



HDPE Telecommunication Pipes, Conduits, and Fittings

TELECOMMUNICATION PRODUCT CATALOGUE 2017





The Company

Alwasail Industrial Co. is one of the leading manufacturers of polyethylene pipes and fittings; mainly for irrigation, telecom, drinking water, firefighting networks and, gas and oil transport systems. It also produces rubber products and foam through its affiliate company Saudi Rubber Products (SRP).

Alwasail has grown to become one of the Saudi Arabia's largest manufacturers and suppliers of polyethylene products serving infrastructure and irrigation projects.



VISION AND MISSION

Alwasail's vision is to become the local market leader in High-Density Polyethylene (HDPE) pipe and fitting producer serving contractors and farmers with complete quality solutions. At the same time, expand its irrigation business to support landscape and farming requirements through the introduction of its newly produced or imported items via its expanding branch network.

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Alwasail HDPE Conduits

High-Density Polyethylene (HDPE) Conduits

Alwasail telecommunication conduits provide necessary security and protection for telecommunication and electrical cables against harsh and high-pressured environments.

The company also produces customized ducts in coils which provide convenience in installation and for meeting specific construction needs. Alwasail even provides sequential foot markings for ease of installation.

Advantages

- High tensile strength to endure heavy external loads.
- Long-term strength for increased life and performance
- Lower installation cost
- Resistance to corrosive chemicals and aggressive soils
- Moisture proof and watertight when fusion welded
- No biological growth
- Low resistance to pulled-in cable
- Color coding for easy identification





Conduit Standards

Alwasail polyethylene pipes are under International Standard.

HDPE Pipe: ISO, ASTMD, EN

Sizes: Manufactured up to 630 mm sizes at various standard dimension ration (SDR).

Pipes color: The color of the PE pipe is black mainly to provide high protection to degradation due to the UV radiation and so there is no limitation on the external use of the PE pipe as they are designed to withstand continuous solar heat for at least 50 years.

Pipes Length: Up to OD 125mm the PE pipes are available in coils of 100 meters standard length. Large diameters supplied in straight rods 12 meters long.

Available Customization upon Request : Length, Color, SDR Classes and Variations Thermal Expansion and Contraction: The coefficient of thermal expansion/contraction for PE Pipe is approximately 0.0002 mm/mm/°C

Raw Materials: Alwasail Polyethylene pipes are manufactured using: • HDPE - (PE 100) High density polyethylene (density = 0,950 g/cm³)

The above materials contain high-class chosen polymer and high-quality Carbon-Black to get long life under every working and weather conditions.

Each material has its application field, attractions and particular benefits depending on working and installation condition, equipment available and personal preference.

The raw materials used by Alwasail are carefully selected among the best available on the market. Produced by the polymerization of ethylene they are the outcome of long exhaustive research carried out by polymer manufacturers in company labs and specialized institutes. The result so far attained can be summed up in excellent stress-cracking resistance, tensile strength and weldability.

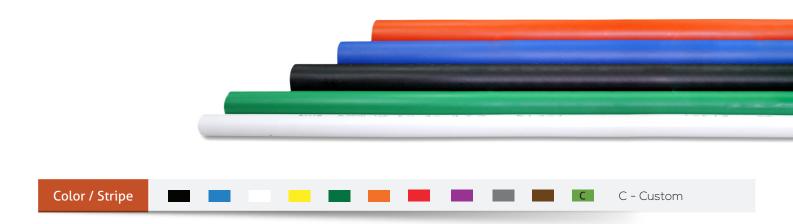
The molecular structure of polymers used to manufacture pipes guaranteed their mechanical characteristics with wide margins of safety for at least 400-500.000 h of uninterrupted service at the nominal pressure NP and a temperature of 20°C.

The average system lifetime of polymers is up to 50 years. Carrying out various pressure tests on pipe specimens examines the polymer strength.

In compliance with ISO Standards tests are performed at a fixed wall hoop stress s and temperature T and their duration recorded on logarithmic graphs (stress s, lifetime t, temperature T) obtaining a series of lines called regression curves. From such curves, which are different for each material, it is possible to predict a pipe lifetime or, after fixing the working period t and temperature T, trace back to the wall stress and therefore calculate a pipe wall thickness.

Colors and Dimensions

HDPE Conduits



									Pipe S	Series								
Nominal Outside		S 20			S 12.5			S 8	lard Din	Pension	S 6.3			S 5			S 4	
Diameter								June		lension	Katio					1		
Da (mm)		SDR 41			SDR 26			SDR 17		9	5DR 13.	6		SDR 11			SDR 9	
	Nominal Pipe ID mm	Wall Thickness mm	Approx. Weight kg/m															
16			0			0			0			0			0	12.4	1.8	0.084
20										16.4	1.8	0.107	16.2	1.9	0.112	15.4	2.3	0.133
25							21.4	1.8	0.137	21.2	1.9	0.144	20.4	2.3	0.171	19.4	2.8	0.200
32							28.2	1.9	0.187	27.2	2.4	0.232	26.2	2.9	0.272	24.8	3.6	0.327
40				36.4	1.8	0.227	35.2	2.4	0.295	34.0	3.0	0.356	32.6	3.7	0.430	31.0	4.5	0.509
50				46.0	2.0	0.314	44.0	3.0	0.453	42.6	3.7	0.549	40.8	4.6	0.666	38.8	5.6	0.788
63	59.4	1.8	0.364	58.0	2.5	0.494	55.4	3.8	0.721	53.6	4.7	0.873	51.4	5.8	1.050	48.8	7.1	1.260
75	71.2	1.9	0.457	69.2	2.9	0.675	66.0	4.5	1.020	63.8	5.6	1.240	61.4	6.8	1.470	58.2	8.4	1.760
90	85.6	2.2	0.643	83.0	3.5	0.978	79.2	5.4	1.460	76.6	6.7	1.770	73.6	8.2	2.120	69.8	10.1	2.540
110	104.6	2.7	0.943	101.6	4.2	1.430	96.8	6.6	2.170	93.8	8.1	2.620	90.0	10.0	3.140	85.4	12.3	3.780
125	118.8	3.1	1.230	115.4	4.8	1.840	110.2	7.4	2.760	106.6	9.2	3.370	102.2	11.4	4.080	97.0	14.0	4.870
140	133.0	3.5	1.540	129.2	5.4	2.320	123.4	8.3	3.460	119.4	10.3	4.220	114.6	12.7	5.080	108.6	15.7	6.110
160	152.0	4.0	2.000	147.6	6.2	3.040	141.0	9.5	4.520	136.4	11.8	5.500	130.8	14.6	6.670	124.2	17.9	7.960
180	171.2	4.4	2.490	166.2	6.9	3.790	158.6	10.7	5.710	153.4	13.3	6.980	147.2	16.4	8.420	139.8	20.1	10.100
200	190.2	4.9	3.050	184.6	7.7	4.690	176.2	11.9	7.050	170.6	14.7	8.560	163.6	18.2	10.400	155.2	22.4	12.400
225	214.0	5.5	3.860	207.8	8.6	5.890	198.2	13.4	8.930	191.8	16.6	10.900	184.0	20.5	13.100	174.6	25.2	15.800
250	237.6	6.2	4.830	230.8	9.6	7.300	220.4	14.8	11.000	213.2	18.4	13.400	204.6	22.7	16.200	194.2	27.9	19.400
280	266.2	6.9	5.980	258.6	10.7	9.	246.8	16.6	13.700	238.8	20.6	16.800	229.2	25.4	20.300	217.4	31.3	24.300
315	299.6	7.7	7.520	290.8	12.1	11.600	277.6	18.7	17.400	268.6	23.2	21.200	257.8	28.6	25.600	244.6	35.2	30.800
355	337.6	8.7	9.550	327.8	13.6	14.600	312.8	21.1	22.100	302.8	26.1	26.900	290.6	32.2	32.500	275.6	39.7	39.100
400	380.4	9.8	12.100	369.4	15.3	18.600	352.6	23.4	28.000	341.2	29.4	34.100	327.4	36.3	41.300	310.6	44.7	49.600
450	428.0	11.0	15.300	415.6	17.2	23.500	396.6	26.7	35.400	383.8	33.1	43.200	368.2	40.9	52.300	349.4	50.3	62.700
500	475.4	12.3	19.00	461.8	19.1	28.900	440.6	29.7	43.800	426.4	36.8	53.300	409.2	45.4	64.500	388.4	55.8	77.300
560	532.6	13.7	23.600	517.2	21.4	36.200	493.6	33.2	54.800	477.6	41.2	66.900	458.4	50.2	80.800	435.0	62.5	97.00
630	599.2	15.4	29.900	581.8	24.1	45.900	555.2	37.4	69.400	537.4	46.3	84.600	515.6	57.2	102.00	-	-	-

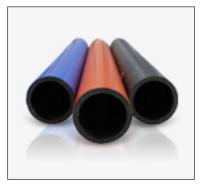


Smooth Wall Conduit

HDPE Conduit

Product Features and Attributes:

- Cables pre-installed in HDPE
- Standard wall thickness
- Available in sizes
- Sizes: 16-1200 mm
- Low-sliding friction to aid in the pulling and jetting of Micro-Guard and micro-cables
- High tensile strength material for longer pulling distances
- Variety of colors/ stripes for identification paralleling available
- Sequential-marked meters
- UV-formulated material for outside storage
- Complete line of fittings and accessories





Color Legend:

- Plane Color = (Conduit Color) + (Stripe)							
Size	SDR	Available Colors					
12 mm	11						
14 mm	7						
20 mm	11, 17						
20 mm	13, 17						
32 mm	11,26						
32mm	17						
32 mm	7,9						
50mm	11	— —					
50mm	17						

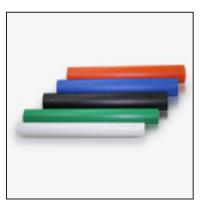
Grooved Wall Conduit

HDPE Conduit



Product Features:

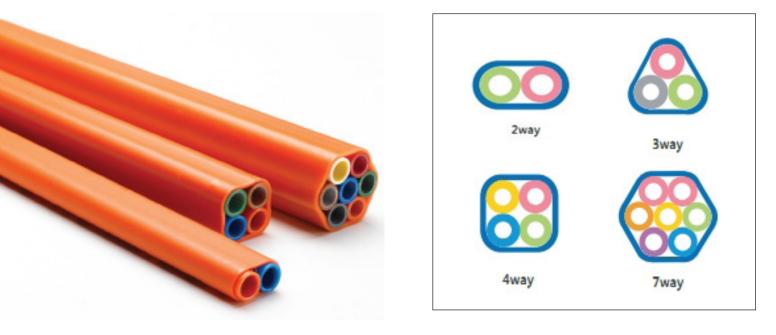
- Cables pre-installed in HDPE
- Standard wall thickness
- Pre-lubricated during assembly process
- Inside diameter groove; available in sizes as per request
- Sizes: 16-50 mm
- Low-sliding friction to aid in the pulling and jetting of Micro-Guard and micro-cables
- High tensile strength material for longer pulling distances
- Variety of colors/ stripes for identification paralleling available
- Sequential-marked meters
- UV-formulated material for outside storage
- Complete line of fittings and accessories





Bundled Conduit

Conduit-in-conduit



Material Specifications						
1 Ducts are manufactured with High Grade 100% Virgin HDPE						
2	Melt Flow Index	ASTM D 238-10 ASTM F2160	< 0.35 g/10min	Per Batch		
3	Density	ASTM D792-08 ASTM F2160	0.940 -0.958 g/cm ³	Per Batch		

Product Features:

- Cables pre-installed in HDPE
- Eliminating the need to pull cables
- Standard wall thickness
- Available in sizes
- Pre-lubricated during assembly process
- Inner conduit Sizes: 13-32 mm
- UV-formulated material for outside storage

- Sequential-marked meters
- Pre-installed pull line available (10 mm and larger)
- High tensile strength material for longer pulling distances
- Variety of colors/ stripes for identification paralleling available
- Low-sliding friction to aid in the pulling and jetting of Micro-Guard and micro-cables
- Complete line of fittings and accessories
- Inner surface can be grooved inside

Note: Custom options and other dimensions or specifications can be produced upon request

ltem	Row x Column	Size Outside/Inside Dimension (mm)	Outer Jacket wt. (mm)
1	Hex Array 7 Pipes	20/15	1.00-1.4
2	1x2	12/08	1.00-1.4
3	1x2	10/06	1.00-1.4
4	2x2	25/20	1.00-1.4
	2x2	20/16	1.00-1.4
	2x2	10/6	1.00-1.4
	2x2	28/24	1.00-1.4
5	Triangle array 3 pipes	28/24	1.00-1.4

Commitment to Quality

Quality Control and Assurance

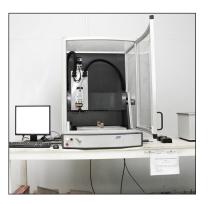


Alwasail aims to provide the best quality products and services to its customers and affiliates. The management and staff dedicate themselves to assure that their HDPE products give impact in helping customers achieving overall positive results.

Alwasail always continues to seek the highest level of customer satisfaction by performing planned and systematic actions. Establishing the culture with strict standards and guidelines develops the clients' confidence that processes and product lines satisfy their requirements for quality.

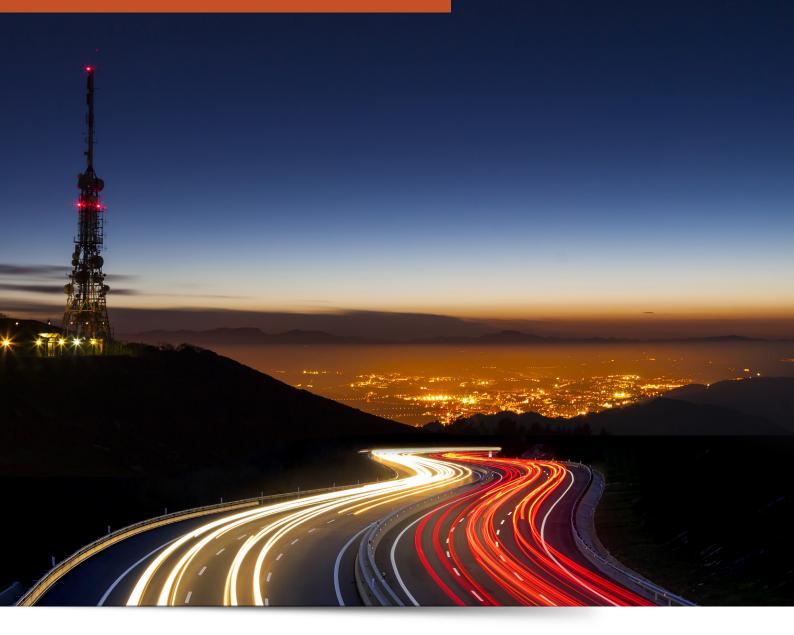
Quality Control Facilities:











Alwasail Telecommunication Pipes

HDPE Pipes

Alwasail has emerged as a renowned name in the piping industry in Saudi Arabia by offering a range of high-density polyethylene (HDPE) pipes. The company has over thirty years of experience in the manufacturing sector of HDPE products.

The company exports wide range of HDPE Pipes mainly used not only for telecommunication lines but also for irrigations, potable water, drainages, and gas infrastructure. Designed in compliance with ISO and DIN standards, our range finds application in varied industries like Agricultural, Water Sanitation, Firefighting, and chemical industries.

Alwasail pipes are also widely appreciated for high chemical resistance and better flow characteristic. The company also offers customized telecom pipes, fittings, and accessories.



Corrugated Pipe

HDPE Pipe

Manufactured from High-Density Polyethylene (HDPE) and is intended for internal duct applications. It's ideal for pulls under 1000 feet and is designed to reduce surface contact when pulling cable. Since this product is lightweight and offers maximum flexibility, installation in small or restricted locations is made easier.



Corrugated pipes are available in sizes 110-280 mm and a variety of colors. Custom options such as number of subducts is available to satisfy the requirements for most installations.



SIZE	DN/OD mm	Dim mm
1	110	97
2	170	150
3	227	197
4	286	250



Multiple Duct Pipes

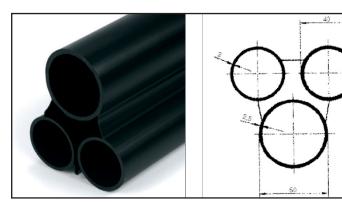
HDPE Pipes



Multiple Duct Pipe 3-Fold

Subducts:

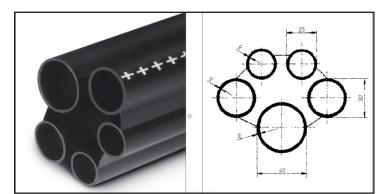
Article: Weight: Delivery packaging: 1 duct 50 x 2.5 2 ducts 40 x 2.0 101017 1.03 kg/m 800m on drum



Multiple Duct Pipe 5-Fold

Subducts:

Weight: Delivery packaging: 1 duct 40 x 2.0 2 ducts 32 x 2.0 101027 1.11 kg/m 1000m on drum



Double Pipe

HDPE Pipe

Product Features:

- Compact 2-way cables
- Reduces installation time
- Standard wall thickness
- Available in twin 40mm size
- Pre-lubricated during assembly process
- Manufactured from HDPE-100 pressure resin
- Low-sliding friction to aid in the pulling and jetting of Micro-Guard and micro-cables
- High tensile strength material for longer pulling distances
- Variety of colors and stripes for identification paralleling available
- Sequential-marked meters
- UV-formulated material that can withstand even stored outside the warehouse
- Complete line of fittings and accessories



Pipe with built-in rope/tape

HDPE Pipe

Product Features:

- Compact pipe with rope for cable pulling
- Reduces installation time
- Standard wall thickness
- Pre-lubricated during assembly process
- Manufactured from HDPE pressure resin
- High tensile strength material for longer pulling distances
- Variety of colors/ stripes for identification - paralleling available
- UV-formulated material that can withstand even stored outside the warehouse
- Complete line of fittings
 and accessories

SDR = Standard Dimension Ratio

L = Length

Ø = Diameter

Size (mm)	Max L (m)	Rope Ø (mm)						
20	500	3	500	3	500	3	500	3
32	2000	3-4	2000	3-4	2000	3-4	2000	3-4
50	300	3-4	300	3-4	300	3-4	300	3-4





Fittings

Couplings



Alwasail telecommunication couplings are used in connecting main ducts.

Product Features:

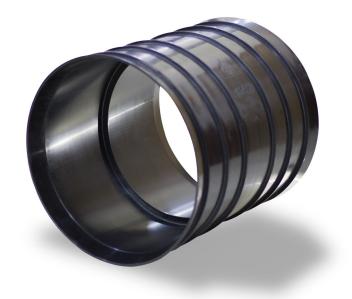
- Heavy duty
- Rubber sealed protected
- Easy to install/uninstall
- Compact design with minimum dimension
- Size can be customized upon request

Corrugated Pipe Coupling

Telecommunication corrugated pipe couplings are used in connecting corrugated HDPE pipes in telecommuniation systems.

Product Features:

- Heavy-duty
- Rubber sealed protected
- Easy to install/uninstall
- Compact design with minimum dimension
- Size can be customized upon request



Compression Fittings



Compression fittings are used for jointing two HDPE ducts together ensuring smooth and safe cable connection. Also used in connecting ducts in manholes which protect cable connection points during service life.

Product Features:

- Rigid Materials
- Easy to install / uninstall
- Sizes from 20mm up to 125mm
- UV resistant colored materials
- Rubber sleased protected
- Slip less design for dragging process

Base and Spacers



In telecommunication, pipe spacers are used as a multichannel system for all kinds of underground cable duct systems. They are designed with interlocking devices to also make an assembly of duct banks outside of trenches stable.





Size (mm)	Double	Single (Base)
20	2 rows x 8 ways	1 row x 8 ways
20	2 rows x 5 ways	1 row x 5 ways
32	2 rows x 4 ways	1 row s 4 ways
50	2 rows x 3 ways	1 row x 3 ways
110	1 row x 2 ways	base 1 way
160	1 row x 2 ways	base 1 way
200	1 row x 2 ways	base 1 way

End Caps



Protective caps gives protection to your valuable pipelines. Polyethylene plastic pipe caps are often referred to as a rubber cap because of their flexibility.

Product Features:

- Prevents damage during transportation or storage
- Available in sizes 50-160 mm
- UV-formulated material for outside storage
- To be fitted in ID or OD upon request

Color / Stripe												С	C - Custom	
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Alwasail Brochures

Available at www.alwasail.com









Approval Certificates

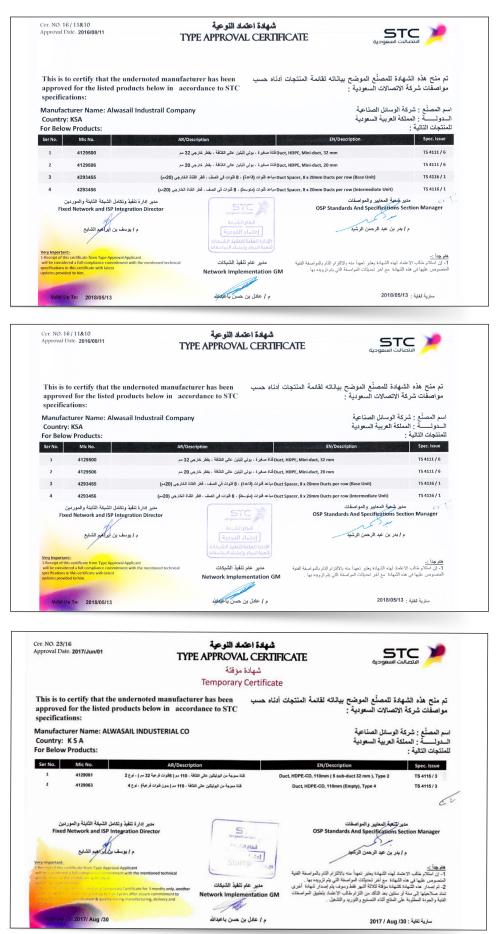
Alwasail is keen on keeping the most stringent accreditations, and certificates for its products as best practices and contractors require them.

The company strives to meet the highest quality control commitment to its customers by providing the highest quality products and services.

Mobily Type Approval Certificate

	Түре	<u>Approval</u>		CATE	
Ref. No.: 204 Date: 26/09/2016 Certificate No.: <i>Mobily/</i> 7	AC/HDPE/017				× ,
This certificate is valid	from:	26/9/2016	То	26/9/2018]
Name of the Manufactu	rer / Supplier: AL- W	ASAIL COMPANY			
Address of Manufactur	er/Supplier: Riyadh	11485 , P.O.Box : 2159	9, King Abdullah Ro	oad , Ext 10 ,	
Type of Approval (Provi	sional/ Periodic): Rer	newal			
Product(s) details:					
Product- Name / Code			Description		
This certificate is valid v	High density PE 100 Elongation at break Primary application		n test: 3% max ; De x OD; with 6mm PP	nsity:>o.930/cm3; Rope.	
Verified	Ву:	Verifie	d By:	١	erified By:
Azhar Khurshi Acting Executiv	e Manager	Wafi Moham Executive Manag FTTH Project Implem	er FTTH Rollout	Executiv	n S. Al Snayan /e Manager O&M /ns Quality Assurance
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Saudi Telecom Company (STC) Certificates



Alwasail Brochures

Available at www.alwasail.com











Sales Branches

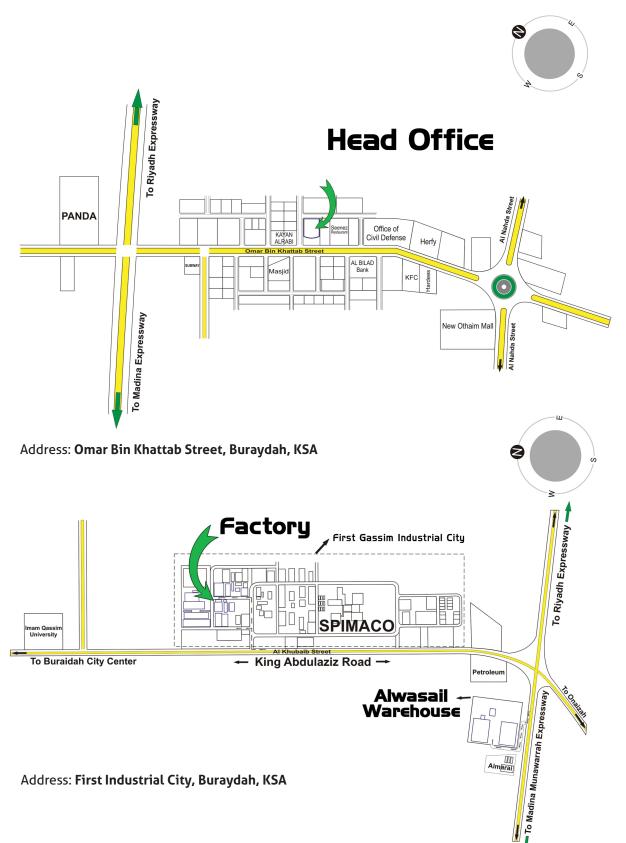
Phone Directory

Location	Р.О. Вох	Tel. No.	Fах No.	Mobile No. 1	Mobile No. 2
Buraidah (Head Office)	124	016-3821785 / 016-3821901	016-3811203	-	-
Buraidah (Main Branch)	124	016-3816658	016-3811306	0500561985	0505983631
Buraidah (Al Muwattah Branch)	124	016-3249419	016-3257076	0506390297	0506423598
Dammam	8893	013-8171375	013-8176347	0555206658	0506419643
Hail	2393	016-5435219	016-5322138	0506317256	0555836704
Hafouf		013-5825534	013-5825634	0506419643	-
Makkah		-	-	0503135068	0506351903
Jeddah		012-275735 / 012-6654536	012-274659 / 012-6657473	0506420914	0500526883
Jizan		017-3274880	017-3274883	0556523214	0506346456
Al Jouf		017-3274883	014-6246840	0550862202	-
Al Kharj		011-5501616	011-5510458	0506404317	0553175424
Madinah		014-8461493	-	0506415610	0553140279
Najran		017-5440611	017-5441986	0551350070	-
Onaizah		016-3624758	016-3610128	0506418763	0555638188
Riyadh Main Branch		011-4508431 / 011-4508432	011-4508422	0500590147	0539000617
Riyadh (Salam Street)		011-4114679	011-4111914	0506401979	-
Tabouk		014-4211389	014-4288374	0553148535	0506358753
Taif		012-7402179	-	0506403967	0500809917
Wadi Dawasir		011-7845051	-	0504492224	-
Zulfi		016-4224927	016-4232421	0554339071	-
Qarya Al Olaya		013-3861960	-	0555175623	-
Al Ola		014-8846636	-	0506348947	-
Khamis Mushait		017-2371622	017-2371260	0502964282	0506358753
Sajir		-	-	0555837887	-
Egypt		-	-	00201062900600	-
United Arab Emirates	48980	00971-4-2668040	00971-4-2668035	00971-4-506117612	00971-4-506506063
Export Department	21599	011-4508431-EXT 4423	011-4548057	0506375685	-

18 Electrical and Telecommunication Catalogue

Head Office and Factory

Maps





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Alwasail Industrial Company 2017

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International Marketing (Export Department) Mr. Abdul Hameed Telephone: + 966 11 4508435 Mobile: +966 506375685 E-mail: abdulhameed@alwasail.com **Alwasail Industrial Co. - Riyad (Local Branch)** P.O. Box 21599, Riyadh 11485, Saudi Arabia Tel: +966 11 4508431 Fax: +966 11 4508430

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For inquiries regarding our products and services, visit our website at www. alwasail.com for more information.