RAKduct®

Electric Conduit & Trunking

The Versatile & Comprehensive Electrical Conduit & Trunking System.

Download Mobile App

SMART INSTALLATION FRAMEWORK

P.O.Box 30739, Al Jazira, Al-Hamra, Ras Al-Khaima, United Arab Emirates
Tel: +971 7 2447128 | Fax: +971 7 2447129 | Toll Free: 800 RAKTHERM (72584376)
Email: sales@raktherm.com | marketing@raktherm.com | Website : www.raktherm.com

Join us

" COMMIT TO DELIVER
THE ULTIMATE
ELECTRIC CONDUIT
SOLUTIONS
WITH THE LATEST
INNOVATION
TECHNOLOGY
TO BE PRIDE
OF THE INDUSTRY
FROM
RAKTHERM
TO WORLDWIDE. "

Welcome to

RAKduct®

Chairman's Message

Gulf Plastic and Converting Industries, is a multifaceted manufacturing company based in the United Arab Emirates, supplying various engineering systems for the construction sector.

With over 60 years of experience in plastic pipes and fittings manufacturing in Saudi Arabia and Egypt, has launched it's first integrated PPR and PEX piping system for servicing a booming construction sector worldwide and in the Middle East under the brand name of RAKtherm Ultimate Piping Solutions, with 40,000 m2 manufacturing complex and corporate sales head quarter based in Ras Al Khaimah as the global operational hub for worldwide markets.

RAKtherm is a versatile and comprehensive system for delivery of water and other fluids, used in applications of pressurized hot and cold water as well as under-floor heating in modern residential, commercial, and industrial buildings.

We believe the quality of products and the support services provided at RAKtherm are our main advantage.

RAKtherm offers the widest range of PPR and it's complementary to PEX piping systems in the Middle East, North and South Africa, South and East Asia, and Europe, including multi-layer oxygen barrier pipes and aluminum composite pipes in addition to the conventional piping system. Now RAKtherm also manufactures UPVC piping system and RAK Duct electrical conduit trunking system.

This translated in a very wide range of products that are produced with state-of-the-art machineries from the most reputed resources, and very high-tech quality control system which ensures that this quality is always maintained in addition to well trained and highly motivated staff on all levels of the company that are always committed at any time.

Ali Hashim

Hashim Industry Group President

TABLE OF CONTENTS

RAKduct®
Electric Conduit & Trunking

RAKduct®
Electric Conduit & Trunking

ZERTIFIKAT ◆ CERTIFICATE ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD
Management Service

CERTIFICATE

The Certification Body
of TÜV SÜD Management Service GmbH

certifies that

RAKtherm®
Ultimate Piping Solutions

Gulf Plastic and Converting Industries

AlBlor Street
Ras Al Khaimah
United Arab Emirates

has established and applies
a Quality Management System for

Manufacture and Supply of
Plastic Pipes, Pipe Fittings, Valves,
Plumbing System Components and accessories.

An audit was performed, Order No. **70120082**.

Proof has been furnished that the requirements
according to

ISO 9001:2015

are fulfilled.

The certificate is valid from **2021-08-20** until **2024-08-19**.

Certificate Registration No.: **12 100 28568 TMS**.

Head of Certification Body
Munich, 2021-08-23

IAF DAkkS

TÜV SÜD Management Service GmbH • Zertifizierungsstelle • Ridlerstrasse 57 • 80339 München • Germany
www.tuev-sued.de/certificate-validity-check

TÜV®

GULF PLASTIC & CONVERTING INDUSTRIES

RAKtherm Gulf Plastic and Converting Industries, is the eminent high-end global manufacturer of integrated piping solutions under the flourishing arm of an illustrious Hashim Industry Group which was established in 1963, one of the regions' renowned business conglomerates. RAKtherm is the flagship division and pioneer of integrated **PPR**, **UPVC**, and **PEX** piping systems with corporate sales headquarter in Ras Al Khaimah, United Arab Emirates. In addition to the product offering are solvent cements, plumbing and bathroom accessories, sanitaryware system, and RAKduct electrical conduit system.

We are extensively supplying to major MEP projects worldwide through a network of strong stockists in more than 50 countries across GCC, North and South Africa, South and East Asia, and Europe. RAKtherm manufactures the worlds' most versatile and comprehensive piping systems engineered for 50 years' service-life. RAKtherm acquires more than 40 certifications from globally recognized certifying bodies from Germany, France, UK, and Saudi.

RAKtherm represents a team of engineering experts in construction technology exploring diligently to discover multitude of piping solutions in a manufacturing technical hub that is fully equipped with the most advanced German engineering machineries.

At RAKtherm, we also have specialized training facility, RAKtherm Global Academy that undertakes customized training with hands-on experience for engineers, planners, and plumbers.

For more information, please visit our website at www.raktherm.com

SYSTEM OVERVIEW

RAKduct®
Electric Conduit & Trunking

Backed by 6 decades of technical expertise, we are now elevating the technical performance of the traditional electrical tubings. Now, RAKduct is the versatile and comprehensive electrical conduit and trunking system that is engineered for higher level of precision performance, used in all electrical wiring installations in modern residential, commercial, and industrial buildings.

Manufactured Technically for Higher Level of Efficiency

For the safety and durability, the kind and quality of the material you will choose to shield your electrical wiring system is crucial.

Those that are technically manufactured for higher level of efficiency to serve its' purpose must considered; therefore, choose only RAkduct - the electrical conduit that is the most appropriate for such type of installation

The Unparalleled Advantages of RAKduct System:

- Engineered for higher level of performance to meet stringent requirements.
- Resistance to compression.
- Highly durable.
- Long-service life.
- Light weight and easy installation.
- Adaptable to building structures.
- Cost-effective.

RAKduct®
Electric Conduit & Trunking

Complete Range of UPVC Conduits. Trunks and Fittings,

RAKduct consists of robust UPVC conduits and trunking systems that can handle corners, bends, and straight runs along with branchings. The basic cross-section is a round conduit, however there are alternative shapes that can be used to conceal exposed installations that will blend in with the interior as well as traditional hidden installations.

RAKduct Conduit and Trunking system is versatile and comprehensive, it can be used for electrical power, telecommunications, and computer data cable wirings. Sizes cover all your requirements inside the buildings.

Easy and Smart Installation Technique,

RAKduct system is manufactured from uPVC materials, it can be easily cut, molded, bent, and linked in a number of ways. The installation doesn't require threading or specialized tools, which greatly improves efficiency. Due to its modest weight, manual handling challenges are also decreased. Therefore, it is cost-effective and time saving.

Worldwide Availability,

We make sure that RAKduct system will reach you. Our global operational hubs are available in more than 50 countries worldwide across GCC, North and South Africa, South and East Asia, and Europe.

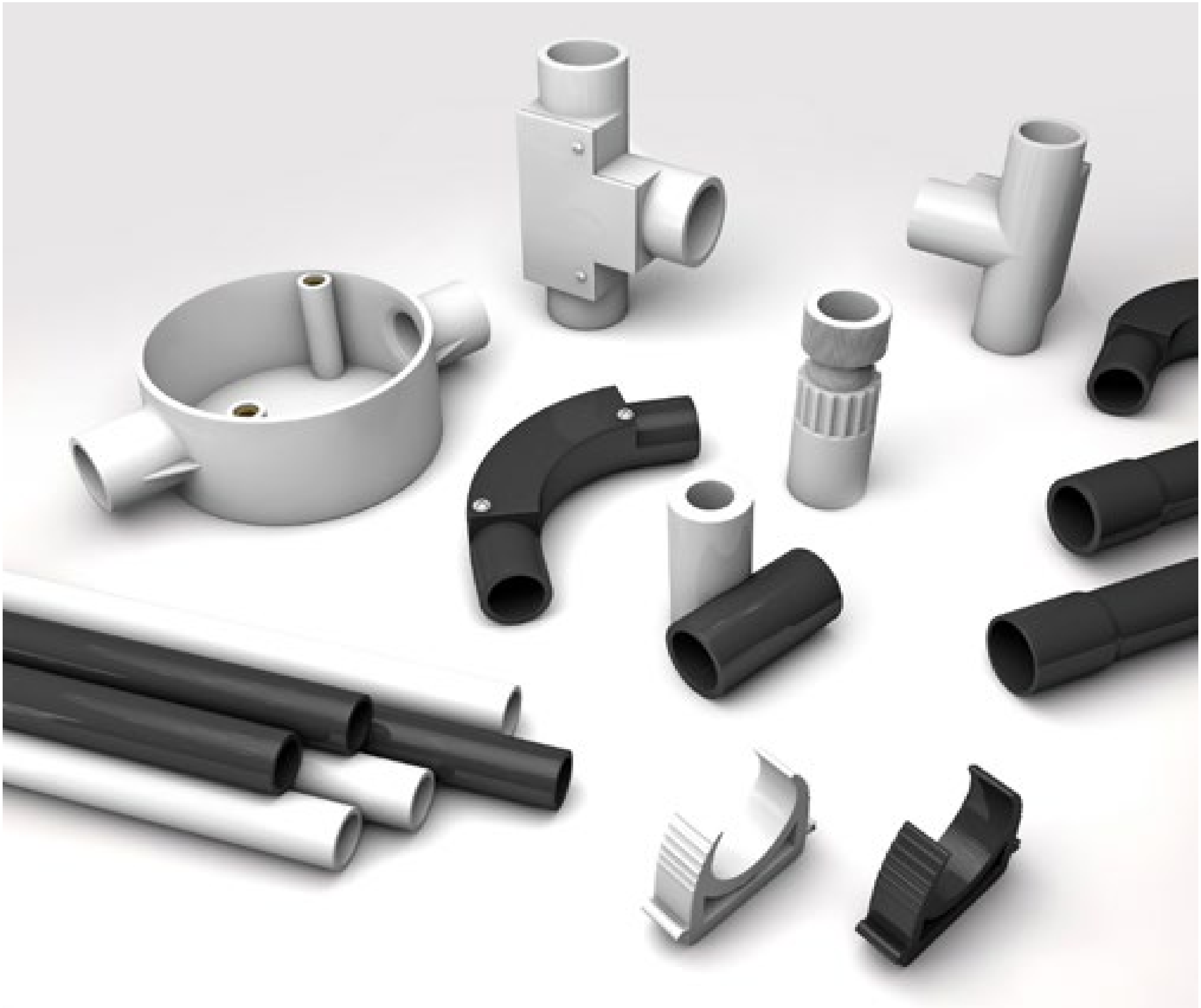
Support and Service Availability,

Our dedicated support team are available to assist you with any technical questions you may have and to offer assistance to ensure effective implementation with the design and installation.

RAKduct
Electric Conduit & Trunking

Research and Development for Quality, Reliability and Performance

RAKduct system components are continuously improved for improvements above and above the norms while adhering to BS and other standards, employing end-user feedback and interaction. RAKduct engineers use computer-aided design and analysis tools to explore emerging trends and features in components, assemblies, installation methods, packing, storage, and material handling. This keeps RAKduct on the cutting edge of technology and ensures that our product is delivered to you in the desired form, quality, and time frame. Modern production methods and close collaboration with top-tier tool, material, laboratory, and machinery suppliers ensure that not only is the quality level maintained but that advancements and improvements are made regularly.



RAKduct
Electric Conduit & Trunking

QUALITY ASSURANCE

As stated in our corporate mission statement, quality standards and policies of all products and processes guarantee that activities related to the ultimate level desired are implemented throughout the company through clear operating procedures, work instructions, forms, and records and documented in the system for future tracing when necessary. This ensures that no aspect of the product—whether it be a feature or service—is ever compromised and that all corporate and plant functions—whether they be commercial or operational—are meticulously defined and documented.

All operations follow the comprehensive quality system run and documented by RAKduct. In accordance with this, our production plant has received the ISO 9001 quality management system certification.

The quality control of RAKduct systems assures consistency in results and establishes a clear expectation that "the best" solution is being provided in the MEP sector.

PRODUCT GUARANTEE.

RAKduct always guarantees its' customers the highest level of quality standards. To support this, RAKduct provides a 10-year warranty from the date of purchase against manufacturing and design defects for all of its conduit and trunking network components.

RAKduct®
Electric Conduit & Trunking

CONDUIT
SYSTEM PIPES

RAKduct®
Electric Conduit & Trunking

SUPER HIGH IMPACT CONDUIT - HEAVY GAUGE

BLACK / WHITE				
Black Code	**White Code**	**Size (mm)**	**S (mm)**	**Length (m)**
CDH/B/16	CDH/W/16	16	1.6	2.9
CDH/B/20	CDH/W/20	20	1.8	2.9
CDH/B/25	CDH/W/25	25	1.9	2.9
CDH/B/32	CDH/W/32	32	2.5	2.9
CDH/B/38	CDH/W/38	38	2.5	2.9
CDH/B/50	CDH/W/50	50	3.2	2.9

SUPER HIGH IMPACT CONDUIT - MEDIUM GAUGE

BLACK / WHITE				
Black Code	**White Code**	**Size (mm)**	**S (mm)**	**Length (m)**
CDM/B/16	CDM/W/16	16	1.4	2.9
CDM/B/20	CDM/W/20	20	1.6	2.9
CDM/B/25	CDM/W/25	25	1.8	2.9
CDM/B/32	CDM/W/32	32	2.1	2.9
CDM/B/38	CDM/W/38	38	2.2	2.9
CDM/B/50	CDM/W/50	50	2.5	2.9

SUPER HIGH IMPACT CONDUIT - LIGHT GAUGE

BLACK / WHITE				
Black Code	**White Code**	**Size (mm)**	**S (mm)**	**Length (m)**
CDL/B/16	CDL/W/16	16	1.1	2.9
CDL/B/20	CDL/W/20	20	1.2	2.9
CDL/B/25	CDL/W/25	25	1.4	2.9
CDL/B/32	CDL/W/32	32	1.5	2.9
CDL/B/38	CDL/W/38	38	1.5	2.9
CDL/B/50	CDL/W/50	50	1.9	2.9

RAKduct®
Electric Conduit & Trunking

CONDUIT SYSTEM ACCESSORIES

RAKduct®
Electric Conduit & Trunking

HEAVY GAUGE COUPLING

BLACK / WHITE		
Black Code	**White Code**	**Size (mm)**
CPH/B/20	CPH/W/20	20
CPH/B/25	CPH/W/25	25
CPH/B/32	CPH/W/32	32
CPH/B/38	CPH/W/38	38
CPH/B/50	CPH/W/50	50

REDUCER

BLACK / WHITE		
Black Code	**White Code**	**Size (mm)**
RED/B/20-25	RED/W/20-25	20

SPRING CLIP SADDLE

BLACK / WHITE		
Black Code	**White Code**	**Size (mm)**
SCS/B/20	SCS/W/20	20
SCS/B/25	SCS/W/25	25
SCS/B/32	SCS/W/32	32
SCS/B/38	SCS/W/38	38
SCS/B/50	SCS/W/50	50

PRODUCT RANGE

RAKduct®
Electric Conduit & Trunking

SADDLE WITH SPACER BAR

BLACK / WHITE		
Black Code	White Code	Size (mm)
SWS/B/20	SWS/W/20	20
SWS/B/25	SWS/W/25	25
SWS/B/32	SWS/W/32	32
SWS/B/38	SWS/W/38	38
SWS/B/50	SWS/W/50	50

FEMALE THREADED ADAPTER

BLACK / WHITE		
Black Code	White Code	Size (mm)
AFA/B/20	FAD/W/20	20
AFA/B/25	FAD/W/25	25
AFA/B/32	FAD/W/32	32
AFA/B/38	FAD/W/38	38
AFA/B/50	FAD/W/50	50

MALE THREADED ADAPTER

BLACK / WHITE		
Black Code	White Code	Size (mm)
AMA/B /20	AMA/W/20	20
AMA/B/25	AMA/W/25	25
AMA/B/32	AMA/W/32	32
AMA/B/38	AMA/W/38	38
AMA/B/50	AMA/W/50	50

RAKduct®
Electric Conduit & Trunking

NORMAL BENDS LIGHT GUAGE

BLACK / WHITE		
Black Code	White Code	Size (mm)
BLG/B/20	BLG/W/20	20
BLG/B/25	BLG/W/25	25
BLG/B/32	BLG/W/32	32
BLG/B/38	BLG/W/38	38
BLG/B/50	BLG/W/50	50

NORMAL BENDS HEAVY GUAGE

BLACK / WHITE		
Black Code	White Code	Size (mm)
BHG/B/20	BHG/W/20	20
BHG/B/25	BHG/W/25	25
BHG/B/32	BHG/W/32	32
BHG/B/38	BHG/W/38	38
BHG/B/50	BHG/W/50	50

QUICK INSPECTION BEND

BLACK / WHITE		
Black Code	White Code	Size (mm)
INB/B/20	INB/W/20	20
INB/B/25	INB/W/25	25

PRODUCT RANGE

RAKduct®
Electric Conduit & Trunking

INSPECTION ELBOW

BLACK / WHITE		
Black Code	White Code	Size (mm)
INE/B/20	INE/W/20	25
INE/B/25	INE/W/25	25

INSPECTION TEE

BLACK / WHITE		
Black Code	White Code	Size (mm)
INT/B/20	INT/W/20	20
INT/B/20	INT/W/20	25

CIRCULAR LOOP BOXES

BLACK / WHITE	
Black Code	White Code
CLB/B	CLB/W

EXPANSION COUPLING

BLACK / WHITE		
Black Code	White Code	Size (mm)
CPE/B/20	CPE/W/20	16
CPE/B/25	CPE/W/25	20
CPE/B/32	CPE/W/32	25
CPE/B/38	CPE/W/38	32
CPE/B/50	CPE/W/50	38

CORRUGATED PVC-U CONDUIT

BLACK / WHITE		
Black Code	White Code	Size (mm)
CRV/B/16	CRV/W/16	16
CRV/B/20	CRV/W/20	20
CRV/B/25	CRV/W/25	25
CRV/B/32	CRV/W/32	32

PRODUCT RANGE

RAKduct®
Electric Conduit & Trunking

CONDUIT SYSTEM JUNCTION BOXES

RAKduct®
Electric Conduit & Trunking

TERMINAL BOXES - ONE WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C1W/B/0/20	C1W/W/0/20	20
C1W/B/0/25	C1W/W/0/25	25

THROUGH BOXES - TWO WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2S/B/0/20	C2S/W/0/20	20
C2S/B/0/25	C2S/W/0/25	25

BRANCH BOXES - U TWO WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2U/B/0/20	C2U/W/0/20	20
C2U/B/0/25	C2U/W/0/25	25

RAKduct®
Electric Conduit & Trunking

BRANCH BOXES Y - THREE WAY

BLACK / WHITE		
Black Code	Black Code	Size (mm)
C3Y/B/0/20	C3Y/W/0/20	20
C3Y/B/0/25	C3Y/W/0/25	25

ANGLE BOXES - TWO WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2A/B/0/20	C2A/W/0/20	20
C2A/B/0/25	C2A/W/0/25	25

TEE BOXES-THREE WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C3T/B/0/20	C3T/W/0/20	20
C3T/B/0/25	C3T/W/0/25	25

RAKduct®
Electric Conduit & Trunking

INTERSECTION BOXES - FOUR WAY

BLACK / WHITE		
Black Code	white Code	Size (mm)
C4X/B/0/20	C4X/W/0/20	20
C4X/B/0/25	C4X/W/0/25	25

THROUGH BOXES - FOUR WAY

BLACK / WHITE		
Black Code	White Code	Size (mm)
C4H/B/0/25	C4H/W/0/25	20
C4H/B/0/25	C4H/W/0/25	25

TANGENTIAL TEE

BLACK / WHITE		
Black Code	White Code	Size (mm)
CTT/B/0/20	CTT/W/0/20	20
CTT/B/0/25	CTT/W/0/25	25

PRODUCT RANGE

RAKduct®
Electric Conduit & Trunking

TANGENTIAL ANGLE

BLACK / WHITE		
Black Code	White Code	Size (mm)
CTA/B/0/20	CTA/W/0/20	20
CTA/B/0/25	CTA/W/0/25	25

EXTENSION RING

BLACK / WHITE	
Black Code	White Code
CEX/B/12.5	CEX/W/12.5
CEX/B/19	CEX/W/19
CEX/B/25	CEX/W/25
CEX/B/32	CEX/W/32
CEX/B/38	CEX/W/38
CEX/B/50	CEX/W/50

CIRCULAR LIDS

BLACK/WHITE		
Black Code	White Code	Size (mm)
CLD/B/1	CLD/W/1	

RAKduct®
Electric Conduit & Trunking

THROUGH BOXES-H FOUR WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C4H/B/1/20	C4H/W/1/20	20
C4H/B/1/25	C4H/W/1/25	25

TANGENTIAL TEE (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
CTT/B/1/20	CTT/W/1/20	20
CTT/B/1/25	CTT/W/1/25	25

TANGENTIAL ANGLE (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
CTA/B/1/20	CTA/W/1/20	20
CTA/B/1/25	CTA/W/1/25	25

RAKduct®
Electric Conduit & Trunking

CIRCULAR LOOP BOXES (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	Black Code	Size (mm)
CLB/B/1/20	CLB/W/1/20	20
CLB/B/1/25	CLB/W/1/25	25

TERMINAL BOXES - ONE WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C1W/B/1/20	C1W/W/1/20	20
C1W/B/1/25	C1W/W/1/25	25

THROUGH BOXES - TWO WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2S/B/1/20	C2S/W/1/20	20
C2S/B/1/25	C2S/W/1/25	25

RAKduct® Electric Conduit & Trunking

BRANCH BOXES - U TWO WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2U/B/1/20	C2U/W/1/20	20
C2U/B/1/25	C2U/W/1/25	25

BRANCH BOXES - Y THREE WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	Black Code	Size (mm)
C3Y/B/1/20	C3Y/W/1/20	20
C3Y/B/1/25	C3Y/W/1/25	25

ANGLE BOXES - TWO WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C2A/B/1/20	C2A/W/1/20	20
C2A/B/1/25	C2A/W/1/25	25

RAKduct®
Electric Conduit & Trunking

TEE BOXES - THREE WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	White Code	Size (mm)
C3T/B/1/20	C3T/W/1/20	20
C3T/B/1/25	C3T/W/1/25	25

INTERSECTION BOXES - FOUR WAY (WITH BACK OUTLET)

BLACK / WHITE		
Black Code	Black Code	Size (mm)
C4X/B/1/20	C4X/W/1/20	20
C4X/B/1/25	C4X/W/1/25	25

CONDUIT SYSTEM COMPLIMENTARY ITEMS

NYLON DRA TAPE

NYLON DRAW TAPE
Code
NDT10
NDT20
NDT25
NDT30
NDT50

HEAVY & LIGHT BENDING SPRING

HEAVY AND LIGHT SPRING		
Code	**Code**	**Code**
HBS20	HBS25	HBS32
LBS20	LBS25	LBS32
HBS38	HBS50	
LBS38	LBS50	

CUTTER

CUTTER
Code
CU1

RAKduct®
Electric Conduit & Trunking

SINGLE GALVANIZED STEEL GI BOX (MEDIUM / HEAVY DUTY)

Metal mounting Box GI Box	
Code	**Description**
SGB9 / 1	without terminal
SGB9 / 2	with steel Terminal
SGB9 / 3	with Brass washer Terminal
SGB9 / 4	with Brass Piller Terminal

DUAL GALVANIZED STEEL GI BOX (MEDIUM / HEAVY DUTY)

Metal mounting Box GI Box	
Code	**Description**
DGB11 / 5	without terminal
DGB11 / 6	with steel Terminal
DGB11 / 7	with Brass washer Terminal
DGB11 / 8	with Brass Piller Terminal

TWIN GALVANIZED STEEL GI BOX (MEDIUM / HEAVY DUTY)

Metal mounting Box GI Box	
Code	**Description**
TGB9 / 1	without terminal
TGB9 / 2	with steel Terminal
TGB9 / 3	with Brass washer Terminal
TGB9 / 4	with Brass Piller Terminal

PRODUCT RANGE

RAKduct®
Electric Conduit & Trunking

SINGLE SQUARE CORNER ACCESSORY BOX

White / Black	
Code	**Depth**
SSB/W/87X87K	32 mm

TWIN SQUARE CORNER ACCESSORY BOX

White / Black	
Code	**Depth**
TSB/W/87X147K	32 mm

PVC CEMENT

PVC CEMENT
Code
PVC/CMT

RAKduct®
Electric Conduit & Trunking

Material

UPVC material has proven its' high resilience in electrical and trunking applications even at the most extreme conditions, making it an ideal tubing system for protection and routing of electrical wirings.

Substantial Resistance to Compression

The UPVC material's structural flexibility and resistance to compression enable the material to withstand significant deformation without developing long-term distortion, even in walls, concrete, and underground spaces.

General Specifications of UPVC

Specific Gravity	: 1.4 – 1.45
Opacity	: < 0.2%
Tensile Strength	: min 36, N/mm
Water Absorption	: < 4mg / cm
Inflammability	: Non flame, propagating
Hardness	: D 78 (shore)

Applicable Standards and Regulations

Rigid U-PVC conduits and fittings are designed and manufactured to meet or exceed the following standards:

BS 4607	: Non-metallic conduits and fittings for electrical installations.
BS 6099	: Methods of protective conduit current.
BS EN 50086-2-1	: Rigid round conduits.
BS EN 50086-2-2	: Corrugated conduits.
BS 4662	: Metal boxes.
BS EN 50085	: Trunking & fittings.
ASTM E-662	: Optical smoke density of PVC.
ASTM D-638 & D-695	

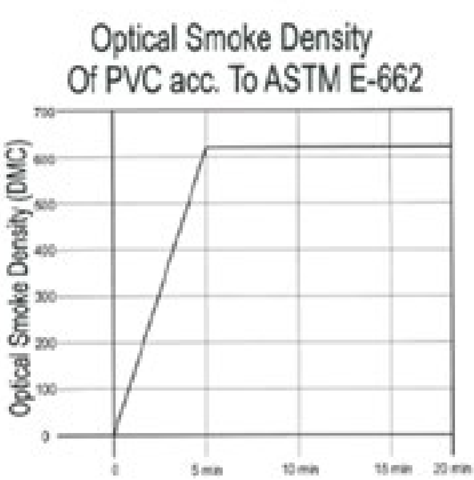
& D-790	: Mechanical properties of PVC.
ASTM D-1525	: Viscat softening temperature
DIN 8061	: Mechanical properties of PVC.
OHSAS 18001	: British standard for health and safety system.

Fire Resistance,

Driven by devastating incidents of fire and failure of safety in electrical wirings, engineers are obligated to ensure commercial and residential buildings are well-protected. Fire-rated conduit systems are designed to maintain circuit integrity under extreme temperature conditions. In particular, walls and ceiling must be restored to their original fire resistance class following installation of conduit system inside them. Moreover, conduits and fittings do not show increased brand gas toxicity, in the case of fire, thus lessening risk of developing dioxin or other harmful gases. (see Table 1).

Conduit systems made of UPVC are notoriously difficult to ignite. When the ignition source is removed, the burning will end. Due to its relatively low heat production, it is especially well suited for electrical wiring and the electrical protection of the insulated conductors and cables included therein.

For interior application, RAKduct Conduit and Trunking Systems are made. To ensure its tire-safe behavior, therefore, tremendous care must be exercised. When correctly applied and installed, RAKduct components have unique material features and additives that, when combined, fulfill the strictest standard for fire safety in buildings like BS 4607, make the system fire safe by being self-extinguishing and limiting flame propagation.



(Table 1)

TECHNICAL INFORMATION

RAKduct®
Electric Conduit & Trunking

Corrosion and Chemical Resistance,

The PVC-based material used in RAKduct conduit systems has exceptional resistance to most chemicals used in building construction and impressive corrosion resistance properties, ensuring a longer operating life. PVC, however, deteriorates more quickly in hydrocarbons and chlorine based hydrocarbons. Avoiding some compounds like acetone is advisable (see Table 2).

Chemical Resistance of PVC-U (Poly Vinyl Chloride). (Table 2)

Chemical Attack	Conc.%	C°	P.V.C.
Acetaldehyde, Aqueous	40	40	Φ
Acetic Acid	<10	40	+
Acetic Acid	10 - 85	60	+
Acetic Acid	85 - 95	40	+
Acetic Acid	> 95	20	+
Acetone	Trace	20	-
Ammonia, Aqueous	20	40	+
Ammonia Dry		60	+
Ammonium fluoride	2	20	+
Aniline	saturated	60	Φ
Arsenic Acid	<20	60	+
Beer		60	+
Benzene		20	-
Bleaching Agent	12.5	40	+
Borax Aqueous		60	+
Bromic Acid, Aqueous	10	20	+
Butane, Gaseous			+
Carbonic Acid, Dry		40	+
Carbonic Acid, Dry Or Humid		40	+
Carbon Tetrachloride		20	-
Carbon Disulphide		20	Φ
Caustic Soda	>40	40	+
Caustic Soda	40-60	60	+
Cement, Dry		20	+
Chloric Gas, Dry Or Humid		20	Φ
Chloric Water		20	Φ
Chlorinated Hydrocarbons			-
Chlorosulfuric Acid	100	20	Φ
Chromium Acid, Aqueous	<50	50	+
Chromium Acid	20		Φ
Chromosulfuric Acid	20		Φ
Citric Acid	All	60	+
Cresol, Aqueous	<90	45	Φ
Cupric Sulfate	All	60	+
Diesel Oil		20	+
Developer (Phot.)		40	+
Dextrine	18	20	+
Ester			-
Ethyl Alcohol, Aqueous	<40	40	+
Ethyl Ether		20	-
Fatty Acid		20	+
Fixing Bath		40	+
Fluorochlorinated Hydrocarbons			+
Formaldehyde, Aqueous	All	30	+
Formic Acid	< 30	40	+
Formic Acid	Conc.	20	+
Glycerine, Aqueous		60	+
Hydrochloric Acid	Weak	40	+
Hydrochloric Acid	Conc.	60	+
Hydrofluorisilic Acid, Aqueous	<32.5	60	+
Hydrofluoric Acid, Aqueous	< 40	20	+
Hydrogen	100	60	+
Hydrogen Peroxide	20	20	+
Hydrogen Sulphide, Dry Or Humid		60	+
Hydrogen Sulphide, Aqueous		40	+
Ketone			-
Lactic Acid, Aqueous	1	40	+
Methyl Alcohol, Aqueous	All	40	+
Mineral Oil		20	+
Nitric Acid	< 30	40	+
Nitric Acid	30-45	45	+
Nitric Acid	50-60	20	+
Nitric Gases, Dry Or Humid	Weak	60	Φ
Oil And Fats (Vegetable),(Organic)		60	+
Oxalic Acid, Aqueous	10	40	+
Oxalic Acid, Aqueous	Conc.	60	+
Oxygen		60	+
Ozone		20	+
Permanganate	< 6	20	+
Petrol, Normal / Premium		60	+
Petroleum		20	+
Phenol, Aqueous	< 90	45	Φ
Phosphoric Acid, Aqueous	< 30	40	+
Phosphoric Acid, Aqueous	< 30	60	+
Potash Lye, Aqueous	40	40	+
Potash Lye	40-50	60	+
Potassium Sodium Lye	< 40	40	+
Propane, Liquid			+
Salt Solution	All	40	+
Seawater		-40	+
Sulfur Dioxide, Aqueous	All	40	+
Sulfuric Acid, Dry Or Humid	All	60	+
Sulfuric Acid, Aqueous	< 40	40	+
Sulfuric Acid, Aqueous	40-80	60	+
Sulfuric Acid, Aqueous	80-90	40	+
Sulfuric Acid, Aqueous	90-96	20	+
Sodium Chloride Solution	Weak	40	+
Tartaric Acid	10	60	+
Urine		40	+
Water		60	+
Xylene	100	20	-
Zinc Chloride, Aqueous	All	60	Φ
Zinc Sulfate Aqueous	Weak	60	+

All given values refer to standard test samples under standardized laboratory conditions. Design and specifications subject to change without notice.

(+) The parts are resistant against chemical attack & (Φ) The parts are partially resistant against chemical attack & (-) The parts are not resistant .

RAKduct
Electric Conduit & Trunking

1. Basic Considerations:

The size of conduit or trunk and fitting appropriate for the application of the installation can be determined with table 3.

It is Important to conform to the recommended capacity of the trunks and conduits and fitting in terms of number and sizes of wires to be installed. This can be determined by calculating the sum of all the effective cross-sectional areas (factors) of wires to be Installed in the conduit, as per Table 3, then choosing the appropriate size of conduits and fittings accordingly, so that it does not exceed the assigned effective cross-sectional area factor in Table 3a, b. c, e, 8, f. Morever. it must be taken into account that the conduit runs should be classified into straight joint-free runs not exceeding 3 meters on the one hand, and straight runs exceeding 3 meters. Morever, runs with bends or joints of any length should be treated in the same manner as runs exceeding 3 meters.

For straight installations without elbows or pints under 3 meters in length, the effective cross-sectional area outlined in Table 3a, b. c. e, & f are the only factors to take into consideration. As for installations with bends, or Joints, then their number Influences the effective crass-sectional area of conduit and associated fittings to be used according to the data in table 2d. As for joints, they can be treated as one bend for every two joints passed.

2. Other Considerations:

Actual (as opposed to theoretical) size of wires and conduit installations.

- Ease of working areas and space limitations.
- Electrical Influences caused by closely Installed wires inside the conduits and fittings, such as flux and current loads of adjoining wires.
- The use of large turning radiuses, where possible, to avoid cable damage and ease of installation and maintenance.
- The expansion of conduits in extreme temperature variation, by using expansion joints on the conduit mounting system, in addition to keeping areas of expansion and contraction clear for expansion of the conduit system.

Table 3

A	Cable factors for short straight runs	
Type of conductor	Conductor cross-section area (mm²)	Factor
Solid	1	22
	1.5	27
	2.5	39
Stranded	1.5	31
	2.5	43
	4	58
	6	88
	10	146

B	Conduit factors for short straight runs
Conduit dia. (mm)	Factor
16	290
20	460
25	800
32	1400
38	1900
50	3500

C	Cable factors for long straight runs or runs incorporating bends	
Type of conductor	Conductor cross-section area (mm²)	Factor
Solid or Stranded	1	16
	1.5	22
	2.5	30
	4	43
	6	58
	10	105

D	Cable factors for trunking	
Type of conductor	Conductor cross-section area(mm²)	Factor
Solid	1.5	7.1
	2.5	10.2
Stranded	1.5	8.1
	2.5	11.4
	4	15.2
	6	22.9
	10	36.3

E	factors for trunking
Dim. of trunking (mm)	Factor
50 x 37.5	767
50 x 50	1037
75 x 25	738
75 x 37.5	1146
75 x 50	1555
75 x 75	2371
100 x 37.5	1542
100 x 50	2091
100 x 75	3189
100 x 100	4252

F	Conduit factors for runs incorporating bends																			
Length of run, m.	Conduit diameter,(mm)																			
	Straight				One bend				Two bends				Three bends				Four bends			
	16	20	25	32	16	20	25	32	16	20	25	32	16	20	25	32	16	20	25	32
1.0	Covered by Tables A , B				188	303	543	947	177	286	514	900	158	256	463	818	130	213	388	692
1.5					182	294	528	923	167	270	487	857	143	233	422	750	111	182	333	600
2.0					177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529
2.5					171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474
3.0					167	270	487	857	143	233	422	750	111	182	333	600				
3.5	179	290	521	911	162	263	475	837	136	222	404	720	103	169	311	563				
4.0	177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529				
4.5	174	282	507	889	154	250	452	800	125	204	373	667	91	149	275	500				
5.0	171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474				
6.0	167	270	487	857	143	233	422	750	111	182	333	600								
7.0	162	263	475	837	136	222	404	720	103	169	311	563								
8.0	158	256	463	818	130	213	388	692	97	159	292	529								
9.0	154	250	452	800	125	204	373	667	91	149	275	500								
10.0	150	244	442	783	120	196	358	643	86	141	260	474								

RAKduct®

Electric Conduit & Trunking

The Versatile & Comprehensive Electrical Conduit & Trunking System.

Download Mobile App

SMART
INSTALLATION FRAMEWORK

P.O.Box 30739, Al Jazira, Al-Hamra, Ras Al-Khaima, United Arab Emirates
Tel: +971 7 2447128 | Fax: +971 7 2447129 | Toll Free: 800 RAKTHERM (72584376)
Email: sales@raktherm.com | marketing@raktherm.com | Website : www.raktherm.com

Join us