kg

Instruction for use Dosage

- As an additive (generally 8 to 12% by mass of cement) to enhance strength and durability of the fresh and/or hardened concrete
- As a partial cement replacement (5 to 10% by mass of cement) to maintain the 28-day compressive strength at lower cement content while reducing the heat of hydration, and improving durability.
- As a viscosity modifier (2 to 5% by mass of cement) to reduce bleed and to eliminate segregation in Fcs mixes.

Batching and Mixing

Fcs 1500-1.2can be batched to concrete in powder or slurry form.

- When making concrete with microsilica, the material batching sequence must be controlled.

The materials, especially the fine cementitious powders, need to be fed into the mixer at a slower rate for better mixing efficiency with the aggregate materials.

- In powder form, Fcs 1500-1.2should always be treated and batched as any other cementitious material. It should be accurately weighed and slowly fed into the mixing vessel at the same time as the cement. It should never be feed dry or as a slurry into the mixing vessel without aggregate and water already in it. as balling could occur.
- One batching sequence that has successfully been used with dry bulk microsilica is concurrently adding the course aggregate, fine aggregate, a minimum of 75% of the batch water and admixture.

Next add the cement with microsilica.

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TECHNICAL DATA SHEET
PHYSICAL AND CHEMICAL PROPERTIES

Follow this with the remaining batch water and admixture.

- In slurry form, A high speed disperser should be used to prepare the slurry in advance of adding it to concrete .

A 50/50 by weight mix of water and Fcs 1500-1.2is a suitable concentration.

Add the slurry to the concrete plant with the dosing water.

Curing Concrete made with microsilica concrete must be cured in accordance with good concrete practice.

Shelf Life >24 months when kept in its original unopened bags in a dry place and must be protected from direct sunlight and frost. Technical Datasheet www.facestone-eg.com Health and Safety This product is for industrial use only by trained operatives. It is potentially hazardous if not used correctly. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. The MSDS can be obtained via our website www.facestone-eg.com .

Authorized Technical Specialist

Please note that only Fcs-facestone Authorized Technical Specialists ('ATSs') are permitted to change any of the information in this data sheet or to provide written recommendations concerning the use of this product. Visit www.facestone-eg.com for a full list of Fcs-facestone ATSs.

Datasheet Validity

Fcs-facestone makes modifications to its product datasheets on a continuous basis.

Please check the datasheet update section on www.facestone-eg.com to ensure you have the latest version.

Warranties

Fcs-facestone supplies products that comply with the properties shown on the current datasheets. In the unlikely event that products supplied are proved not to comply with these properties, then we will replace the non-compliant product or refund the purchase price. Fcs-facestone does not warrant or guarantee the installation of the products as it does not have control over the installation or end use of the products. Any suspected defects must be reported to Fcs-facestonein writing within three working days of being detected. Fcs-facestone Full concrete solutiones. makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties express or implied. Fcs-facestone Full concrete solutiones. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay. Quality Statement All Products manufactured by FCS-FACESTONE or imported from FCS-FACESTONE companies world-wide are manufactured to procedures certified to

UNCONTROLLED COPY FOR INFORMATION PURPOSES ONLY.
All information shown is typical – NOT TO THE USED FOR SPECIFICATIONS.
Read appropriate Material Safety Data Sheet before using.
Contact facestone for product specification approval.

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Test	ltesult	Standard	Compliey
Acctivecty Index After (28 day)	6'0/470(Kg/cm ^{2})	1.05.°0	Compliey
Setting Time	160/150 Min	100 %	Compliey
Rapid CL Ion RCPT	550 Kluln	Less than 1000 Kluin	Compliey
Hardness	18 HV	Not Less Than 15 HV	Compliey
Carbon-alkali reaction by prism iiietliod C1105	0.011 %	Not More Thali 0.015%	Compliey
Cai'bon-alkali reaction by prism method C1260	0.1o %	Not More Than 0.2%	Compliey
Envii on mental analysis (Goltl Lectl Certet'ecate)			
From the results of the American specification ASTM C1240 on the sample and its effect on the cement content - water saving - alkaline carbon and silicate reaction coefficient - RCPT test in compliance Gold Leed Ccrtefecate.			

® Lhis i csult concerns the presented sample and only represents the representative quantity of the s:irnplc, tin" '‹ ' •rresentation of any other quantities is the responsibility of the sample drawing authoi ity.

*' Ti'ne iest of tlic s‹imples ‹me ltept after being tested with thc authoi ity's laboratories for a maximum j›c' ' ^ €if one month from the date of the test.

I tie › alitlity ot' the test report for :i pei iod of three months for the food samples and for a period of six ii‹›iitlis tJn the i est of the siimplcs from the d‹ite of issuance of thc report.

Lab Manager

Shift Manager

Gen il Manager

Test Renoi t
Samlile Data

SaïTlple Code — No. Of Page : (1/2)
Laboratory Code : 011/1/2025 — Sub. Lab. Code
Sample Type Silica Fume — Sample Decription : Grey Off white powder
Sñl aple Arriva; Date : 22/12/2024 — Report Issue Date : 21/01/2025
Customer Requirements
Requii ed Test — Chemical analysis XRD , XRF
Physical analysis
Mechanical analysis
Environmental analysis (Gold Leed Certefecate)
According to American specifications ASTM C1240

Customer Information

Oslo ioer Name : FACESTONE Full concrete Solutions CO.
Adtlress Egypt, Cairo, New Nozha, Str. Aladeeb M. Alsebaey 01200244489

Test	Result	Standard	Compliey
Cl ieiiiical analysis		XRD , XRF	
sio›	92.4 %	Up to 85	Compliey
A zO3	0.15 %		
Fe2O	0.09 %		
CaO	0.25 %		
Moisture	2.1 %	No More 3%	Compliey
L.O.1 at 1OOOC	3.6 %	No More 6	Compliey
	Physical ana lysis		
Size	Less 1 qiii	Less 1 *qm*	Compliey
bulk density	0.47 g/cm“	0.4 : 0.7 g/cm’	Compliey
Specilic Gravity	2.25 g/cm“		
Spccillc Surface Area	17000 in /1‹g	15000: 30000 ni /kg	Compliey
Shape of Pai‘tic1es	Spher	Spher	Compliey
Mech anical analysis (		45 Kg) S/450 C	
Acctivecty Index Aiter (2 day)	360/350(Kg/cm')	105 %	Compliey

Ministry of Scientific Research
Central Metallurgical R & D Institute
Technical Services Department

CMRDI

وزارة البحث العلمي
مركز بحوث وتطوير الفلزات
إدارة الخدمات الفنية

الاختبارات الكيميائية (B)

تقرير اختبار التحليل الكيميائى للعناصر والاكاسيد بالـ (XRF)

رقم التقرير	٢٢/٩٣	تاريخ الاصدار	٢٠٢٢/١٠/١٢
اسـم العميل	اسامة محمد جمال الدين		
عـدد العينـات	عدد (١) عينة	شكل العينات	بودرة
بيانات العينات	بودرة	الرقم الكودي للعينات	٢٢/٤١٣٦
تاريـخ استلام العينات	٢٠٢٢/١٠/٤	تاريـخ إجراء الاختبار	٢٠٢٢/١٠/١١
الظـروف البيئية	درجة الحرارة :- ٢٥ °	الرطوبه	٣٥ %
الطريقـة المستخدمه	Manual device		
اسم الجهاز المستخدم	PANalytical Axios Advanced XRF		
رقم الملف	١١٨٩	عدد صفحات التقرير	عدد (١) صفحه

نتائج الاختبـــــــار

Compound Formula	Concentration (wt %)
Na_2O	0.538
MgO	0.414
Al_2O_3	0.447
SiO_2	92.800
P_2O_5	0.041
SO_3	0.218
K_2O	0.441
CaO	0.318
MnO	0.106
$Fe_2O_3^{tot}$	2.382
CuO	0.021
ZnO	0.009
Rb_2O	0.002
SrO	0.007
PbO	0.006
Cl	0.049
L.O.I	2.20

- نتائج الاختبارات تمثل العينه المقدمه للمركز فقط ولاتمثل الإنتاج او اى كميات اخرى طرف جهة تقديم العينه
- التقارير التى يصدرها المركز سريه وتخص الجهه الطالبه وحدها ولايجوز إعطاء صوره منها لاى جهه أخرى.
- تنقضي مسئولية المركز عن تسليم باقى العينات للعميل خلال ٣٠ يوما من صدور التقرير او استنفاذ المدة فى الإختبارات

القـائم بالعمل
ك/ محمود بخيت

المسئول الفني
ك/ حسام عثمان

مدير إدارة الخدمات الفنيه
د/ ناصر حامد

رقم الصفحه	١
عدد الصفحات	١

العنوان: حلوان- التبين – ش الفلزات أمام نادي الحديد والصلب ص ب: 87 حلوان ت: 27142452 (2+) محمول 01159091552 ف: 27142451 (2+)
P.box: 87 Helwan Tel.: +202 27142452 Mobile:- 01159091552 Fax: +202 27142451 TSDCMRDI@yahoo.com web site: http://www.cmrdi.sci.eg

THE MINISTRY OF PETROLEUM
THE EGYPTIAN MINERAL RESOURCES AUTHORITY (EMRA)
Central Laboratories Sector (XRF LAB)
1 Ahmed El-Zaiat St. Dokki-Giza-Egypt
Head Office Of Central Laboratories Sector
Tel:- 33370551-Fax:- 33371168

Delivered from :- FACESTONE
Samples No. :- 1
Delivery Date :- 10\10\2022
Letter No. :- 738
Unit :- %

(XRF LAB)

C.N.	4225
D.N	1
SiO2	93.49
TiO2	0.07
Al2O3	0.2
Fe2O3	2.34
MnO	0.01
MgO	0.01
CaO	0.30
Na2O	0.18
K2O	0.69
P2O5	0.03
LOI	2.5

Analyzed by:-
Chem./Bahaa Nabih
B.Nab

Director of X-Ray & Thermal Labs
Chem./Bahaa Nabih
B.Nab

Gen. Dir. Of Mineralogy & Geochemistry
Geo./Adel Bayoumi
Adel
23-2-2022

Ministry of Higher Education
& Scientific Research
National Institute of Standards

وزارة التعليم العالى والبحث العلمى
المعهد القومى للمعايرة

El- Sadat (Tersa) St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel./ Fax: +202 - 33867462 - NIS Tel +202 - 37401113

TEST REPORT
تقرير إختبار

Report No:	2340/45T002/15/120/2022

- **NIS Lab** *اسم المعمل* : **Inorganic Analysis and ElectroChemistry Lab.**
- **Issued For** *صادرالى* : Face Stone Company
- **Contact Information of the Customer** *بيانات التواصل بالزبون* : 3 ش الاديب محمد السباعي - جوزيف تيتو - النزهه الجديدة
- **Sample Specification** *وصف العينة* : Silica Blend Powder تحليل كيميائى لعدد واحد عينة
  - **Manufacturer** *اسم الشركة المنتجة* : Face Stone Company
  - **Code** *كود* : The sample was identified by the customer as silica blend powder
- **Date of Receipt** *تاريخ الاستلام* : 15/9/2022
- **Date of Test** *تاريخ الإختبار* : 19/9/2022
- **Issue Date** *تاريخ الإصدار* : 27/9/2022

Approved by

Head of Laboratory

27/9/2022

Prof. Dr. Ahmed I. Abou-Kandil

NIS President

Prof. Dr. Noha E. Khaled

Ministry of Higher Education
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TEST REPORT
تقرير إختبار

▪ Report No.	2340/45T002/15/120/2022
• Conformity Statement	
Conformity Criterion	applicable
Decision	------

• Test Results

Silica Blend Powder:

1. XRF Analysis

Analyte	*Result (%)*
Na_2O	0.298
MgO	0.349
Al_2O_3	2.039
SiO_2	88.097
SO_3	0.311
K_2O	1.016
CaO	0.182
TiO_2	1.129
Cr_2O_3	0.357
Fe_2O_3	4.157
ZrO_2	0.414
PbO	0.259
Br	0.069
Tb_4O_7	0.323

2. Loss On Ignition (L.O.I)

L.O.I	4.46%

The data in the above table applies only to those samples specifically listed on this test report

Tested by
Ass. Res. Moustafa Elmasri

Reviewed by
Prof. Dr. Ahmed I. Abou-Kandil

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TEST REPORT
تقرير إختبار

▪ Report No.	2340/45T002/15/120/2022		
▪ Customer	Face Stone Company		
▪ Date of Receipt			15/9/2022
▪ Tested by	Ass. Res. Moustafa Elmasri	▪ Date of Test	19/9/2022
▪ Number of pages	3	▪ Issue Date	27/9/2022
Sample Under Test			
Sample Specification	Silica Blend Powder تحليل كيميائى لعدد واحد عينة		
Manufacturer	-----	other	-----
• Enviromental Conditions			
Temperature (°C)	25±5	Humidity (%)	45±5
Other	-----	-----	-----

• Test Method

The test method used is based on an in house method NIS-OP-7.6.3 (Analysis of different alloys using X-ray Flouresence Spectrometer)

• Traceability

Reference Device	Serial Number	Due date	Certificate No.	Relative expanded uncertainty	Traceability
Cement certified reference materials	NIST SRMs 1885a & 1881a	1/1/2023	NIST CRM 1885a & 1881a	± 2% Max.	NIST CRMs

• ISO 17025 Statement

All NIS laboratories implement the NIS unified quality management system which was built to be in compliance with ISO 17025:2017.

Tested by
Moustafa Elmasri
Ass. Res. Moustafa Elmasri

Reviewed by
Prof. Dr. Ahmed I. Abou-Kandil

Egyptian Organization for
Standardization &Quality (EOS)

الهيئة المصرية العامة
للمواصفات والجودة
الإدارة المركزية لمعامل اختبارات المواد
العضوية وغير العضوية والمواد الخطرة

الادارة العامة	المعامل الغير العضوية	المعمل المختص	معمل مواد البناء

تقرير اختبار

بيانات العينة والعميل			
مسمى العينة	سيليكا	رقم العينة/ كود المعمل	٢٠٢٤/١٢٧٥٨/٠١١
وصف العينة	مسحوق رمادي داخل كيس بلاستيك	كود العينة	-----
اسم العميل	شركة صناع الحجر العالميون (فيستون)	رقم التواصل للعميل	------
مطالب العميل	----------		
نتائج التحليل			
تاريخ استلام العينة	٢٠٢٤/١٢/٣٠	تاريخ إصدار التقرير	٢٠٢٥/١/١

SN المسلسل	الاختبار	Test Result نتيجة الاختبار	Unit وحدة القياس	Specs/ref limit حدود المطابقة /المرجع	Conformity (y/n) مطابق (نعم/لا)	Equipment/technique الجهاز المختص/ التقنية
١	الكثافة	٠,٤١	جم/سم٣	-----	------	------

الاستنتاج:

الملاحظات:

- هذه النتيجة تخص العينة المقدمة ولا تمثل إلا الكمية الممثلة منها العينة ، وتمثيلها لأي كميات آخرى هي مسئولية جهة سحب العينة.
- كل البيانات الموجودة بهذا التقرير تعامل بسرية تامة باستثناء ما يقتضيه القانون.
- لا يجوز نسخ او اعادة اصدار التقرير بدون الحصول على اذن مسبق من الهيئة المصرية العامة للمواصفات والجودة.
- االمعمل غير مسئول عن المعلومات المقدمة من العميل والتى قد تؤثر على صحة النتائج.
- تحتفظ ببقايا العينات بعد اختبارها بمعامل الهيئة لمدة شهر من تاريخ اصدار التقرير
- سريان العمل بتقرير الاختبار لمدة شهر للعينات الغذائية وثلاثة شهور لباقى العينات من تاريخ اصدار التقرير.

	مدير الادارة	المدير العام
الاسم	ك/ اسلام فارس هاشم	ك/ دعاء عبدالحليم
التوقيع		
التاريخ	٢٠٢٥/١/١	٢٠٢٥/١/١

16 Tadreeb El-Modarrebeen St., Ameriya. CAIRO - EGYPT
Departments Service :22845522 / 22845524
Fax:22845501 / 22845504
E-mail :eos@idsc.net.eg

١٦ شارع تدريب المدربين - الأميرية - القاهرة
خدمة الإدارات: ٢٢٨٤٥٥٢٢ / ٢٢٨٤٥٥٢٤
الفاكس : ٢٢٨٤٥٥٠١ / ٢٢٨٤٥٥٠٤

ARDAMAN Split

MATERIALS AND CONSTTRUCTION TESTING
S.A.E

3 ABD EL KAWY AHMED St. Flat # 06 MOHANDSEEN - GIZA
Tel.: 02- 3448413 - Mobile : 01006030248

Project: General **File No : 4881/S**

Client: Facestone full concrete solutions **Date: 13/06/2022**

RESULTS OF TESTS PERFORMED ON SILICA FUME SAMPLE ACCORDING TO ASTM C1240

Delivered by: Facestone full concrete solutions

Letter Ref. No.: ARD-00321-05-2022

Samples Delivery Date: 03/06/2022

Sample Description: Micro Silica

Tests	Results (%)	Requirments of ASTM C1240
Accelerated pozzolonic activity index	109.2	105%(min.)
Moisture content	2.5	3% (max.)

Result :
The sample is Complying with ASTM C1240.

Prepared by: Eng. Mina Wadee **General Manager: Eng. Reda El-Raheb**

شركة اردمان
ARDAMAN - A.C.
(الإدارة)

قطـــــاع المعامل
معامـــل ٩٠

٢٠٢٢/٨/٢٩

السيدة المحاسب / رئيس قطاع التسويـــــق

تحية طيبة وبعد ،،،

ايماء تحليل عينة سيليكا فوم واردة من شركة فيستون ،،، يرجى الاحاطة بانه تم استلام العينة يوم ٢٠٢٢/٨/٢٧ وتـــم الانتهاء من الاجراء الاختبارات المشار اليها يوم ٢٠٢٢/٨/٢٩ على جهـــاز Microwave plasma emission spectroscopy بتكلفة ١١٤٠ جنيه ومرفق جدول بنتائج الاختبارات ،،،،

مع وافر التحيـــــة

فيزيائية

هناء عبد الجليل ناجي
رئيس قطاع المعامل

شركة ابو زعبل للكيماويات المتخصصة

قطـــــاع المعامل ٢٠٢٢/8/٢٩

نتائج اختبـــار عينة سيليكا فوم واردة من شركة فيستون
بتاريـــخ ٢٠٢٢/8/٢٧

اسم الاختبار	النتيجـــــة %	ملاحظات
SiO_2	90.08	تم اجراء الاختبارات على جهـــاز Microwave plasma emission spectroscopy طبقا لـ ASTM C1301
Fe_2O_3	0.8	
Al_2O_3	3.6	
CaO	0.76	
Mgo	0.3	
Na_2O	0.2	
K_2O	0.14	
P_2O_5	0.05	
ZnO	0.16	
Cr_2O_3	0.01	
l O i	3.05	
moist %	0.45	
Cl^-	0.03	تم اجراء الاختبار طبقا لـ ASTM C1152

فيزيائية

هناء عبد الجليل ناجي
رئيس قطاع المعامل

المركز القومى لبحوث الإسكان والبناء
مكتب نائب رئيس مجلس الإدارة
لشئون البحوث والدراسات

Housing & Building National Research Center
Vice Chairman Office
for Research and Studies Affairs

كود النموذج : RAW-FRM-21-02

خطاب إرسال نتائج إختبارات إلى العميل

مرجعنا: ٢٠٢٢/٣/١٤٨٥م
عدد الصفحات : (....)

تليفون: ٠١٢٠٠٢٤٤٤٨٩ الأميل: - اسم المشروع : تطوير ميناء العين السخنة –
الإستشاري: ACC الموقع : -- كود العينة : Rsl 3582..3583 تاريخ الطلب:
٢٠٢٢/٩/٤ ميعاد الاستلام: ٢٠٢٢/٩/١٤

السادة/ شركة فيس ستون
تحيه طيبه وبعد:

بالإشارة إلى طلب سيادتكم بخصوص قيام المركز باجراء أختبارات XRF , XRD على عدد (٢) عينة سيلكا XF1, XF2 الموردة بمعرفتكم.

يشرفنا أن نرسل طيه نتائج الاختبارات التى أعدت فى هذا الشأن من المعهد المختص. وقد تم سداد التكلفة المطلوبة للمركز بمبلغ (٣١٩٠ج) فقط (ثلاثة الاف ومائة وتسعون جنيها) قسيمة رقم ٤٠٨١٢٦ بتاريخ ٢٠٢٢/٩/٤ .

وتفضلوا سيادتكم بقبول فائق الاحترام .

تحريرا فى : ٢٠٢٢/٩/١٤م.

مدير المعهد
أ.د. طارق مصطفى السكرى

نائب رئيس مجلس الادارة
لشئون البحوث والدراسات

(Cover Page)

٨٧ شارع التحرير – الدقى – الجيزة ص.ب : ١٧٧٠ القاهرة.
87 El-Tahrir St., Dokki, Giza 11511. P.O.Box : 1770 Cairo, Egypt.
Phone: (+202) 37617102 -37617092 Fax: 33351564 – 37628736 Email:hbrc@hbrc.edu.eg www.hbrc.edu.eg

المركز القومى لبحوث الإسكان والبناء
Housing and Building National Research Center

معهد بحوث الخامات وتكنولوجيا صناعة مواد البناء
Raw Building Materials Technology and Processing Research Institute

نتائج التحليل الكيميائى

كود النموذج HBRC-RAW-F-7.8-01

رقم التقرير (833 / Lab:2 /2022)

العميـــــل:	شركة فيس ستون	
الموقع اسم المشروع :	المشروع : تطوير ميناء العين السخنة إستشاري ضبط الجودة : ACC - الاستشاري العام : دار الهندسة (د / أشرف وجيه)	
نـــــوع العينـــــة:	عينات سيليكا فيوم - إنتاج شركة قيس ستون	كود العينة : Sl 3348 -3349
تاريـــخ إستلام العينة:	٢٠٢٢/٨/١٥	تاريخ الإختبار : ٢٠٢٢/٨/ ١٨
نـــــوع الاختبـــار:	تحديد نسبة الرطوبة (Moisture content)	

النتائج

الإختبار	عينة (A)	عينة (B)
نسبة الرطوبة % (Moisture content at 105 C°)	٠,٨٦٣	٠,٥٣٨

ملاحظات :
- النتائج الموضحة عالية تسرى فقط على العينات المقدمة من الجهة طالبة الاختبار .
- تم تسليم العينة الى المعمل بمعرفة الجهة طالبة الإختبار.
- البيانات المذكورة عاليه طبقا لما تم ذكره بخطاب الجهة طالبة الاختبار دون ادنى مسئولية على المركز .
- النتائج الموضحة عاليه تسرى فقط على العينة المقدمة للمركز من الجهة طالبة الإختبار .
- يجب الرجوع الى الكود المصرى فى حالة وجود الية لتحديد دورية اجراء الاختبار.
- مدة سريان هذا التقرير ٣ شهور ولا يسمح بنسخ هذا التقرير الا بموافقة كتابية من المركز .
- يلتزم المعمل بنود المواصفة الدولية ISO 17025 لسنة ٢٠١٧ من حيث سرية البيانات والشفافية وكذا الحيادية مع العملاء .

القائم بالاختبار

إشراف ومراجعة
ك/ فاطمة شكرى

مدير المعمل
أ.د/ عزت الشيمى

٨٧ شارع التحرير الدقى - جيزة
ص.ب: ١٧٧٠ القاهرة
87 El-Tahrir St., Dokki, Giza 11511
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E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

معمل كيمياء وتكنولوجيا النانو

No.	Diameter(µm)	q(%)	UnderSize(%)	No.	Diameter(µm)	q(%)	UnderSize(%)	No.	Diameter(µm)	q(%)	UnderSize(%)
17	0.100	0.000	0.000	37	1.510	1.169	7.411	57	22.797	1.553	79.791
18	0.115	0.120	0.120	38	1.729	1.494	8.905	58	26.111	1.257	81.047
19	0.131	0.209	0.329	39	1.981	1.845	10.751	59	29.907	1.084	82.132
20	0.150	0.300	0.629	40	2.269	2.211	12.962	60	34.255	1.004	83.136
21	0.172	0.358	0.987	41	2.599	2.586	15.547	61	39.234	1.000	84.136
22	0.197	0.369	1.357	42	2.976	2.972	18.519	62	44.938	1.073	85.208
23	0.226	0.355	1.712	43	3.409	3.376	21.895	63	51.471	1.174	86.383
24	0.259	0.334	2.046	44	3.905	3.803	25.697	64	58.953	1.291	87.673
25	0.296	0.295	2.341	45	4.472	4.248	29.946	65	67.523	1.402	89.076
26	0.339	0.251	2.592	46	5.122	4.693	34.639	66	77.339	1.472	90.547
27	0.389	0.216	2.808	47	5.867	5.097	39.736	67	88.593	1.500	92.047
28	0.445	0.193	3.002	48	6.720	5.401	45.136	68	101.460	1.456	93.503
29	0.510	0.186	3.187	49	7.697	5.540	50.676	69	116.210	1.317	94.820
30	0.584	0.194	3.381	50	8.816	5.465	56.142	70	133.103	1.213	96.032
31	0.669	0.220	3.601	51	10.097	5.193	61.335	71	152.453	1.117	97.150
32	0.766	0.271	3.872	52	11.565	4.767	66.102	72	174.616	0.993	98.143
33	0.877	0.354	4.225	53	13.246	4.129	70.231	73	200.000	0.830	98.973
34	1.005	0.478	4.704	54	15.172	3.371	73.602	74	229.075	0.628	99.601
35	1.151	0.654	5.357	55	17.377	2.628	76.230	75	262.376	0.399	100.000
36	1.318	0.885	6.242	56	19.904	2.007	78.237				

الشركة فيس ستون –Sl 3348 (A)

The sample was analyzed by HORIBA, Laser scattering particle size distribution analyzer partica (La-950) Horiba LA950 for windows (wet) ver4.11.

Remarks

The attached results apply only to the sample submitted to the center, bearing in mind that the results are not valid and are not valid for the approval of any quantitative production / and practices / supplies /as well as export and is not considered as a conformity certificate

ملحوظة : النتائج الموضحة بعاليه تسرى فقط على العينة الموردة من الجهة طالبة الاختبار.

القائم بالاختبار:	الاشراف والمراجعة	مدير المعمل
د /أحمد أبوبكر	أ.م.د / محمد عزت	أ.د/ باسل الصباغ

87 El-Tahrir St., Dokki, Giza 11511 P.O.Box: 1770 Cairo, EGYPT
87 شارع التحرير الدقى – جيزة ص.ب: 1770 القاهرة
Phone: (+202) 7617102, 7617092 Fax: 3351564, 7628736 E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

معهد بحوث الخامات وتكنولوجيا صناعة مواد البناء
Raw Building Materials Technology and Processing Research Institute
المركز القومى لبحوث الإسكان والبناء
Housing and Building National Research Center

معمل كيمياء وتكنولوجيا النانو

كود العينة: Sl 3348 (A)

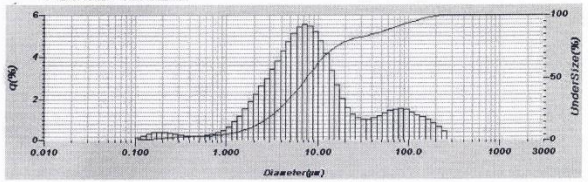
تاريخ التوريد :2022/8/21

الجهة الموردة/العميل: الشركة فيس ستون

الموقع/اسم المشروع: تطوير ميناء العين السخنه / إستشارى ضبط الجوده :ACC

بيانات أخرى: الإستشارى العام : شركة دار الهندسة

Sample Name	: sl 3348 A
ID#	: 2006010101311011
Data Name	: 2006010101311011
Transmittance(R)	: 91.0(%)
Transmittance(B)	: 83.2(%)
Circulation Speed	: 4
Agitation Speed	: 3
Ultra Sonic	: 00:25.(7)
Distribution Base	: Volume
Refractive Index (R)	: silica [silica (1.460 - 1.480i),water(1.330)]
Refractive Index (B)	: silica [silica (1.460 - 1.480i),water(1.330)]
Material	:
Sample Data Acquisition Times (LD)	: 5000
Sample Data Acquisition Times (LED)	: 5000
Median Size	: 7.67021(µm)
Mean Size	: 23.16219(µm)
Mode Size	: 7.1974(µm)
Diameter on Cumulative %	: (2)10.00 (%) 1.8744(µm)
	: (9)90.00 (%) 73.5367(µm)



The sample was analyzed by HORIBA, Laser scattering particle size distribution analyzer partica (La-950)*

Horiba LA950 for windows (wet) ver4.11.

ملحوظة : النتائج الموضحة بعاليه تسرى فقط على العينة الموردة من الجهة طالبة الاختبار.

القائم بالاختبار:	الاشراف والمراجعة	مدير المعمل
د /أحمد أبوبكر	أ.م.د / محمد عزت	أ.د/ باسل الصباغ

87 El-Tahrir St., Dokki, Giza 11511 P.O.Box: 1770 Cairo, EGYPT
87 شارع التحرير الدقى – جيزة ص.ب: 1770 القاهرة
Phone: (+202) 7617102, 7617092 Fax: 3351564, 7628736 E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

معمل كيمياء وتكنولوجيا النانو

No.	Diameter(µm)	q(%)	UnderSize(%)	No.	Diameter(µm)	q(%)	UnderSize(%)	No.	Diameter(µm)	q(%)	UnderSize(%)
17	0.100	0.000	0.000	37	1.510	1.395	8.901	57	22.797	2.115	91.447
18	0.115	0.135	0.135	38	1.729	1.741	10.642	58	26.111	1.653	93.100
19	0.131	0.236	0.371	39	1.981	2.099	12.740	59	29.907	1.326	94.426
20	0.150	0.339	0.710	40	2.269	2.457	15.197	60	34.255	1.090	95.516
21	0.172	0.405	1.115	41	2.599	2.814	18.010	61	39.234	0.915	96.430
22	0.197	0.420	1.535	42	2.976	3.178	21.188	62	44.938	0.783	97.213
23	0.226	0.407	1.942	43	3.409	3.563	24.751	63	51.471	0.665	97.878
24	0.259	0.386	2.328	44	3.905	3.981	28.733	64	58.953	0.557	98.435
25	0.296	0.344	2.672	45	4.472	4.438	33.170	65	67.523	0.458	98.893
26	0.339	0.297	2.969	46	5.122	4.921	38.092	66	77.339	0.362	99.255
27	0.389	0.259	3.229	47	5.867	5.402	43.493	67	88.583	0.276	99.531
28	0.445	0.236	3.464	48	6.720	5.822	49.316	68	101.460	0.204	99.735
29	0.510	0.230	3.694	49	7.697	6.111	55.427	69	116.210	0.149	99.884
30	0.584	0.243	3.937	50	8.816	6.197	61.623	70	133.103	0.116	100.000
31	0.669	0.279	4.216	51	10.097	6.069	67.693				
32	0.766	0.345	4.561	52	11.565	5.772	73.464				
33	0.877	0.449	5.010	53	13.246	5.192	78.656				
34	1.005	0.603	5.613	54	15.172	4.398	83.054				
35	1.151	0.813	6.426	55	17.377	3.533	86.587				
36	1.318	1.080	7.506	56	19.904	2.745	89.332				

الشركة فيس ستون –Sl 3349 (B)

The sample was analyzed by HORIBA, Laser scattering particle size distribution analyzer partica (La-950) Horiba LA950 for windows (wet) ver4.11.

Remarks

The attached results apply only to the sample submitted to the center, bearing in mind that the results are not valid and are not valid for the approval of any quantitative production / and practices / supplies /as well as export and is not considered as a conformity certificate

ملحوظة : النتائج الموضحة بعاليه تسرى فقط على العينة الموردة من الجهة طالبة الاختبار.

القائم بالاختبار:	الاشراف والمراجعة	مدير المعمل
د /أحمد أبوبكر	أ.م.د / محمد عزت	أ.د/ باسل الصباغ

87 El-Tahrir St., Dokki, Giza 11511 P.O.Box: 1770 Cairo, EGYPT 87 شارع التحرير الدقى – جيزة ص.ب: 1770 القاهرة
Phone: (+202) 7617102, 7617092 Fax: 3351564, 7628736 E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

معهد بحوث الخامات وتكنولوجيا صناعة مواد البناء
Raw Building Materials Technology and Processing Research Institute
المركز القومى لبحوث الإسكان والبناء
Housing and Building National Research Center

معمل كيمياء وتكنولوجيا النانو

كود العينة: Sl 3349 (B)

تاريخ التوريد :2022/8/10

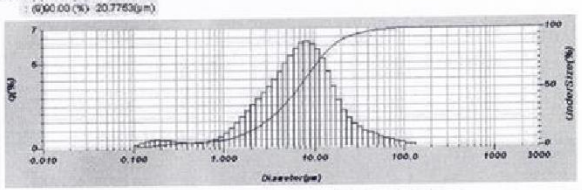
الجهة الموردة/العميل: الشركة فيس ستون

الموقع/اسم المشروع: تطوير ميناء العين السخنه / إستشارى ضبط الجوده :ACC

بيانات أخرى: الإستشارى العام : شركة دار الهندسة

Sample Name : sl 3349 B
ID# : 2006010101447013
Data Name : 2006010101447013
Transmittance(R) : 91.9(%)
Transmittance(B) : 84.5(%)
Circulation Speed : 4
Agitation Speed : 3
Ultra Sonic : OFF
Distribution Base : Volume
Refractive Index (R) : silica[silica (1.450 - 1.480)i,vaire(1.330)]
Refractive Index (B) : silica[silica (1.450 - 1.480)i,vaire(1.330)]
Material :
Sample Data Acquisition Times (LD) : 5000
Sample Data Acquisition Times (LED) : 5000

Median Size : 6.82270(µm)
Mean Size : 10.32140(µm)
Mode Size : 8.2334(µm)
Diameter on Cumulative % : (2)10.00 (%) 1.5450(µm)
(6)90.00 (%) 20.7763(µm)



The sample was analyzed by HORIBA, Laser scattering particle size distribution analyzer partica (La-950)*

Horiba LA950 for windows (wet) ver4.11.

ملحوظة : النتائج الموضحة بعاليه تسرى فقط على العينة الموردة من الجهة طالبة الاختبار.

القائم بالاختبار:	الاشراف والمراجعة	مدير المعمل
د /أحمد أبوبكر	أ.م.د / محمد عزت	أ.د/ باسل الصباغ

87 El-Tahrir St., Dokki, Giza 11511 P.O.Box: 1770 Cairo, EGYPT 87 شارع التحرير الدقى – جيزة ص.ب: 1770 القاهرة
Phone: (+202) 7617102, 7617092 Fax: 3351564, 7628736 E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

Housing & Building National Research Center
Building Materials Research & Quality Control Institute

ACTIVITY INDEX TEST RESULTS REPORT

Client : استشارات للانشاءات المتقدمة	**Delivery date:** 16/08/2022
Project : تطوير ميناء العين السخنة	**Delivery No:** 6598
Type of Specimen: Silica fume - انتاج شركة فيس ستون	**Sample Preparation Date:** 16/08/2022
Sample Code : MTL\CE\S \22\8\2022, MTL\CE\S \23\8\2022	
Additional data : ACC + الاستشاري: دار الهندسة	

Mechanical Properties:

Testing Age	Results of The Compressive Strength of Standard Mortar (MPa)		Activity Index	EN Standards Limits 15167-1	Testing date
	Control	Silica fume انتاج شركة فيس ستون			
28 Days	46.1	48.0	104%	Not less than 100%	13/09/2022
	47.0	47.8			
	45.8	46.9			
	45.5	49.4			
	46.5	48.3			
	46.0	46.6			

NOTES:

- The used Cement is of class CEM I 42.5 N (Beni-Suef Cement Company)
- Compressive strength test was carried out as per EN 196-1/2016
- The sample was delivered to the laboratory by the client
- The above information is according to client's request without any responsibilty on the center.
- The above results are valid only for the tested sample for the abovementioned cement type and are not considered as a conformity certificate.
- It is not allowed to reproduce this report except with written consent of the center.

Prepared by	Supervisor	Head of Technical Group
Eng Nermeen Ashraf 14/9/2022	Eng / Eman Saby 14/9/2022	Prof. T. Bahsa 15/9/2022

87 El-Tahrir St.,Dokki, Giza P.O.1770
Tel. 33356722-33356853 Fax:33351564
E-mail: hbrc@hbrc.edu.eg

٨٧ شارع التحرير - الدقي-الجيزة
تليفون: ٣٣٣٥٦٧٢٢ -٣٣٣٥٦٨٥٣
فاكس: ٣٣٣٥١٥٦٤

المركز القومي لبحوث الإسكان والبناء
نائب رئيس مجلس الادارة لشئون البحوث والدراسات
معهد بحوث مواد البناء وضبط الجودة

الموضوع : Activity Index Test Results Report (28 day)

عدد المرفقات : (١)

الجهة الطالبة / استشارات للإنشاءات المتقدمه

تحية طيبة وبعد ،،،،

إيماء إلى خطاب سيادتكم بتاريخ ١٦/ ٨/ ٢٠٢٢ بخصوص الموضوع عاليه نرفق تقريراً بالنتائج – هذا وقد سددت للمركز الرسوم المقررة وقدرها ٢٠٠٠ جنيها (الفان جنيها لا غير) خصماً من القسيمة رقم ٠٤٠٧٩٣٠ بتاريخ ٢٠٢٢/٨/١٦ .

وتفضلوا بقبول وافر الاحترام ،،،،

مـــدير المعهـــد

أ.د.م./ أحمد عبد الحليم الجابرى

نائـــب رئـــيس مجلـــس الإدارة

لشئون البحوث والدراسات

تحريراً فى : ٢٠٢٢/٩/١٨

٨٧ شارع التحرير-الدقي ص.ب.: ١٧٧٠
تليفون: ٣٣٥٦٧٢٢(٠٢)- ٣٣٥٦٨٥٣(٠٢) فاكس: ٣٣٥١٥٦٤

87 El-Tahreer St. Dokki Giza P.O. Box 1770
Tel.:(02)3356722-3356853 Fax:3351564
www.hbrc.edu.eg

المركز القومى لبحوث الإسكان والبناء
معهد: بحوث الخامات وتكنولوجيا صناعة مواد البناء
معمل: الأشعه السينيه الطيفيه XRF
نوع الوثيقة: إجراء إصدار التقارير والشهادات
كود الإجراء:(HBRC-RAW-P-7.8)

كود النموذج01-HBRC-RAW-F-7.8

تقرير إختبار

العميـــــل: شركة فيس ستون	المشـــروع: تطوير ميناء العين السـخنة – اسـتشـارى: ضـبط الجودة: ACC – الإستشارى العام: شركة دار الهندسة – د/ أشرف وجيه – استشارات الإنشاءات المتقدمة
وصف العينة: بودر — نوع العينة: *سيليكا فيوم انتاج شركة فيس ستون* **(B)**	كود العينـة: Sl-3349
تاريخ إستلام العينـــة: ٢٠٢٢/٨/١٥	تاريخ الإختبار: ٢٠٢٢/٨/٢٣
طريقة الإختبار المستخدمة: التحليل الكيميائى باستخدام جهاز الاشعه السينيه الطيفيه (XRF)	
الظروف البيئية لإجراء التجربة: درجة الحرارة: ٢٢م° ± ١ م°	الرطوبة النسبية: ٤٤% ± ١%

نتائج الإختبار

Sample name	Oxide Content * (%)																
	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	SO3	TiO2	P2O5	ZrO2	MnO	Cr2O3	SrO	Cl-	LOI**	Total
Sl-3349	85.90	3.64	0.50	0.68	0.32	0.26	0.45	1.18	1.86	0.05	0.07	0.04	0.02	0.01	0.05	4.97	99.99

* According to ASTM C114-00
** According to ASTM C114-18

* يتم تسليم العينةالي المعمل بمعرفة الجهه طالبة الاختبار
*البيانات المذكورة عاليه طبقا لما تم ذكره بخطاب الجهه طالبة الاختبار دون ادنى مسئولية على المركز
*النتائج المرفقة تسرى فقط على العينة المقدمة للمركز مع الأخذ فى الإعتبار أن النتائج لا تسرى ولايعتد بها لإعتماد أى انتاج كمى وكذا التصدير ولايعتد بها كشهادة مطابقة.
* مدة سريان هذا التقرير هى ٣ شهور ولايسمح بنسخ هذا التقرير الا بموافقة كتابية من المركز.
*يلتزم المعمل ببنود المواصفة الدولية ISO 17025 لسنة ٢٠١٧ من حيث سرية البيانات والشفافية وكذ الحيادية مع العملاء.
* يجب الرجوع للكود المصري في حالة وجود الية لتحديد دورية اجراء الاختبار

القائم بالاختبار:
م./صلاح قاسم

مدير المعمل
أ.د/ هشام مصطفى محمد خاطر

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Phone: (+202) 37617102, 37617092 Fax: 33351564, 37628736 E_mail: hbrc.@hbrc.edu.eg www.hbrc.edu.eg

المركز القومى لبحوث الإسكان والبناء
معهد: بحوث الخامات وتكنولوجيا صناعة مواد البناء
معمل: الأشعه السينيه الطيفيه XRF
نوع الوثيقة: إجراء إصدار التقارير والشهادات
كود الإجراء:(HBRC-RAW-P-7.8)

كود النموذج01-HBRC-RAW-F-7.8

تقرير إختبار

العميـــــل: شركة فيس ستون	المشـــروع: تطوير ميناء العين السـخنة – اسـتشـارى: ضـبط الجودة: ACC – الإستشارى العام: شركة دار الهندسة – د/ أشرف وجيه – استشارات الإنشاءات المتقدمة
وصف العينة: بودر — نوع العينة: *سيليكا فيوم انتاج شركة فيس ستون* **(A)**	كود العينـة: Sl-3348
تاريخ إستلام العينـــة: ٢٠٢٢/٨/١٥	تاريخ الإختبار: ٢٠٢٢/٨/٢٣
طريقة الإختبار المستخدمة: التحليل الكيميائى باستخدام جهاز الاشعه السينيه الطيفيه (XRF)	
الظروف البيئية لإجراء التجربة: درجة الحرارة: ٢٢م° ± ١ م°	الرطوبة النسبية: ٤٤% ± ١%

نتائج الإختبار

Sample name	Oxide Content * (%)																	
	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	SO3	TiO2	P2O5	ZrO2	MnO	Cr2O3	CuO	SrO	Cl-	LOI**	Total
Sl-3348	88.60	2.92	0.63	0.75	0.32	0.30	0.49	0.08	1.02	0.05	0.08	0.06	0.03	0.03	0.02	0.05	4.58	100.02

* According to ASTM C114-00
** According to ASTM C114-18

* يتم تسليم العينةالي المعمل بمعرفة الجهه طالبة الاختبار
*البيانات المذكورة عاليه طبقا لما تم ذكره بخطاب الجهه طالبة الاختبار دون ادنى مسئولية على المركز
*النتائج المرفقة تسرى فقط على العينة المقدمة للمركز مع الأخذ فى الإعتبار أن النتائج لا تسرى ولايعتد بها لإعتماد أى انتاج كمى وكذا التصدير ولايعتد بها كشهادة مطابقة.
* مدة سريان هذا التقرير هى ٣ شهور ولايسمح بنسخ هذا التقرير الا بموافقة كتابية من المركز.
*يلتزم المعمل ببنود المواصفة الدولية ISO 17025 لسنة ٢٠١٧ من حيث سرية البيانات والشفافية وكذ الحيادية مع العملاء.
* يجب الرجوع للكود المصري في حالة وجود الية لتحديد دورية اجراء الاختبار

القائم بالاختبار:
م./صلاح قاسم

مدير المعمل
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Results of Physical Analysis of Silica fume sample
Silica Fume Used in Cementitious Mixtures
ASTM C 1240

Date	15/7/2022	Sample	Powder
Client	FCS		
Delivery date	7/7/2022		

Accelerated pozzolanic strength activity index with Portland Cement

Mixes	Compressive Strength Mpa Of Mortar Cubes (ASTM C 109)					ASTM C 1240 Limits
	7 days			Average	Activity index %	
Control	34.7	34.5	33.5	34.2	117.92	Min. 105 % of control mix (MPa)
Silica fume 10%	41.4	40	39.7	40.4		

Sieve 45 Microns by ASTM C430.

Retained Percent	Passed Percent
9.5%	90.5%

Loss on Ignition by ASTM C114.

Loss on Ignition	4.0%

Moisture Content by ASTM C1240.

Moisture Content	0.5%

ASTM C 1240 limits:

- The Sample was delivered to the Lab by the Client.
- The Above Data is according to the information received from the Client.
- The Results above apply only to the sample delivered to the lab.

Tested by :	
Checked by:	
Lab manager	

Approved by	Dr Adel Elkordy

Misr Raymond Foundations
S.A.E
20 Haroun St. Dokki, GIZA - ArabRepublic Of Egypt
Phone: (202)7485199 - 7488164 - 7492276 - 3368891
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شركة مصر ريموند للأساسات
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تليفون ٧٤٨٥١٩٩ - ٧٤٨٨١٦٤ - ٧٤٩٢٢٧٦ - ٣٣٦٨٨٩١
فاكس : ٧٤٨٦٢٥٣

CHEMICAL ANALYSIS OF SILICA FUME

ASTM C-311
ASTM C-1240

Date : 27/03/2022
Client : NCC
Location :
Client Reference : Q 2465
Delivery Date : 17/03/2022
Sample Taken by : The Client
Sample : X-Mix MS920D/2

	%	REQUIREMENTS OF - ASTM C 1240
SiO_2	92.07	MIN 85.0 %
L.O.I.	4.35	MAX 6.0 %
Moisture Content	2.07	MAX 3.0 %
Cl^-	0.064	MAX 0.5 %

THE ABOVE CHEMICAL ANALYSIS .....COMPLY..... WITH REQUIREMENTS OF ASTM C 1240

Tested By :

Checked By :

Misr Raymond Foundations
معمل أختبار المواد

Chemist Essam Zain

Misr Raymond Foundations
S.A.E
20 Haroun St. Dokki, GIZA - ArabRepublic Of Egypt
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شركة مصر ريموند للأساسات
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تليفون ٧٤٨٥١٩٩ - ٧٤٨٨١٦٤ - ٧٤٩٢٢٧٦ - ٣٣٦٨٨٩١
فاكس : ٧٤٨٦٢٥٣

CHEMICAL ANALYSIS OF SILICA FUME

ASTM C-311
ASTM C-1240

Date : 27/03/2022
Client : NCC
Location :
Client Reference : Q 2465
Delivery Date : 17/03/2022
Sample Taken by : The Client
Sample : X-Mix MS920D/1

	%	REQUIREMENTS OF - ASTM C 1240
SiO_2	92.42	MIN 85.0 %
L.O.I.	4.45	MAX 6.0 %
Moisture Content	2.42	MAX 3.0 %
Cl^-	0.053	MAX 0.5 %

THE ABOVE CHEMICAL ANALYSIS .....COMPLY..... WITH REQUIREMENTS OF ASTM C 1240

Tested By :

Checked By :

Chemist Essam Zain

Misr Raymond Foundations
معمل أختبار المواد

CEL
Consulting Engineering Bureau & Laboratories
مكتب ومعامل الإستشارات الهندسية

Company Name : Orascom\A.C JV
Project :Bahr El-Baqar Treatment Plant
Type of sample : Silika Fume – FACESTONE
Source : FACESTONE
Delivery Date : 15/092019
Report No. : SL - 01

RESULTS OF PHYSICAL ANALYSIS OF SILICA FUME SAMPLE ASTM C 1240

1) Accelerated pozzolanic strength activity index with Portland cement

Mixes	Compressive Strength Mpa Of Mortar Cubes (ASTM C 109)				ASTM C 1240 Limits
	7 days			Average	
Control	22.3	23.5	23.05	22.95	---
FACESTONE	25.9	25.7	26.2	25.9	Min. 105 % of control mix (24.1 Mpa)

ASTM C 1240 limits :

- The amount of compressive strength of mortar after 7 days of silica mix shall more than control mix by 5 %.

The Test Results is (☑Comply - ☐ Not Comply) with Spec. Limits

Signature:\.....

CEL Consulting Engineering Bureau & Laboratories مكتب ومعامل الاستشارات الهندسية

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Zamalek, Cairo.
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ACCREDITED ISO 17025

٣ ش الملك الأفضل
الزمالك – القاهرة
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www.cel-egypt.com

CEL
Consulting Engineering Bureau & Laboratories
مكتب ومعامل الإستشارات الهندسية

Company Name : Orascom\A.C JV
Project :Bahr El-Baqar Treatment Plant
Type of sample : Silika Fume – FACESTONE
Source : FACESTONE
Delivery Date : 15/092019
Report No. : SL - 02

RESULTS OF CHEMICAL ANALYSIS OF SILICA FUME SAMPLE BS 4550

Test	Results (%)	JOB LIMITS
Si O_2, (%)	91.92	90.0 Min.
Loss on Ignition, (%)	3.6927	4.0 Max.
S O_3, (%)	0.859	2.0 Max.
Mg O, (%)	0.1517	5.0 Max.
Alkali content (Na_2 O + 0.658 K_2 O), (%)	0.2920	1.5 Max.
Cl, (%)	0.0117	0.10 Max.
Ca O, (%)	0.492	1.0 Max.
Si, (%)	0.0969	0.40 Max.
Fe O_3, (%)	0.077	- - -
Al2 O_3, (%)	0.831	- - -
Moisture content, (%)	4.0751	--

The Test Results is (☑Comply - ☐ Not Comply) with Spec. Limits

Signature:\.....

CEL Consulting Engineering Bureau & Laboratories مكتب ومعامل الاستشارات الهندسية

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Zamalek, Cairo.
Tel& Fax : 27367231 -27363093

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Results of Physical Analysis of Silica Fume
Activity index according to ASTM C 1240

DATE	26-11-23	Type	Silica Fume
Testing Date	26-11-23	Client	Face Stone
Delvery Date	19-11-23	FORM NO :	868-1
Project	Ras Ghareb Energy		

Accelerated pozzolanic strength activity index with Portland Cement

Mixes	Compressive Strength KG/CM^2 Of Mortar Cubes (ASTM C 109)					
	7 days				Average	Activity index %
Control	LOAD (KN)	54.32	55.3	59.7	56.4	121.4%
	STRENGTH KG/CM^2	221.6256	225.624	243.576	230.3	
Silica Fume 10%	LOAD (KN)	69.4	68.87	67.2	68.5	
	STRENGTH KG/CM^3	283.152	280.9896	274.176	279.4	

Percent Retained on 45- µm (No.325) 8.4%

NOTES

- The Sample was delivered to the Lab by the Client.
- The Above Data is according to the information received from the Client.
- The Results above apply only to the sample delivered to the lab.

Tested by :	
Checked by:	
Lab manager	

Approved by	Dr Adel Elkordy

four technology labs.

ORASCOM CONSTRUCTION

Top Urgent

Purchase Order

Date: 23/12/2024

Project Name : 500MW Wind Power Plant Gulf of Suez

Project Code : 545

Supplier Name : Stone Maker International - the Face tone

Contact :

Tel :

Fax :

P.O.No. 292437 Rev. 0

Date: 23-DEC-24

Supplier Number : SU10817

Allow Awt Y Y Currency EGP

Tax Card Num 560468636

Dept. Purchasing

S.N	Description	UOM	Qty	Unit Rate	VAT	Total	P.R No.
1	TOOLS, HANDY EQUIPMENTSUPPLIES SUPPLIES (CONCRETE WORKS) MICRO SILICA Sallo Truck - Powder	TON	25	[redacted]	[redacted]	[redacted]	320175

Amount After discount : [redacted]

Grand Total : [redacted]

Payment Term	Description
Payment Terms: within 30 days after submitting the electronic invoice to Warehouse department	Delivery Time: To be coordinated with site team // Delivery Place: Project's Warehouse
Electronic Invoices must be sent to Warehouse department with copy of the PO & delivery note	OC to Charge the Supplier as Liquidated Damages for every week of delay or portion Thereof equal to (1%) of the PO amount and up to a maximum of 10%
Cloud Po # 1330	All Goods shall be brand new free from defects in materials and be fully warranted by the Supplier

J.G.

Buyer: Bassem Kaiser Fouad Ibrahim Reviewed By Purchasing Manager Director: 24.12.24

Department name : Purchasing
Revision number : 0؟ ???? ??? ????????? ??? ?? ?? ???? ?? ?????? ??? ??????? ?? ???? 24 ???? - ????? ??? ??????? ???? ?? ?????? •
Revision Date : 1-9-2008 . ????????? ??? ??? ??????? ??? ????????? ??????? •
ISO 9001 : 2000 Quality Management ?????? ?????? ?????? ??????? ????????? ? ????????? ?????? ??????? ??? ?????, ? ?? ???? ??? ??????? ????? ?????? ;
ISO 14001 : 2004 Environmental Management

ORASCOM CONSTRUCTION

ORASCOM CONSTRUCTION

Date: 27/11/2024

Purchase Order

Project Name : Abo Qir Metro Civil Works

Project Code : 558

Supplier Name : Stone Maker International - the Face tone

Contact :

Tel :

Fax :

P.O.No. 290597 Rev. 0

Date: 27-NOV-24

Supplier Number : SU10817

Allow Awt Y Y Currency EGP

Tax Card Num 560468636

Dept. Purchasing

S.N	Description	UOM	Qty	Unit Rate	VAT	Total	P.R No.
1	TOOLS, HANDY EQUIPMENTSUPPLIES SUPPLIES (CONCRETE WORKS) SILICA FUME Slurry Silica	TON	120	[redacted]	[redacted]	[redacted]	318152

Amount After discount : [redacted]

Grand Total :

Payment Term	Description
الدفع بعد الاستلام في خلال 30 يوم من تاريخ تسليم الفاتورة الي المخازن	All Goods shall be Brand New and Free from Defects in Materials and shall be Fully Warranted by Supplier
Delivery Time: To be coordinated with site team	OCI to charge the Supplier as Liquidated Damages for every week of delay or portion .thereof equal to (1%)of the Po Amount and Up to a maximum of 10%
تنبية هام: يجب كتابة اسم المشروع في الفاتورة الالكترونية .مترو ابو قير - الاعمال المدنية	The electronic invoice must be sent to the warehouse department along with a copy of the supply order.
	Delivery Place: At Project's Warehouse.
	يتم إضافة القيمة المضافة 14% على اجمالي امر التوريد عند استخراج الشيك

Buyer: Micheal Wadih Awadallah Soliman Reviewed By Purchasing Manager Director: 27.11.24

Department name : Purchasing
Revision number : 0؟ ???? ??? ????????? ??? ?? ?? ???? ?? ?????? ??? ??????? ?? ???? 24 ???? - ????? ??? ??????? ???? ?? ?????? •
Revision Date : 1-9-2008 . ????????? ??? ??? ??????? ??? ????????? ??????? •
ISO 9001 : 2000 Quality Management ?????? ?????? ?????? ??????? ????????? ? ????????? ?????? ??????? ??? ?????, ? ?? ???? ??? ??????? ????? ?????? ;
ISO 14001 : 2004 Environmental Management

ORASCOM CONSTRUCTION

ORASCOM CONSTRUCTION

Purchase Order

Date: 21/11/2024

Project Name : Silver Sands Phase 01 Construction Works 1A 1B

Project Code : 540

Supplier Name : Stone Maker International - the Face tone

Contact :

Tel :

Fax :

P.O.No. 290115 Rev. 0

Date: 21-NOV-24

Supplier Number : SU10817

Allow Awt Y Y Currency EGP

Tax Card Num 560468636

Dept. Purchasing

S.N	Description	UOM	Qty	Unit Rate	VAT	Total	P.R No.
1	TOOLS, HANDY EQUIPMENTSUPPLIES SUPPLIES (CONCRETE WORKS) SILICA FUME Powder Macro Silica F.C.S 1500/P Grey support Gold Leed Concrete & C90 Mixture - Sallo Truck	TON	60	[redacted]	[redacted]	[redacted]	318237

Amount After discount : [redacted]

Grand Total : [redacted]

Payment Term	Description
Payment Terms: 30 days after submitting the electronic invoice to Warehouse department	Delivery Time: To be coordinated with site team // Delivery Place: Project's Warehouse
Electronic Invoices must be sent Warehouse department with copy of PO & delivery note	OC to Charge the Supplier as Liquidated Damages for every week of delay or portion Thereof equal to (1%) of the PO amount and up to a maximum of 10%
The price includes the transportation cost	All Goods shall be brand new, free from defects in materials & be fully warranted by Supplier

J.G.

Buyer: Mina Osama Manoully Tadrous Reviewed By Purchasing Manager Director:

Department name : Purchasing
Revision number : 0? ???? ??? ???????? ??? ?? ?? ???? ?? ????? ??? ??????? ?? ???? 24 ???? - ????? ??? ??????? ???? ?? ?????? *
Revision Date : 1-9-2008 . ????????? ??? ??? ??????? ??? ???????? ??????? *
ISO 9001 : 2000 Quality Management ????? ?????, ?????? ??????? ???????? ? ???????? ??????? ??????? ??? ?????, ? ?? ???? ??? ??????? ????? ?????? ?
ISO 14001 : 2004 Environmental Management

ORASCOM CONSTRUCTION

UNIMIX

PURCHASE ORDER 3000012449

Name1: صانع الحجر العالمين (قبس)
Name2:
City: CAIRO
Tel:
E-Mail:
VAT# in PO:
Vendor#: 10000804
Quotation#:
Payment terms: Z009 100% settlement within 30 days from invoice date Upon Availability
Inco1:
PO General Notes

Created on Dec 29, 2024
Buyer Name: Mark Aziz
Contact#:
E-Mail:
Delivery date Dec 29, 2024
Currency: EGP

Dear Sir, Reference is made to your A/M Quotation and all our related correspondence, we are glad to issue this Purchase Order to you for the supply of the following/s, all subject to the terms and conditions stated in this document and attachment/s (if existing).

Item Code	Material Description	Mfg Part#	Special Remarks	Source	Plant	PR	Quantity	UOM	Net Price	Net Value
1000000804	FACESTONE MICRO SILICA SLURRY				CML4		300,000	KG	[redacted]	[redacted]

Net PO value: [redacted]

PO total amount : [redacted]

*All the above prices do not include VAT

FM.PUR.06

Customer **ORASCOM CONSTRUCTION** **5 September 2022**

Project **El Hammam Canal 5 KM**

Mix Identification **275** KG./ CUBIC METER CEMENT CONTENT

Strength Required **200** KG/CM2 @ 28 DAYS

MIX PROPORTION

Materials	Specific Gravity Ton/Cu.M	Weight Kg/Cu.M	Volume -3 Cu.Mx10
Cement	2.90	275	94.83
Sand	2.60	740	284.62
Agg.Size-2	2.57	510	198.44
Agg.Size-1	2.57	540	210.12
from face stone Micro silica Slurry	1.38	25	18.12
Water	1.00	175	175
Absorption Water	1.00	27	0
Air Voids	1.5%	0	15.00
RH833 From BASF Admixture Plant	1.18	4.0	3.4
	TOTAL	2296	1000

MATERIAL DESCRIPTION

Cement Brand	SRC CEMENT
Coarse Aggregate	Size 1 & Size 2 conform ASTM C33
Source	Wadi El Natron
Fine Aggregate	Natural Wadi SAND conform ASTM C33
Source	Elhammam Area
Water	CITY SOURCE (potable).
Admixture	Type-Retarder / Plasticiser
Brand	BASF RHEOBUILD 850 or 833
Water/Cement (FREE)	0.58
Water/Cement (TOTAL)	0.67
SLUMP (Initial)	220
SLUMP (After 45 min)	180 - 160 mm
Con-Grade / Class	C35
Standard Used	Project Spec.
Sample Tested	150X150X150mms(CUBE.)
Agg. Nom. Max. Size	19 mm
Age at test	28 days
Min. Comp. Strength	200 kg./sq. cm
Standard Deviation * *k*	66 kg./sq. cm
Mean Comp. Strength	266 kg./sq. cm

Standard Deviation according to Project Specification

Minimum cement content Kg/m^3 = **250**

Remarks :

Abd El Rahman Zayed

Bsc.civil,aci member& E.E.S.consult

Internation Concrete Inspector

New F16 Maintenance Hangar Marsa Matrouh Air Base, Egypt

Task Order#:(W912ER22F0059)

Concrete Mix Design

1.0 INTRODUCTON

This report was requested by AICI for the concrete mix design required to give minimum compressive strength of 14 N/mm^2 (14 MPa), 28 N/mm^2 (28MPa) and 32 N/mm^2 (32MPa) after 28days respectively, to be used in concrete works for Cast-In-Place concrete works at the above-mentioned project.

All tests were carried out by Ardaman-Ace Laboratory

2.0 LABORATORY PROGRAM

Nine (9) concrete mixes were prepared with Sulphate Resisting cement and High Range, Water-Reducing superplasticiser (Rheobuild 850).

- Three (3) mixes for 14MPa concrete for of the same composition with aggregate maximum nominal size # 57 (5-25mm) except water content to determine the corresponding slump and strength

-Three (3) mixes for 28MPa concrete for of the same composition with aggregate maximum nominal size # 67 (5-19mm) except water content to determine the corresponding slump and strength.

-Three (3) mixes for 32MPa concrete for of the same composition with aggregate maximum nominal size # 67 (5-19mm) except water content to determine the corresponding slump and strength.

ALL the tests required for materials or concrete design confirmation were performed according to the American Society for Testing and Materials (ASTM) Specification and the American Concrete Institute (ACI).

3.0 SOURCE OF MATERIALS

3.1 Cementitious Material

A1. Cement: The cement was Sulphate Resisting Portland cement SRC Type V (Recommended in Geotechnical Report at par. VII conclusion and recommendations item 5 use sulfate resistant cement Type V) manufactured in Titan cement Factory the cement was supplied by ConcreteTeam-Ready Mix.

A2. Silica Fume Delivered by ConcreteTeam-Ready Mix manufactured by FaceStone.

3.2 Coarse aggregate:

The coarse aggregate was two sizes of crushed stone (dolomite):

* Size #1 with maximum nominal size of 12mm and minimum nominal size of 5mm
* Size # 2 with maximum nominal size 25mm and minimum nominal size of 12mm

The coarse aggregate was delivered to the Laboratory by ConcreteTeam-Ready Mix. From El-Masa Quarry at Wadi EL-natron.

3.3 Fine Aggregate:

The Sand was graded (Natural Sand) maximum nominal size 4.5mm and minimum nominal size of 0.2mm

The sand was delivered to the Laboratory by ConcreteTeam-Ready Mix from Kafr-Dawood at El-Khatatba quarries.

3.4 Water:

The water was delivered from Government (water City)

3.5 Admixture:

The admixtures were as follows: MasterRheobuild 850: High Range water reducing, superplasticizer admixture (type G) manufactured by BASF

elMasria
For Concrete & Engineering
الشركة المصرية للخرسانة والهندسة
ش.م.م

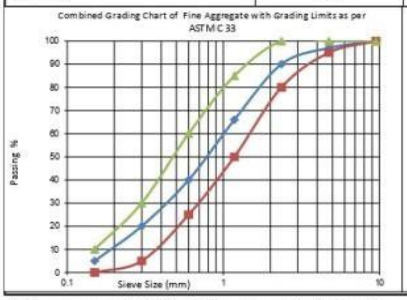
المركز الرئيسى : مدينة ٦ أكتوبر
المنطقة الصناعية الثالثة - قطعة رقم ١٦٥
رقم تليفون : ٣٨٢٠٤١٦٥ - ٣٨٢٠٤٠٨٠
محمول : ٠١٢٨٢٧٥٦١٢٢
رقم الفاكس : ٣٨٢٠٤٢٦٥
الموقع الالكترونى : www.masriamix.com

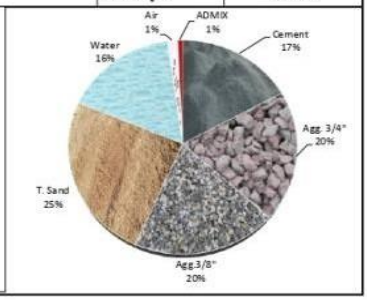
Concrete Mix Design Technical Report

From :	El Masria for Concrete & Engineering	Specification :	ACI 211.1, 301, ASTM C- 94		
Contractor :	Orascom Constructions	Design Strength (Kg/cm²) :	450	After 28 days	
Consultant :	ECG / SYSTRA	T. cementitious Content :	500	kg / m³	
Project :	H.S.T Station	(W/C)Ratio :	0.33		
Location :	Borg Al Arab	SLUMP TOLERANCE :	180 ± 30 mm		
Note :	ViaDuct	$F_m = F_{cu}$ (45) + m (6.5)	515 Kg / cm²		

Materials Technical Specification					Blending Percentage		Volume (L³)
Materials	Type	Quantity Kg/m³	Source	SSD. Sp.Gr	Of Sub.	Of Total	
Cement	OPC	470	Watania	3150	94%	21%	149.2
Micro Silica	Slurry	30	Face Stone / eq.	1380	6%		21.7
Micro Silica	Powder	0	-	2200	0%		0.0
Free Water	Potable Water	165	Government	1000	100%	7%	165.0
Coarse Aggregate (3/4")	Crushed Dol	510	Wady Natron	2570	50%	43%	198.4
Coarse Aggregate (3/8")	Crushed Dol	510	Wady Natron	2570	50%		198.4
Fine Agg.1 (Dune Sand)	Natural	645	Khatatba	2600	100%	27%	248.1
Fine Agg.2 (Crush Sand)	Crushed	0	-	2600	0%		0.0
Admix.1 (± 2 Liter)	FM 240 or eq.	9	Ha-Be / eq.	1210	100%	0.4%	7.4
Admix.2		0	-	1000	0%		0.0
Air content						1.5%	15
Water Absorption (kg) (± 5 Liter)		15	Concrete Density (kg/m³)		2354	Volume (L³)	1003.3
Total Water (kg) (± 5 Liter)		180			Total %	101%	

Trial mix Expected Results							
Slump (mm)		Temperature (C)		Entrained Air %		Comp. Strength (Kg/cm²)	
Initial	210	Ambient	26 ℃	Initial	1.5%	3 days	301.50
30 min	195	Mixing Water	13 ℃			7 days	436.50
60 min	175	Concrete	30 ℃			28 days	585.00





To increase workability at site, super plasticizer (type F) can be added maximum 1 % from weight of cement .

As Required By ACI 211.1.91 Fine & Coarse Aggregate proportioning may be Adjusted to suit the variation in day-to-day moisture content .

The dosage of admixtures will vary as per working conditions but within manufacture's recommendations .

Mohamed Taha
QC.QA Manager

مكسار وأ)تكرش جلناموفيسللا دامتعإ FACESTONE تينلسرخلا تاطلخلا ميمصت يف
قفنلاا ورتم عبرلا طخلا يف ةصاخلا)تكرش يف

Rev	Date	Author	Checked	Description of revision	Approved
00	10/12/2023	MG	YA	Issued for Approval	YL

Gulf of Suez II
500 MW WIND POWER PLANT BOO PROJECT

Employer: REDSEA WIND ENERGY S.A.E.

Consultant: TRACTEBEL ENGIE

BOP Contract: ORASCOM CONSTRUCTION

Type of Document:

QA/QC Document

Contractor Code Number:	OC	Q A	G E N	0 0	1 0 0 5	0 0	Sheets : 1+ 124 A4
	Originator	Doc. Type	Location	S-Loc.	Doc No.	Rev.	Scale :

Document Title:

Concrete Design Mixes and Lab. Trials for Cast in Situ Elements (Alternative Material)

Reference Specification(s):

For Contractor:

Name: Hany Ezzat Signature: Date: 10/12/2023

ENGINEER ACTION:

Gulf of Suez II 500 MW WIND POWER PLANT BOO PROJECT	ORASCOM CONSTRUCTION	
Concrete Design Mixes and Lab. Trials for Cast in Situ Elements (Alternative Material)	Date	10-12-2023
	Rev. 00	Page 1 of 124

1. Introduction

This Submittal Introduces the Concrete Design Mixes and Lab trials at batch plant for concrete that will be used for Cast in Situ Elements (Alternative Material) and wherever required as per The Project's Drawings

2. Reference

1. Project specification
2. The Geotechnical report : OC-GE-WTG-00-9001&9002&9003
3. Design Drawing (STANDARD AND GENERAL NOTES (OC-DW-WTG-FN-1000)
4. ITP (General on Site Concreting & Testing) : OC-QA-GEN-00-1000
5. MS (Method Statementp General In Situ Concrete) : OC-MS-GEN-00-0001

3. Information of materials used in main (Sam Mix) batching and the back-up (OC) batch plant and Cconcrete Design mixes.

Materials	Source
Coarse aggregate Size: large and small	Coarse aggregates Attaka quarry Combined coarse aggregates with different percentage to comply the ASTM Standard
Fine aggregate	Natural Sand El Saff quarry Comply with the ASTM Standard
Cement	Lafarge Cement company Type CEMI-OPC CEMI-SR3 CEM III/A Comply with the ASTM Standard
Water	Potable water
Admixture	BASF Company 1-High rang water reducing and super plasticizer during mixing Master Rebuild ® 3838 type (G) / Sikament®-R4PN Comply with the ASTM Standard
Micro Silica	FACE STONE (FCS) Company Comply with the ASTM Standard (ASTM C 114-00 & ASTM C 114-18)

cement with reduced heat of hydration must be used for massive foundations. Specify!

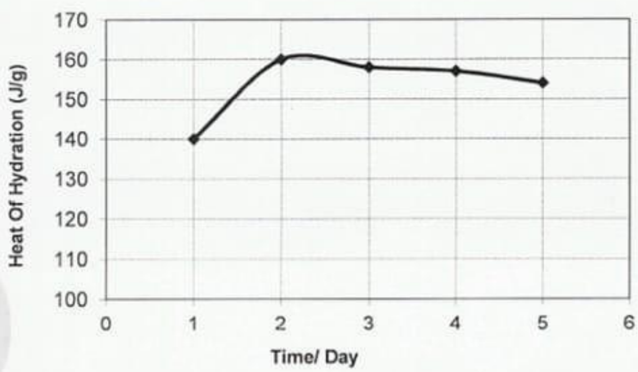
في تخفيض درجة حرارة الإماهة في FACESTONE

four technology labs.

+20 22 516 5582
+20 111 448 3615
info@4tlegypt.com

Test Results
Cement Heat Of Hydration
EN 196-9

Date	30-7-2023	Source	Beni suef (New)+ 10% Silca FCS
Client	Orascom Construction	Type of cement	CEM III
Project	Ras Ghareb Energy	Date of test	25-Jul



Age /Day	Max / J/g
1	140
2	160
3	158
4	157
5	154

Max.Cement Heat Of Hydration (J/g)	160

Note:

- The Above Data is according to the information received from the Client.
- The Results above apply only to the sample delivered to the lab.

Tested by :	
Checked by:	
Lab manager	

Approved by Dr Adel Elkordy

CODE CE09-F-04

four technology labs.

ARDAMAN Split

MATERIALS & CONSTRUCTION TESTING, S.A.E.

3 ABD EL KAWY AHMED St., Flat 6 - MOHANDSEEN

Tel.: (+2) 0233448413 - (+2) 01006030248

Contract: W912ER17D0004, Task Order: W912ER22F0059, AICI-Pacer Forge, F16 Maintenance Hanger, Marsa-Matrouh Air Base, Egypt. **File No.: 4848**

Client: AICI (American International Contractors, Incorporated) **Date: 26/12/2022**

Rigid Pavement Mix Design - R4.5 (90 days)
According to ACI 211.1 SECTION 32 13 14.13

A) Mix Requirements:

will be used for casting

Specified Flexural Strength (R) at 90 days =	**4.50**	Mpa	
Required Flexural Strength (R) at 90 days =	**5.2**	Mpa	
Initial Target Slump at point of placement =	**50**	mm	
Target Air content =	**4**	%	(2.5% - 5.5%)

B) Mix Proportions: W/C = 0.38 Trial Ref.: R4.5-T2

Material	Source	Weight (kg/m^3)	Specific Gravity	Absolute Volume (m^3)
Cement (SRC - 42.5 N)	Lafarge	380	3.150	0.121
Silica fume	Facestone	30	2.200	0.014
Total water *	Potable water	177	1.000	0.156
MasterRheobuild 850 **	BASF	5.0	1.225	0.004
Master Air 111	BASF	1.7	1.084	0.002
Coarse Aggregates Size # 67	Al Masa Quarry	756	2.646	0.286
Coarse Aggregates Size # 4	Al Masa Quarry	436	2.673	0.163
Air	-	-	-	0.027
Natural Sand	Kafr Dawood	589	2.579	0.228
absorption water kg/m3	-	20.6		
Total Materials		2373.9		1.000

** Hight range water reducer was used with Silica fume.

ARDAMAN شركة أردمان - سيد (الإدارة)

SAFETY DATA SHEET facestone silica plind 100 Page 1 of 6

1. Substance and Source Identification

Product Name: facestone silica plind 100 (Dry Powder)

Product Uses or Application: Cementitious Mixtures

Company

Information, facestone Inc. Plant Locations:Safa industrial zone pl:no 151

Office 3 AlAdeb M.Elsebaey new nozha

Telephone: 202-26206493 Website: http:// www.facestone-eg.com Emergency

Telephone202-01200244489

2. Hazards Identification

Classification: Does not meet the criteria of the UN Globally Harmonized System

(GHS) for hazard classification.

Physical Hazard: Not classified - Health Hazard: Not classified

Label Elements:

Symbol: No Symbol - Signal Word: No Signal Word

Hazard Statement (s): Not applicable. Precautionary Statement(s) Not applicable.

3. Composition/Information on Ingredients - Substance: Micro silic

Synonyms: Amorphous Silica, Silicon Dioxide, Microsilica, Corrochem,Micropoz.
CAS No: 69012-64—2 - EINECS No: 273-761-1

Micro silica may contain trace amounts (<0.05%) of crystalline silica (quartz), which has been shown

to cause silicosis, and has been identified by IARC and NTP as a possible human carcinogen.

THE INTERNATIONAL STONE MAKER(FACESTONE)

SAFETY DATA SHEET facestone silica plind 100 Page 2 of 6

4. First Aid Measures

Inhalation: If inhaled to excess remove exposed person to fresh air. If necessary, seek

medical attention.

Skin Contact: Wash skin with mild soap and water.

Eye Contact: Flush eyes with water and carefully rinse under the eyelids. If necessary, seek

medical attention

Ingestion: Obtain first aid or medical assistance immediately.

Most Important Symptoms/Effects, Acute and Delayed: Dust may result in irritation.

5. Fire Fighting Measures

Fire and Explosion Hazards: Micro silica is non-combustible and presents no danger of

explosion

Extinguishing Media: N/A, Use extinguishing agents appropriate for surrounding fire

Protective Equipment for Fire

Fighters:

Wear NIOSH approved self-contained breathing apparatus

(SCBA)

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www.facestone-eg.com / m.daha@facestone-eg.com
asfdaha@yahoo.com / asfdaha@gmail.com

NFPA Ratings: 0 = Minimal: 1 = Slight: 2 = Moderate: 3 = Serious: 4 = Severe

Health = 0 Fire = 0 Reactivity = 0

6. Accidental Release Measures

Personal Precautions,

Protective Equipment and

Emergency Procedures:

Use 42 CFR 84 NIOSH/MSHA approved respirators when

airborne concentrations equal or exceed the Permissible Exposure

Limit.

Methods and Materials for

Containment and Cleanup:

Collect using methods that minimize creation of airborne dust.

High efficiency vacuum cleaning is recommended to recover

spilled material. Place in suitable container for recycling or

disposal. Handle with adequate ventilation for dust.

7. Handling and Storage

Safe Handling Precautions: Avoid generating dust. Handle with adequate ventilation for dust.

Storage: Best in closed containers, ambient air temperature, keep dry.

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THE INTERNATIONAL STONE MAKER(FACESTONE)

SAFETY DATA SHEET

8. Exposure Controls and Personal Protection

Exposure Limits: No occupational exposure limits have been established for this material.

Silica, Amorphous Silica

Fume 69012-64-2 TLV Withdrawn due to

insufficient data

Silica – Crystalline

α-Quartz 14808-60-7 0.05 mg/ m3 0.025 mg/m3

R Measured as respirable fraction of the aerosol.

*Total Dust

**Respirable dust

There is no hazard classification for the amount of respirable crystalline silica in the product because when measured

by X-Ray diffraction the level is below 0.1%

Engineering Controls: Provide sufficient mechanical (general and/or local exhaust) ventilation to

maintain exposures below PELs or TLVs in processing areas.

Personal Protection: In accordance with OSHA 29 CFR 1910.132 subpart I, wear appropriate

Personal Protective Equipment (PPE) to minimize exposure to this material.

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asfdaha@yahoo.com / asfdaha@gmail.com

Respiratory Protection: If workplace conditions warrant a respirator OSHA 29CFR 1910.134 must

be followed. Refer to NIOSH 42 CFR 84 for approved respirators when

airborne concentrations equal or exceed the Permissible Exposure Limits.

Eye/Face Protection: Wear tightly fitting safety goggles when a risk assessment indicates this is

necessary.

Skin/Body Protection: Choose body protection in relation to the task being performed and the risks

involved and should be approved by a specialist. Chemical–resistant gloves

should be worn at all times when handling chemicals.

9. Physical And Chemical Properties

Physical State: Amorphous sub-micron powder – dust has a tendency to agglomerate - Color: Light to medium gray Odor: None

Melting Point: 1200ºC - 1300ºC* Specific Gravity: 2.2 – 2.50 Water = 1.0

pH: 6.0 to 9.0

Solubility in Water: Insoluble Particle Size: Approx. 0.4 µm

Bulk Density: Approx. 8 to 48 lb./ft3 or 128-769 kg/m3

Solubility Solvents: Insoluble to slightly soluble in organic solvents

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asfdaha@yahoo.com / asfdaha@gmail.com

THE INTERNATIONAL STONE MAKER(FACESTONE)

10. Stability and Reactivity

Conditions to avoid: See Below

Substances to avoid: Hydrofluoric acid (HF)

Hazardous reactions: Micro silica is soluble in hydrofluoric acid (HF) and can form toxic gas (SiF4).

Decomposition

products:

Heating at temperatures above 500ºC (930ºF) for prolonged time periods will

convert amorphous silica to crystalline phases.

11. Toxicological Information

Route of Exposure: Inhalation: X Skin: X Ingestion: N/A Eyes: X

Acute Toxicity:

Inhalation: Airborne Micro silica dust generated by the use or handling of this product may result

in respiratory tract irritation.

Ingestion: Micro silica dust may irritate and dehydrate throat and mouth.

Eye Contact: Micro silica dust may cause eye mechanical irritation and dryness.

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asfdaha@yahoo.com / asfdaha@gmail.com

WHMIS: Not classified

Proposition 65:

This product may contain trace amounts < 0.05% of crystalline silica a

chemical known to the State of California to cause cancer, birth defects or

other reproductive harm.

SAFETY DATA SHEET

Facestone silica plind 100 Page 6 of 6

16. Other Information:

The UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS) safety

data sheets (SDS) are required only for substances and mixtures that meet the harmonized

criteria for physical, health or environmental hazards. Based on Chapter 1.5.2 this product does

not fit into these criteria.

National Fire Protection Association (NFPA) Rating:

Facestone Micro silica (Dry Powder-S)

All information, recommendations, and suggestions in this SDS, concerning our products are based on

tests and data believed to be reliable, it cannot be guaranteed. Since the actual use by others is beyond

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THE INTERNATIONAL STONE MAKER(FACESTONE)

SAFETY DATA SHEET.

Facestone silica plind 100 Page 5 of 6

14. Transport Information:

DOT Not regulated

IATA Not regulated

IMDG Not regulated

Special Precautions for user: None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not classified

15. Regulatory Information:

SARA TITLE III: Section 302/304 (extremely hazardous substances) Not regulated

Sections 311/312 Hazardous Categories (40 CFR370.21)

Acute Health:

Chronic Health:

Fire:/Reactive:/Pressure: no

Section 313 This product contains no chemicals subject

to the supplier notification requirements. Not regulated

CERCLA: Comprehensive Response Compensation and Liability

Act (40 CFR 30.4) Not regulated

Domestic Substances List.

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asfdaha@yahoo.com / asfdaha@gmail.com

WHMIS: Not classified

Proposition 65:

This product may contain trace amounts < 0.05% of crystalline silica a

chemical known to the State of California to cause cancer, birth defects or

other reproductive harm.

SAFETY DATA SHEET

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16. Other Information:

The UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS) safety

data sheets (SDS) are required only for substances and mixtures that meet the harmonized

criteria for physical, health or environmental hazards. Based on Chapter 1.5.2 this product does

not fit into these criteria.

National Fire Protection Association (NFPA) Rating:

Facestone Micro silica (Dry Powder-S)

All information, recommendations, and suggestions in this SDS, concerning our products are based on

tests and data believed to be reliable, it cannot be guaranteed. Since the actual use by others is beyond

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THE INTERNATIONAL STONE MAKER(FACESTONE)

our control it is the user's responsibility to determine the safety, toxicity and suitability for their own use

of the product described herein.

HAZARD RATING SYSTEM:

Hazardous Material Identification System (HMIS)

HEALTH = 1

FLAMMABLILITY = 0

REACTIVITY = 0

PERSONAL PROTECTION = E – (See section 8)

HEALTH HAZARD

4 DEADLY

3 EXTREME DANGER

2 HAZARDOUS

1 SLIGHTLY HAZARDOUS

0 NORMAL MATERIAL/FIRE HAZARD/ FLASH POINT/4 BELOW 73°F

3 BELOW 100°F/ 2 BELOW 200°F/ 1 ABOVE 200°F/ 0 WILL NOT BURN

SPECIFIC HAZARD/OXIDIZER OX

ACID ACID/ALKALINE ALK/CORROSIVE COR

USE NO WATER W/RADIOACTIVE/INSTABILITY

4 MAY DETONATE/ 3 SHOCK+HEAT MAY/ DETONATE

2 VIOLENT CHEM. CHANGE/ 1 UNSTABLE IF HEATED/ 0 STABLE

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FACESTONE
FULL CONCRETE SOLUTIONS

Company Overview

Founded in 2018 by a dream entrepreneur who believed in Egypt's construction industry potential. FACESTONE is now a Leading provider of cement solutions and ready-mix products. With operations primary concentrated on North Africa and the Middle East. FACESTONE brings together a deep knowledge of local markets with its network of high profile clients and partners. We provide world-class products and Services to all customers, from large industrial and development contractors to individual home builders.

We collaborate with architects and engineering companies to improve construction methods - aesthetics, strength, durability, design, and sustainability. FACESTONE works with customers to design and produce new products that meet unique construction requirements. In recent years, the advent of ultra-high performance concrete has revolutionized construction, offering increased ductility, durability and resistance. Our self-placing concrete significantly enhances aesthetic appearance and facilitates ease of use at the building site. We constantly strive to help customers generate value in their businesses through innovation.

FACESTONE
FULL CONCRETE SOLUTIONS

Vision

We aim to become the leading force in the high-tech and unique silica fume and cement solutions in North Africa and the Middle East.

Mission

To be recognized as a reliable cement producer and supplier, committed to exceeding the expectations of our stakeholders through providing high quality products and services, through a professional multi-skilled team focused on our core business and supported by innovative technologies.

Founder

"We promise the highest quality and promptest service to ensure the delight of our customers - no matter how large or small" M.DAHA - CEO/Founder

FACESTONE
FULL CONCRETE SOLUTIONS

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