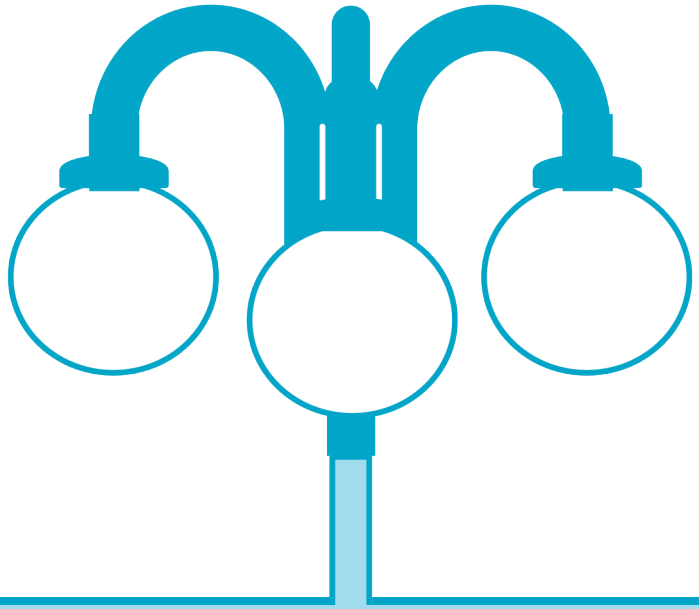
ELSEWEDY POLES

Subsidiary of ELSEWEDY ELECTRIC

FIBERGLASS POLES

Pre-Qualifications



Fiberglass Poles

Prequalification

Elsewedy Electric in Brief

Elsewedy Electric started in 1938. We are a leading integrated energy solutions providers in Middle East & Africa serving and reaching our customers through 5 main markets; Energy, Infrastructure, Industrial, Building, and Residential by operating in 8 diversified segments that serve all the energy solutions applications.

30 production facilities located in 14 different countries. Exporting a wide range of products to more than 110 countries worldwide.

Fiber Glass poles

Elsewedy Electric builds Fiber Glass Poles up to 15 m height and for all the applications, such as Street Lighting Poles, Decorative & Garden Lighting Poles, Wide Areas Poles, Traffic Sign Poles, Signal Carrier Poles, Flag Poles, Cross-roads Poles and Over Head Transmission Poles (11 k.V)

Quality Policy

Quality & safety are uncompromised for Elsewedy Electric; the adopted policy assures maximum effectiveness & efficiency through all process systems, making sure that every aspect of the company activity is aligned to satisfy our objectives and customer expectations using the full potential of every person.

The continuous monitoring of systems performance is essential and performed with the use of the most powerful diagnostic tools which contributed to the reliability of Elsewedy Electric Quality system that is based on the following worldwide approved Management Standards:

- Quality Management System (ISO 9001:2008)
- Quality Management System ISO / TS 16949:2002 (For Automotive Facilities)
- ISO 17025 (Competence of Testing & Calibration Laboratories)
- Environmental Management System (ISO14001:2004)
- Occupational Health and Safety Assessment Series (OHSAS 18001:2007)
  Through credibility, customer loyalty, innovation, quality and human capital investment Elsewedy Electric will pursue its mission to become the world expert in the field.

Certificates
Certificates
Certificates
Certificates
Certificates
Certificates
Certificates

BASEC
BRITISH APPROVALS SERVICE FOR CABLES

CERTIFICATE OF CONFORMITY

This is to certify that the

Quality Management System

of

EL SEWEDY CABLES GROUP

Incorporating

United Industries Company - UIC

conforms to the requirements of

ISO 9001:2008

in respect of the sites specified in the attached schedule(s).

Schedule nos:-

CS1-185/003.1

Certificate No: **CS1-185/003.0**

Date of Issue: 15th October 2011

Date of original certification: 8th February 2007

Expiry Date: 4th November 2014

This certificate is issued subject to and in accordance with BASEC Regulations and continued compliance.

Signed for and on behalf of the British Approvals Service for Cables

Graham R Oley Date 20/10/11

This Certificate and Schedule(s) remains the property of BASEC, and shall be returned when required.
BSF080.002/ A1574 / Copy No: 1

BASEC ISO 9001

UKAS MANAGEMENT SYSTEMS 004

23 PRESLEY WAY, CROWNHILL, MILTON KEYNES, MK8 0ES, UK. REGISTERED IN ENGLAND NO 1150237 TEL: +44(0)1908 267300 FAX: +44(0)1908 267255 MAIL@BASEC.ORG.UK WWW.BASEC.ORG.UK

Certificates

SGS

Certificate CH10/1115

The management system of

United Industries Company – UIC
(EL Sewedy Cables)

10TH OF Ramadan City , Industrial Zone A3 ,Cairo , Egypt

has been assessed and certified as meeting the requirements of

OHSAS 18001:2007

For the following activities

Round and flat enamelled (Magent) wire, paper insulated wire, tinned copper and plain drawn copper. Control, instrumentation , coaxial , LAN, Fiber optic cables , telephone , sound, automotive, fire resistant , fire alarm , low voltage and flame retardant cables and indoor wires , lighting , transmission and decorative fibre poles , cable filler , multi outlet sockets, cable plug cords.

This certificate is valid from 5 July 2010 until 4 July 2013
and remains valid subject to satisfactory surveillance audits
Recertification audit due before 22 June 2013
Issue 1. Certified since July 2013
Authorised by

SGS Société Générale de Surveillance SA Systems & Services Certification
Technoparkstrasse 1 8005 Zurich Switzerland
t +41 (0)44 445-16-80 f +41 (0)44 445-16-88 www.sgs.com

Accreditation No. SCESm 017

Page 1 of 1

Certificate EG10/2616

SGS

SYSTEM CERTIFICATION ISO 14001 SGS

The management system of

United Industries Company-UIC (EL Sewedy Cables)

10th of Ramadan City, Industrial Zone A3, Cairo, Egypt

has been assessed and certified as meeting the requirements of

ISO 14001:2004

For the following activities

- Round and flat enamelled (Magent) wire, paper insulated wire, tinned copper and plain drawn copper.
- Control, instrumentation, coaxial, LAN, Fiber optic cables, telephone, sound, automotive, fire resistant, fire alarm, low voltage and flame retardant cables and indoor wires, lighting, transmission and decorative fibre poles, cable filler, multi outlet sockets, cable plug cords.

This certificate is valid from 18 August 2010 until 18August 2013 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 22 June 2013
Issue 1. Certified since 18 August 2010

Authorised by

UKAS MANAGEMENT SYSTEMS 005

SGS United Kingdom Ltd Systems & Services Certification
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SGS SGS

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وزارة الدولة للبحث العلمى
المعهد القومى للقياس والمعايرة

Tersa St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel. / Fax: +202 -33867452 - NIS Tel: + 202- 37401113

TEST REPORT
تقرير اختبار

Report No: 17/ 42 /2010

- **NIS Lab** (اسم المعمل): : Polymer Metrology and Technology
- **Issued For** (صادر الى): : Project Upgrading of Cairo/Alex/Mattrouh Road
- **Sample Specification** (وصف العينة): : Fiber Glass light Pole Samples of length (10.5&12.5m) (aging)
  - **Manufacturer** (اسم الشركة المنتجة): : ------ United Industries Co., El Sewedy
  - **Code** (كود): :
- **Reference Number of Test** (رقم الاختبار المرجعى): : 1141/17/ 42 /2010
- **Date of Receipt** (تاريخ الاستلام): : 20 Apr ,2010
- **Date of Test** (تاريخ الاختبار): : 4 May ,2010
- **Issue Date** (تاريخ الاصدار): : 21 Sep ,2010

Approved by

Head of Laboratory
Dr. Anhar Awad
Dr. Anhar Awad

NIS President
Prof. Dr. Eng. Ali E. Abuelezz

Page 1of 3

This certificate is issued in accordance with the laboratory accreditation requirements. It provides traceability of measurement to recognized national standards, and to the units of measurement realized at the NIS or other recognized national standards laboratories. This certificate may not be reproduced other than in full by photographic process. This certificate refers only to the particular item submitted for testing.

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Tersa St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel. / Fax: +202 -33867452 - NIS Tel: + 202- 37401113

Results

Sample No.	Mass gm (Before Ageing)	Mass gm (After Ageing)
1	7.891	7.882
2	7.546	7.538
3	7.677	7.669
4	7.896	7.887
5	7.865	7.856
Average	**7.775**	**7.766**

The loss mass percentage = (Mass before ageing- Mass after ageing)
Mass before ageing

$$= \frac{7.775 - 7.766}{7.775} \times 100$$

$$= 0.116\ \%$$

Notes that:

The test is performed according to requirements of customer.

Report No. 17/42/2010

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Results

Sample no.	Impact Energy KJ/m^2		
	Top	Middle	Bottom
1	243.259	180.942	262.658
2	197.139	228.984	163.85
3	201.76	222.419	240.328
4	196.151	221.972	196.998
5	178.961	219.068	215.034
Average	**203.454**	**214.644**	**215.774**

Report No. 17(a)/42/2009

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Results

Client: مشروع تطوير طريق مصر اسكندرية الصحراوي- القطاع الخامس

Address: العاشر من رمضان- منطقة A3

Tel.: 015-411216/17/18/20

Fax.: 015411215

* Item under test: Fiber Glass light Pole Samples
* Reference Method Used: ASTM D-256
* Machine used: Pendulum impact testing machine RKP 50

* Environmental conditions:

Temp. 23±2 °C R.H. 45%

Report No. 17(a)/42/2010

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Results

Sample no.	Bending Force, MPa		
	Top	Middle	Bottom
1	289.64	248.60	412.80
2	302.05	302.01	421.81
3	263.81	262.37	452.06
4	303.67	271.55	440.84
5	269.29	247.01	430.91
Average	**285.69**	**266.31**	**431.69**

Note that:

The test is performed according to ISO 14125:1998

Report No.17 (b) /42/2010

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Tersa St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel. / Fax: +202 -33867452 - NIS Tel: + 202- 37401113

Results

- The tensile and elongation parameters are related to the tensile test according to BS EN ISO 527-4&5:1997.

Sample no.	Tensile Strength MPa		
	Top	Middle	Bottom
1	388.00	369.35	319.74
2	411.49	346.59	447.85
3	357.57	392.14	309.23
4	381.77	287.65	389.15
5	200.00	327.86	437.21
Average	347.77	344.72	380.64

Sample no.	Maximum Elongation %		
	Top	Middle	Bottom
1	14.16	12.52	11.84
2	13.24	11.21	12.26
3	13.02	14.73	12.22
4	14.72	11.37	15.49
5	19.14	13.36	17.41
Average	14.86	12.64	13.84

Report No. 17 (C)/42/2010

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- **Summery**:-

1) Impact Energy =211.29 KJ/m^2

2) Bending Force =327.90 MPa

3) Mass Loss by ageing effect= 7.775-7.766 = 0.009 gm

4) Tensile Strength= 357.71 MPa

5) Maximum Elongation= 13.78 %

Report No. 17 (C)/42/2010

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Tersa St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel. / Fax: +202 -33867452 - NIS Tel: + 202- 37401113

TEST REPORT
تقرير اختبار

Report No: 61/ 43 /2010

- **NIS Lab** (اسم المعمل) : **Fire and Explosion Protection**
- **Issued For** (صادر الى) : **Project Upgrading of Cairo/Alex/Mattrouh Road**
- **Sample Specification** (وصف العينة) : Fiber Glass light Pole Samples of Length (10.5&12.5m) (Samples Test)
  - **Manufacturer** (اسم الشركة المنتجة) : ---------- United Industries Co., El Sewedy
  - **Code** (كود) : ----------
- **Reference Number of Test** (رقم الاختبار المرجعى) : 1141/52/ 43 /2010
- **Date of Receipt** (تاريخ الاستلام) : 5 May ,2010
- **Date of Test** (تاريخ الاختبار) : 13 May ,2010
- **Issue Date** (تاريخ الإصدار) : 13 May,2010

Approved by

Head of Laboratory
M. Aly
Prof. Dr. M. A. Hassan

NIS President
M. A. Shara
Prof. Dr. Eng. Ali E. Abuelezz

Page 1of 3

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وزارة الدولة للبحث العلمى
المعهد القومى للقياس والمعايرة

Tersa St., El Haram, Giza, Egypt - P.O.Box 136 Giza - Code 12211 - Tel. / Fax: +202 -33867452 - NIS Tel: + 202- 37401113

Report No: 61/ 43 /2010

Procedure

- Test method : ASTM D 635-06
- Five specimens were taken in accordance with the standard.
- The specimens were mounted horizontally in the specimen holder.
- The flame height was set at 20 mm .The samples were subject to flame for 30s.

The following parameters were recorded:-

- Burning rate mm/min

Results

Sample Name	Burning distance After first mark (25mm)	Burning time After first mark (25mm)	Burning rate (mm/min)	Burning rate (inch/min)
Fiber glass pole(1)	42 mm	384 s	6.56	0.26
Fiber glass pole(2)	0 mm	0 s	0	0
Fiber glass pole(3)	26.5 mm	384 s	4.14	0.16

- **The Samples showed rate of burning accepted in relation to the criteria of ASTM D 635-O6 .**
- **The results is related to the sample under test and given by the customer.**

M. Aly

Page 2of 2

Financial Data

In millions L.E.	Dec-010	Dec-011	H1-012
Income Statement (IS)			
Net Sales Value	12,902,020,386	15,169,203,711	7,127,480,575
٪ Growth		18%	
Balance Sheet (BS)			
Total Assets	13,944,165,584	13,975,411,617	13,462,470,426
Fixed Assets (NBV)	3,544,391,436	3,479,597,528	3,345,960,173
Working Investment (WI)	6,634,531,544	6,597,963,803	6,129,138,353
Working Capital (WC)	2,357,372,639	2,366,730,560	2,133,734,492
Gross Capital Employed	9,610,645,758	9,914,203,932	9,391,063,030
Financed By			
Shareholders Equity	5,341,311,846	5,574,485,627	5,250,740,188
Long Term Loans	1,293,219,698	1,023,478,176	878,398,165
Activity Ratios			
Current Ratio	1,32	1,32	1,29
Recievable Days	95	80	83
Inventory Days	122	96	108
Payable Days	38	31	34
Activity Ratios			
Net Bank Debt. / Equity Ratio	59%	51%	51%
Net Bank Debt. / Total Assets	23%	20%	20%
Working Capital / Net Worth	44%	42%	41%

Facilities & Capabilities

Machine List

fiber galss poles factory

S/N	Process	Machine	MC Code	Supplier	Factory	Origin
1	Poles injection	Spinning machine	PF-Pole-M14M	Pfleiderer	fiber factory	Germany
2	Poles injection	Applicator	APP-IP-8000	WIWA	fiber factory	Sweden
3	Poles accessories	Top band saw	TPS-OL260T	Siloma	fiber factory	Bulgaria
4	Poles accessories	Bottome band saw	BPS-IMAS35∅	Ittifak	fiber factory	Germany
5	Poles accessories	Door band saw	DPS-E99∅ 2-1		fiber factory	Turkey
6	Poles accessories	Cable hole driller	D-EC-O-3H		fiber factory	China

Machine Capacity

Fiber glass poles machinery has a capacity varing from 3 meter up to 15 meter length and the capacity is up to 22,000 poles / year

Mechanical Testing Facilities

S/N	Equipment	Measuring	Ser. No.0	Code No.	Origin	Place
1	Force transducer	Loading tolarence	YH39001	OCS-XZ-AAE	China	UIC
2	Ensile testing machine	Tensile strength				NIS
3	Ongation test machine	Elongation				NIS
4	Impact testing unit	Impact tolarence				NIS
5	Bending testing unit	Bending tolarence				NIS
6	Rate of burning unit	Burning tolarence				NIS

Tools for Modules & Tests

S/N	Equipment	Measuring	Ser. No.0	Code No.	Origin
1	Verner	Tool for multi testing	2218899	500-196	Japan
2	Micrometer	Thickness	293-561-30	MDC-25P	Japan
3	Ford Cup	Viscosity	0955561/20	406/4	SWE

Fiber glass poles standards

Standard	No
General requirements and dimensions	BS EN 40-2 :2004
Design and verification – verification by calculation	BS EN 40-3-3 :2003
Design and verification – specification for characteristic loads	BS EN 40-3-1 :2000
Design and verification – verification by testing	BS EN 40-3-2 :2000
Fiber-reinforced plastic composites-Determination of the in-plane shear stress/shear strain response, including the in-plane shear modulus and strength by the ±45 tension test method	BS EN ISO 14129:1998
Definitions and terms	BS EN 40-1-1 :1992
Passive safety of support structures for road equipment-Requirement, classification and test methods	BS EN 12767:2007
Determination of tensile properties	ISO 527-1
Determination of tensile properties	BS EN ISO 527-5:1997
Determination of tensile properties	BS EN ISO 527-4:1997
Determination of flexural properties	BS EN ISO 14125:1998
Bending test and impact test on Dynstat test pieces	DIN 53435
Determination the Izod pendulum Impact Resistance of Plastics	ASTM : D256-97
Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	ASTM :D635-06
Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine	ASTM : C131-03
Test Methods for DC Resistance or Conductance of Insulating Materials	ASTM:D257-99
Specification for Reinforced Thermosetting Plastic Poles	ASTM: D4923-01

Production System & Procedures

Steps of Production

1- Production of street lighting poles
2- Production of decorative poles
3- Production of solar systems poles
4- Production of sign boards poles
5- Production of telecommunication poles
6- Production of control systems (cameras) poles

Test Afterv Each Step

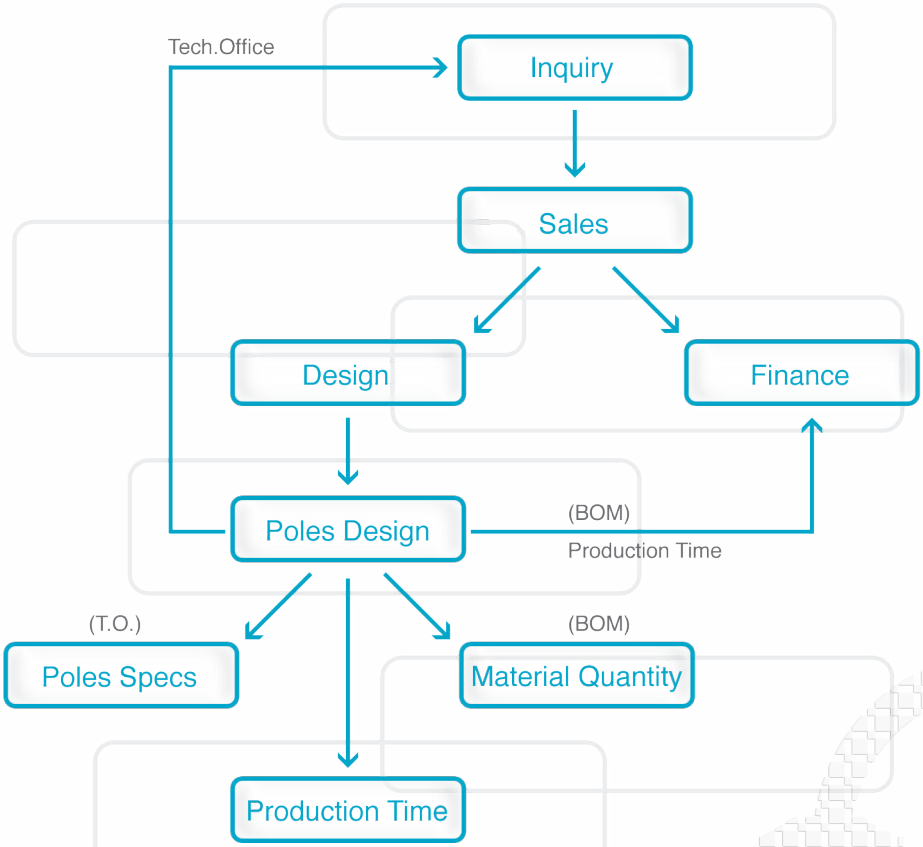
1- After pole injection step
- visual inspection
- color Ral number conformance
- pole weight

2- After pole accessories step
- pole length
- pole cable hole diameter
- pole door hole dimensions

3- Based and arms fixation step
- bases dimensions
- arms dimensions

Inquiry Procedures

1- Sales spill the Inquiry Info a pole Inquiry and other inquiries.
2- Sales translate the pole part to the poles design department .
3- Design department study the pole inquiry and make a suitable design .
4- Design department produce a specification sheet of the rquired pole .
5- Design department calculate a pole material cost including the needed quantity of each material and production limit for each production step .
6- Design department transfer quantity of material to the costing department.
7- Finance department calculate the production cost and transfer the data to the sales department.
8- Sales department prepare commercial and technical offer and send it to the customer.



Quality Control

1- Incoming material

- Polyester resin (color , Viscosity ,styrene content ,gel time and mechanical properties)
- Fiber glass (Visual , density and mechanical properties)
- Polyester Veil (weight and density)
- UV-absorption (color and solubility)
- Hindered amine light stabilizer (color)
- color pigment (color according to RAL NO)

2- Outgoing poles

- Total pole length
- pole weight
- pole color
- Door Hole dimensions
- pole cable hole dimeter

Material Data Sheets

Scope

POLYESTER RESIN

Material Properties

Polyester resin	Transparant
Density	1.1-1.3 g/cm^3
Viscosity	250-300 Mpa
Styrene content	36-41 %weight
Gel time at 25°C	6-10 min
Tensile strength	75 Mpa
Tensile modulus	3500 Mpa
Elongation	3.5-4.5%
Flexural strength	135min Mpa
Flexural modulus	3600 Mpa

Packing Condition

- Keep away from sunlight and heat
- Keep at temperature not excced 25°C

Scope

UV-ABSORPTION

Material Properties

Appearance	Slightly yellowish crystalline powder
Spacific gravity at 25°C	1.16
Melting point °C	47-49
Purity	99%
UV absorption wave length (nm): 250-350	
Solubility%	
- methyl alcohol: 1	- Ethyl alcohol: 3
- Acetone: 35	- MEK: 65
- Water: insolubile	

Packing Condition

- Keep away from sunlight and heat

Scope

HINDERED AMINE LIGHT STABILIZER (HALS)

Material Properties

Appearance	Slightly yellow liquid
Spacific gravity at 25°C	0.99
Ash content	0.1%
Purity	96%
Tensile strength	75 Mpa
- at 425mm % = 95 min	
- at 450mm % = 97 min	
- at 500mm % = 98 min	
solubility%	
- at 425mm % = 95 min	
- at 425mm % = 95 min	
- at 425mm % = 95 min	

Packing Condition

- Keep away from sunlight and heat

Scope

POLYESTER VEIL

Material Properties

Weight(g/sqm)	50±5
Thickness (mm)	36±0.05
Melting point °C	47-49
Tensile strength md, (lb)	8.4
Tensile strength xd, (lb)	7.4
Elongation md, %	6.7
Elongation xd, %	7.5
10% modulus(lb)	8.2
Air permeability (cfm)	445

Packing Condition

- Keep away from sunlight and heat

Scope

FIBER GLASS STITCH BONDED WOVENING ROVING MAT

Combination-900 GSM
(3.5mm tight Stitching) Width – 1000 mm

Material Properties

Type of Glass	E-glass
Compatibility	polyester resin
Density	910±5 gsm
Width(mm)	1000±10
Loss on ignition %	0.6-4
Moisture content %	≤0.2
Construction	
Wr 600 GSM	
Chop Strands 300 GSM	
Plain Weved (Tight Stitch Bonded)	
Ends	Trimmed
- at 425mm % = 95 min	
- at 425mm % = 95 min	
- at 425mm % = 95 min	

Packing Condition

- Keep away from sunlight and heat

Scope

FIBER GLASS FABRIC UNIDIRECTIONAL STITCHED WITH CHOPPED FIBERS

Material Properties

Type of Glass	E-glass
Compatibility	polyester resin
Density	972 ± 10% gsm
Width(mm)	1000±10
Moisture content %	≤0.2
Construction	
Wrap : 672 ± 5%	
stitching yarn : 32 ± 5 %	

Packing Condition

- Keep away from sunlight and heat

Scope

COLOR (PIGMENT PASTE)

Material Properties

Solid content	090 +/-5 %
Color strength	100 +/-5 %

Packing Condition

- Keep away from sunlight and heat

Material Acceptance Critria

- **Properties**
- **Packing condition**
- Test certificate corresponding to DIN 50045 in English (supplier should provide quality control certificate with test result for each batch as per DIN 50045 3.1in English language)

Poles Reference List

Item	Internal Projects name
1	Cairo – Alex High Way
2	Cairo – El Sokhna High Way
3	El Salam – Sharm El Shikh High Way
4	International Costal Road
5	Alex Cornish
6	Entrance of Upper – Red Sea High Way
7	American University – New Cairo
8	Marina – North Coast High Way
9	Borto EL Sokhna
10	Golf Borto Marina
11	Beverly Hills
12	Smart Village
13	El Mamora Cornish
14	El Montazah – Alex
15	Al Gazirah Club
16	Civil Aviation Club
17	El Kattamia Club – New Cairo
18	Aerial Hospital – New Cairo
19	Koria & Makkady Gulf – Sahl Hashish
20	Al Ain Al Sokhna Port
21	Green Plaza – Alex
22	Valencia Resort
23	Kaitbay Citadel
24	Pharos University
25	Zuez Cannel University
26	Alex University – Faculty of Pharmacy
27	Cairo Air Port
28	Marsa Alam Air Port
29	Ismaillia Air Port
30	Doaa El Sama Village – North Coast
31	LaPasha Village – Hergadah

Item	Export Projects name
1	King Abd EL Aziz Port – KSA
2	Jeddah Cornish – KSA
3	Different Projects In Morocco
4	Different Projects In Yemen
5	Different Projects In Ghana

ELSEWEDY POLES

FIBERGLASS POLES

Pre-Qualifications