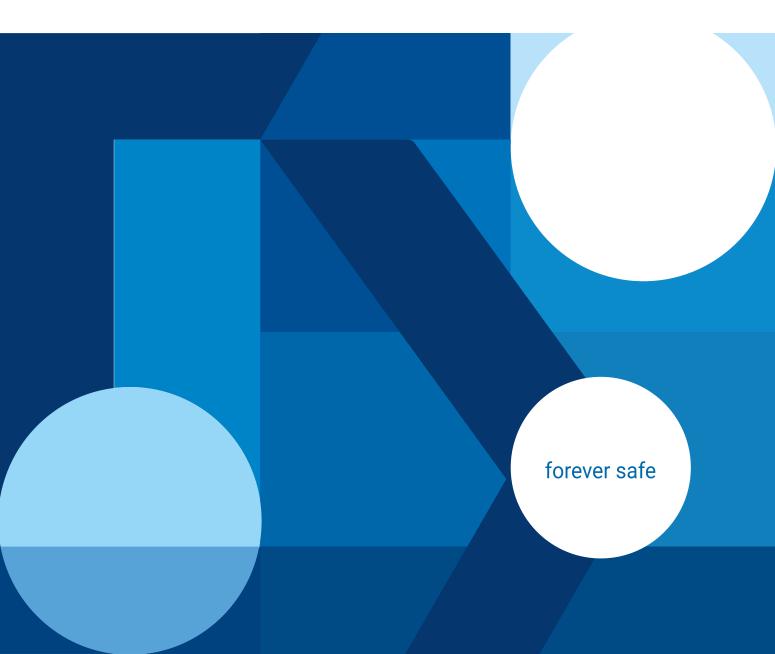
K KOUVIDIS

CATALOGUE

2021

Plastic piping systems for cable management and protection







"In the meanwhile, we remain faithful to our principles, choosing the paths of innovation, quality and above all safety for people and the environment."



Dear partners,

Continuing our journey in the world of plastic piping systems, I feel indebted to dedicate this success to the people who led us here. To all of you who have proven your trust to our products every single day and to our 100+ employees who are the heart of our company.

Despite the negative effects of coronavirus pandemic to global economy, we managed to stay focused on continuous development, innovation and new challenges. We invested in new advanced mechanical equipment and we launched new technologies in plastic piping systems upgrading the installer's work. Further, we entered the supply chain management industry, by establishing our new subsidiary company KLS KOUVIDIS Logistics.

During the next months, we will move to our brand new premises, increased by 7.000m², which will drive us to new investments, new products and new career opportunities for people of the local society.

In the meanwhile, we remain faithful to our principles, choosing the paths of innovation, quality and above all safety for people and the environment.

In this way we mark the evolution in the world of plastic piping systems.

Konstantinos Kouvidis CEO



continuous development

- 3 Subsidiaries Companies in Greece, Cyprus and Germany
- 18 Fully automated production lines
 - 4 Distribution centers (Heraklion, Athens, Thessaloniki, Nicosia)

innovation

23 Patent degrees

sustainability

- 100% Of our consumed energy comes from RES
 - 20% Less CO² emissions
 - 50% Reduced waste packaging material for new conduits

our people

100+ People that distinguished us as one of the 25 best workplaces in Greece (2017)

quality

- Years of implementation ISO 9001, ISO 14001, ISO 45001 (Bureau Veritas)
- Recognized product certification bodies(VDE, Bureau Veritas)

Milestone projects

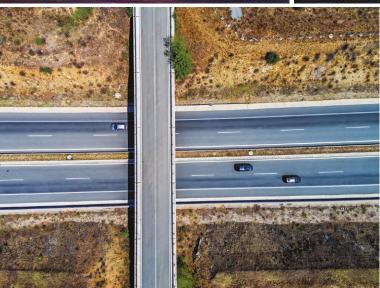
14 Fraport Airports, Greece
Crete-Peloponnese electrical interconnection project
Faliriko Bay, Greece
Piraeus III Floating Dock, Greece
One & Only Resort, Greece
Athens, Underground Railway extension
Thessaloniki, Underground Railway
Leroy Merlin, Portugal
Solar Power Plants, Karaman & Nigde, Turkey

Costa Navarino, Greece
Marina of Ayia Napa, Cyprus
Egnatia Motorway, Greece
Athens, Tramway network extension
Six Student Residence, Cyprus
Robinson Club Hotel, Greece
Embassy of Luxembourg, Greece
Afi Park Mall, Brasov
One Mircea Eliade, Bucharest













Milestones 2020 - 2021



New upcoming premises

Our brand-new premises, increased by 7.000m², will be completed during 2021, marking a new era for our company. **New investments** in advanced mechanical equipment, **new innovative products** and **new career opportunities** will be soon available.

New certification body

Focusing on continuous improvement, KOUVIDIS has recently concluded a new collaboration with the certification body **BUREAU VERITAS**, for the supervision of its Quality Management Systems **ISO 9001, ISO 45001 & ISO 14001.**

KOUVIDIS has applied the above three quality management systems since 2006.









KOUVIDIS enters to the supply chain management industry

With just over 40 years of successful presence in the plastic conduits industry, KOUVIDIS enters to the supply chain management industry, establishing its new 100% subsidiary, **KLS KOUVIDIS Logistics**.

New technologies of plastic piping systems

Applying the technology of multilayer conduits, we have developed, over the last year, new innovative solutions to provide even more safety and flexibility to the installer's work. The manufacturing of **double structured wall conduits** in small diameters, the development of a **new anti-electromagnetic technology** and the use of **color marking** for the identification of networks, are some of our latest innovations, that you will find below.





PRODUCT INDEX

	CONDUR	CONFLEX	MEDISOL	MEDIFLEX	SILCOR	SIFLEX	CONDURHE	CONFLEX HF	MEDISOL HF	
Classification Code	44411	44412	33411	33412	23411	22412	44441	44442	34441	
PROPERTIES	Steam Can El Service		th to Resource		THE REAL PROPERTY.		STATE OF STREET		Coart In Street)
Compression strength (Nt)	1250	1250	750	750	320	320	1250	1250	750	
Impact strength (J)	6	6	2	2	2	1	6	6	6	
Minimum temperature (°C)	-25	-25	-25	-25	-25	-25	-25	-25	-25	
Max temperature (°C)	+60	+60	+60	+60	+60	+60	+120	+120	+120	
Resistance to bending	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	
INSTALLATIONS										
Exposed	•	•	•	•	•	•	•	•	•	
Concealed (cavity walls)	•	•	•	•	•	•	-	-	•	
Concealed (underplaster)	•	•	•	•	•	•	•	•	•	
Concrete	•	•	•	•	-	-	-	_	-	
Concealed (lavaplaster)	•	•	•	•	-	-	-	-	-	
Subfloor/Subceiling	•	•	•	•	•	•	•	•	•	
Outdoor	•	•		•	-	-	•	•	•	
Buried underground	•	•	•	•	-	•	-	-	-	
Wood	•	•	•	•	•	•	•	•	•	
Page	20	21	22	23	24	25	34	35	36	

MEDIFLEX HF	MEDISOL AM	MEDIFLEX AM	MEDISOL AMHF	MEDIFLEXAMHF	GEONFLEX bar	GEONFLEX	GEOSUB bar	GEOSUB	DUROFLEX PLUS	SUPERFLEX
33442	33411	33412	34441	33442	N750	N750	L450	L450	33332	22332
	THE THE STREET		to story to 8 course							
750	750	750	750	750	750	750	450	450	750	320
2	2	2	6	2	Normal	Normal	Light	Light	2	1
-25	-25	-25	-25	-25	-5	-5	-5	-5	-15	-15
+120	+60	+60	+120	+120	+90	+90	+90	+90	+105	+105
Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Pliable	Pliable
•	•	•	•	•	_	-	-	-	•	-
•	-	-	-	_	_	-	_	-	•	•
•	•	•	•	•	-	-	-	-	•	•
-	-	_	-	-	•	•	-	-	•	_
-	-	-	•	-	•	•	-	-	•	_
•	•	•	-	_	_	-	-	-	•	•
•	•	•	•	•	_	-	-	-	•	-
-	-	-	-	-	•	•	•	•	•	-
•	•	•	•	•	_	-	-	-	•	•
37	50	51	52	53	62	63	64	65	45/74	44/72

The above applications are only recommendations due to the technical specifications of KOUVIDIS products.

National or local restrictions and prohibitions must always be considered.

- Not recommended Solution

Recommended Solution

Best choice acc. to the manufacturer

LEGEND



Nominal outer diameter (mm)

Nominal inner

diameter(mm)



Bundles of rigid conduits (m)



KOUVIDIS DL HIGH SPEED TECHNOLOGY Double layer technology makes the cable insertion faster and easier



Bigger Packing for fittings (pieces)



Conduits with anti-electromagnetic technology



Double wall conduits loaded on a truck (m)



Low smoke product



Packing (m/bundle)

Packing

(m/coil)



Dimensions (mm)



Heavy Type (According to EN 61386.01, compression strength)



Packing (pieces/box)

Bars (m))



Product with extra UV Stability



Medium Type (According to EN 61386.01, compression strength)



Ammund

Bar weight (kg)



antimicrobial technology

Product with 99%

of -45°C

Halogen free product



Light Type (According to EN 61386.01, compression strength)



Coil weight (Kg)



High impact strength in extreme temperatures



Normal

Installation Boxes



Bundle weight (kg)



Double wall technology. Conduits with double walls make cable introduction faster and easier



(According to EN 61386-24, impact test)



Coils of pliable conduits on pallet (m)

0

Light (According to EN 61386-24, impact test)

INDEX

BUILDING INSTALLATIONS (MADE	FROM PVC)	WITH ANTIMICROBIAL TECHNOLOGY	
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MEDIFLEX pliable conduit	23	MEDIFLEX AMHF pliable conduit	 53
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DONO! LEX! LOS colladit	+5	Installation boxes & Fittings	78

Tried

KOUVIDIS has over 40 years of experience at the production of plastic conduit systems for cable management & protection while it was the first Greek company to introduce the heavy type conduits into the Greek market at the early 90's.

Awarded

CONDUR - CONFLEX conduit system has been awarded by the Greek Marketing Academy with the "Branded Industrial Product" Silver Award for its 30+ years of successful presence in the Greek and selected foreign electrical materials market.



Trusted

The heavy type CONDUR® - CONFLEX® conduit system has totally replaced metal conduits, it has been installed in the largest Greek construction works and it counts zero non-conformities.

1

Plastic conduit systems made from PVC

for outdoor/indoor installations of various mechanical strength in buildings







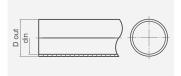


Heavy Type (1250Nt)











Standards: EN 61386.21

Assembled with

CONDUR Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip







Patents Protected 1009810, EP2698792

All product's certificates are available at www.kouvidis.com

CONDUR® IAS rigid conduit

44411

Properties		Class
Resistance to compression	1250Nt/5cm	4
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Ageing resistance	UV stabilized >10 years
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

+ Engraved with laser printing and packed with safety straps in blue color 100% recyclable polyethylene film.

Ideal for outdoor exposed installations which require increased safety measures and high mechanical requirements such as civil engineering (industrial buildings, infrastructure projects) and electric power stations. It doesn't attract rodents and is the ideal solution for outdoor installations through its exceptional resistance to UV radiation. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

Туре	Part number	D out	(min) ⊲din →	000	kg	(m)
Ø16	1001016	16	12.1	30	3,31	6000
Ø20	1001020	20	16.0	30	4,52	5460
Ø25	1001025	25	20.9	15	3,08	2400
Ø32	1001032	32	27.4	15	4,20	1755
Ø40	1001040	40	35.1	9	3,41	1071
Ø50	1001050	50	44.7	9	4,51	702
Ø63	1001063	63	57.2	9	6,58	396

Heavy Type (1250Nt)











Standards: EN 61386.22

Assembled with

CONDUR Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip









Patents Protected 1009810, EP2698792

CONFLEX® IAS pliable conduit

44412

Properties		Class
Resistance to compression	1250Nt/5cm	4
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Ageing resistance	UV stabilized >10 years
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

→ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative blue color label.

Ideal for installations in concrete and outdoor exposed installations which require increased safety measures and high mechanical requirements such as civil engineering (industrial buildings, infrastructure projects) and electric power stations. Ideal solution for outdoor installations through its exceptional resistance to UV radiation. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

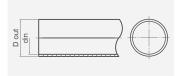
Туре	Part number	Dout	min din		kg	(m)
Ø16	2001016	16	10.1	50	4,21	3600
Ø20	2001020	20	13.5	50	5,57	3200
Ø25	2001025	25	17.8	25	3,96	1800
Ø32	2001032	32	23.6	25	5,40	1400
Ø40	2001040	40	30.7	20	5,39	880
Ø50	2001050	50	39.0	20	7,05	400
Ø63	2001063	63	51.5	20	10,00	360

Medium Type (750Nt)











Standards: EN 61386.21

Assembled with

MEDISOL Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

All product's certificates are available at www.kouvidis.com

MEDISOL® IAS rigid conduit

33411

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Ageing resistance	UV stabilized
Antistatic Technology	Protection against static electricity

+ Engraved with laser printing and packed with safety straps in red color 100% recyclable polyethylene film.

Ideal for indoor exposed installations which require increased safety measures and standard mechanical requirements such as parking areas, commercial buildings, warehouses, wooden structures. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

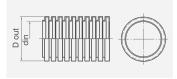
Туре	Part number	D out	min	000	kg	(m)
Ø16	1002016	16	13.0	30	2,83	6000
Ø20	1002020	20	16.6	30	3,84	5460
Ø25	1002025	25	21.5	30	5,11	3300
Ø32	1002032	32	28.5	15	3,52	1755
Ø40	1002040	40	36.0	9	3,01	1071
Ø50	1002050	50	45.0	9	3,78	702
Ø63	1002063	63	57.7	9	5,67	396

Medium Type (750Nt)











Standards: EN 61386.22

Assembled with

MEDISOL Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

$\begin{tabular}{ll} \textbf{MEDIFLEX}^{\$} \ \textbf{IAS} & \textbf{pliable conduit} \\ \end{tabular}$

33412

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Ageing resistance	UV stabilized
Antistatic Technology	Protection against static electricity

+ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative red color label.

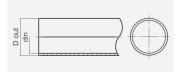
Ideal for installations in concrete/cavity walls and indoor exposed installations which require increased safety measures and standard mechanical requirements such as parking areas, commercial buildings, warehouses, wooden structures. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

Туре	Part number	D out	min		kg {	(m)
Ø16	2002016	16	10.8	50	2,85	3600
Ø20	2002020	20	13.8	50	4,20	3200
Ø25	2002025	25	18.1	25	2,86	1800
Ø32	2002032	32	24.0	25	3,82	1400
Ø40	2002040	40	31.0	20	4,10	880
Ø50	2002050	50	39.6	20	4,99	400
Ø63	2002063	63	52.3	20	6,97	360

Light Type (320Nt)

RAL 7035 light grey







Standards: EN 61386.21

Assembled with

SILCOR Bend CONDUR Coupler CONDUR Clip CONDUR Adaptor





Patent Protected 1009810

SILCOR®IAS rigid conduit		23411
Properties		Class
Resistance to compression	320Nt/5cm	2
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristi	cs 2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0
Additional properties		
Raw material	Heavy metals free (RoHS), specially sthermoplastic U-PVC	stabilized
Antistatic Technology	Protection against static electricity	

+ Engraved with laser printing and packed with safety straps in light blue color 100% recyclable polyethylene film.

Ideal for indoor exposed installations with light mechanical requirements such as commercial buildings, residential buildings. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

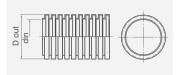
(m)
7920
5400
3240
1890
(

All product's certificates are available at www.kouvidis.com

Light Type (320Nt)

RAL 7035 light grey







Standards: EN 61386.22

Assembled with

SILCOR Bend CONDUR Coupler CONDUR Clip CONDUR Adaptor





Patent Protected 1009810

SIFLEX®IAS pliable conduit

22412

	Class
320Nt/5cm	2
1J (at -25°C)	2
-25°C	4
+60°C	1
Pliable	2
With electrical insulated characteristics	2
min IP65	6 5
Not applicable	0
None declared	0
Non flame propagating	1
None declared	0
	1J (at -25°C) -25°C +60°C Pliable With electrical insulated characteristics min IP65 Not applicable None declared Non flame propagating

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Antistatic Technology	Protection against static electricity

+ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative light blue color label.

Ideal for concealed installations, cavity walls and indoor exposed installations with light mechanical requirements such as commercial buildings, residential buildings. Their high impact strength, at low temperature environments, make them also ideal for cold weather conditions.

Туре	Part number	D out	min		kg	(m)
Ø16	2003016	16	10.8	50	2,23	3600
Ø20	2003020	20	14.1	50	2,76	3200
Ø25	2003025	25	18.5	25	1,88	1700
Ø32	2003032	32	24.5	25	2,53	1300
Ø40	2003040	40	31.4	20	2,95	880
Ø50	2003050	50	39.6	20	3,77	400
Ø63	2003063	63	52.4	20	4,87	360

Heavy Type (1250Nt)











Patents Protected 1009810, EP2698792

(H) CONDUR®IAS bend

Properties

Resistance to impact	6J (at -25°C)
Ageing resistance	UV stabilized > 10 years
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

Туре	Part number		min				11
Ø16	4007016	16	12.1	27	59	10	480
Ø20	4007020	20	16.0	35	74	10	480
Ø25	4007025	25	20.9	36.7	108	10	240
Ø32	4007032	32	27.4	47.6	142	6	48
Ø40	4007040	40	35.1	52.9	144	6	84
Ø50	4007050	50	44.7	62	175	4	40
Ø63	4007063	63	57.2	77	203	4	24

Medium Type (750Nt)











Patent Protected 1009810

MEDISOL® IAS bend

Properties

Resista	nce to impact		2J (at -25°C)				
Ageing resistance Antistatic Technology				UV stabilized Protection against static electricity			
							ity
Туре	Part number	□ out	(min)	A			Î
Ø16	4009016	16	13.0	27	59	10	480

Туре	Part number	D out	din	A	R		tt
Ø16	4009016	16	13.0	27	59	10	480
Ø20	4009020	20	16.6	35	74	10	480
Ø25	4009025	25	21.5	36.7	108	10	240
Ø32	4009032	32	28.5	47.6	142	6	48
Ø40	4009040	40	36.0	52.9	144	6	84
Ø50	4009050	50	45.0	62	175	4	40
Ø63	4009063	63	57.7	77	203	4	24

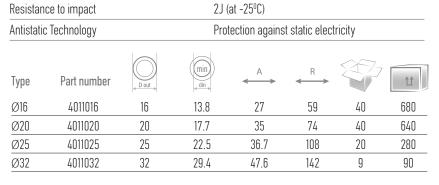
All product's certificates are available at www.kouvidis.com

Light Type (320Nt)

SILCOR® IAS bend

RAL 7035 light grey





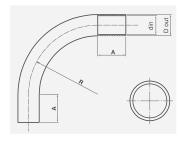






Patent Protected 1009810

Standards: EN 61386.21





+ Engraved with laser printing and packed in 100% recyclable packaging for their maximum protection.

General properties for Bends	
Temperature range	-25°C to $+60^{\circ}\text{C}$
IP ingress protection	min IP65
Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Electrical characteristics	With electrical insulated characteristics
Resistance to flame propagating	Non flame propagating

Note: Bends packaging do not contain coupler.

Junction Boxes













Standards: EN 60670-22. EN 50642





Watertight with or without seals

Properties	CONDUR® IAS plug in seals	CONDUR® IAS plug in grommets	CONDUR® IAS without seals			
Box raw material	PC (RoHS)	PC (RoHS)				
Temperature range	-25°C to +60°C					
Electrical characteristics	With	electrical insulated charac	cteristics			
Resistance to flame propagating		Non flame propagating				
Number of entries	7	7	-			
Kind of entries	Plug in seals	Plug in grommets	-			
Ingress protection	IP 55	IP 55	IP 65			
Number of base knock outs	4	4	-			
Conduit alignment	Yes	Yes	No			
Condensation opening		Yes				
Flame retardant		650°C				
Voltage	800V					
Halogen free	No toxic or corrosive gases in case of fire					
UV stability	Yes					
Antistatic Technology	Yes	Yes	Yes			

f * Cover plate and plug in seals are made of PE

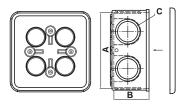
+ Watertight due to their elastic and directly mounted cover plate.

Junction boxes with seals: These boxes are provided with plug in seals or stepped grommets for easy positioning of cables, without the use of additional fittings, after cutting at the pre-marked points. CONDUR adaptors, of different diameters, can be easily fastened in the openings after pushing out the plug in seals/grommets.

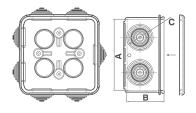
Junction boxes without seals: The installer can open any hole of every diameter according to the installation requirements.

All product's certificates are available at www.kouvidis.com

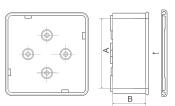
Junction Boxes



CONDUR® IAS plug in seals



CONDUR® IAS plug in grommets



CONDUR® IAS without seals



All product's certificates are available at www.kouvidis.com

	Туре	Part number	A mm	B mm	C		廿
_	Ø16/20	3001016	67	38	21.6	10	280
plug in seals	Ø20/16	3001020	82	43	21.6	10	160
ը "	Ø25/32	3001025	101	51	35.1	5	100
	_						
in nets	Ø16/20	3005016	67	38	21.6	10	240
plug in grommets	Ø20/16	3005020	82	43	21.6	10	160
g	Ø25/32	3005025	101	51	35.1	5	40
S							
ıg : sea	Ø16	3008016	62	32	-	10	230
plug without seals	Ø20	3008020	82	36	-	10	240
×	Ø25	3008025	91	41	-	10	160
	Ø32	3008032	101	51	-	5	100

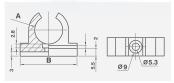
Fittings















Patent Protected 1009810, EP2698792

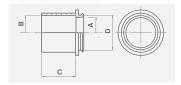
Fittings















Patent Protected 1009810, EP2698792

CONDUR®IAS clips

Properties

Raw material Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC

Installation guidelines

Recommended fastening space is 50cm for vertical and 40 cm for horizontal installations

+ They can be mounted with the use of 4mm screws and plugs. They have side slots for easy positioning to rails.

Туре	Part number	A mm	B		<u>t</u>
Ø16	4003016	15.8	35	4x50	3400
Ø20	4003020	19.8	40	4x50	2000
Ø25	4003025	24.8	46	4x30	1920
Ø32	4003032	31.8	53	30	1440
Ø40	4003040	39.8	63	20	960
Ø50	4003050	49.8	74	20	960
Ø63	4003063	62.8	88	20	960

CONDUR®IAS adaptors

Properties

Raw material Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE

+ Assembled with CONDUR junction boxes after removing their seals or grommets. Adaptors with Part No. 4005016 and 4005020 can be mounted on junction boxes with type 16/20 and 20/16 while 4005025 and 4005032 can me mounted with the type \emptyset 25/32.

Туре	Part number	A mm	B	C	D mm		11
Ø16	4005016	13	16	18.5	20	4x30	1920
Ø20	4005020	16.5	20	22.5	20	4x30	1200
Ø25	4005025	21.5	25	32	33	20	1260
Ø32	4005032	27.5	32	35	33	20	960

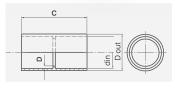
Fittings















Patent Protected 1009810, EP2698792

Standards: EN 61386.1, EN 50642



$\textcolor{red}{\textbf{CONDUR}^{\$}} \textbf{IAS couplers}$

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE
Ingress protection	min IP65

Туре	Part number	Dout	min	C	D mm		11
Ø16	4001016	20.0	16	51.0	1.5	30	2280
Ø20	4001020	23.5	20	52.5	1.5	30	1890
Ø25	4001025	28.5	25	51.5	1.5	30	1440
Ø32	4001032	37.0	32	65.0	2	20	560
Ø40	4001040	44.5	40	85.0	2	15	420
Ø50	4001050	55.6	50	105	2.5	10	200
Ø63	4001063	69.8	63	126	2.8	8	64

General properties for Fittings	
Temperature range	-25°C to +120°C
Electrical characteristics	With electrical insulated characteristics
Ageing resistance	UV stabilized
Resistance to flame propagating	Non flame propagating
Halogen free	No toxic or corrosive gases in case of fire
Antistatic Technology	Protection against static electricity

Why halogen free?

In case of a fire accident, the chlorine released from conventional plastics (halogenated) reacts with the humidity of the atmosphere producing hydrochloric acid which is dangerous and harmful to both people and the environment.

Ensure your safety

During combustion halogens produce gases, soot and chemical residues that generate dark and dense smoke waves which reduce the visibility of escape routes and hinder evacuation operations by rescue crews.

Protect your equipment

The corrosive gases that will result from the combustion of halogenated plastic materials can damage all areas exposed to smoke and cause severe corrosion in a particularly short time

KOUVIDIS has more than 14 years manufacturing experience in the production of halogen free plastic conduit systems and is one of the precious few manufacturers in Europe that offers it in heavy type version.

2

Plastic conduit systems

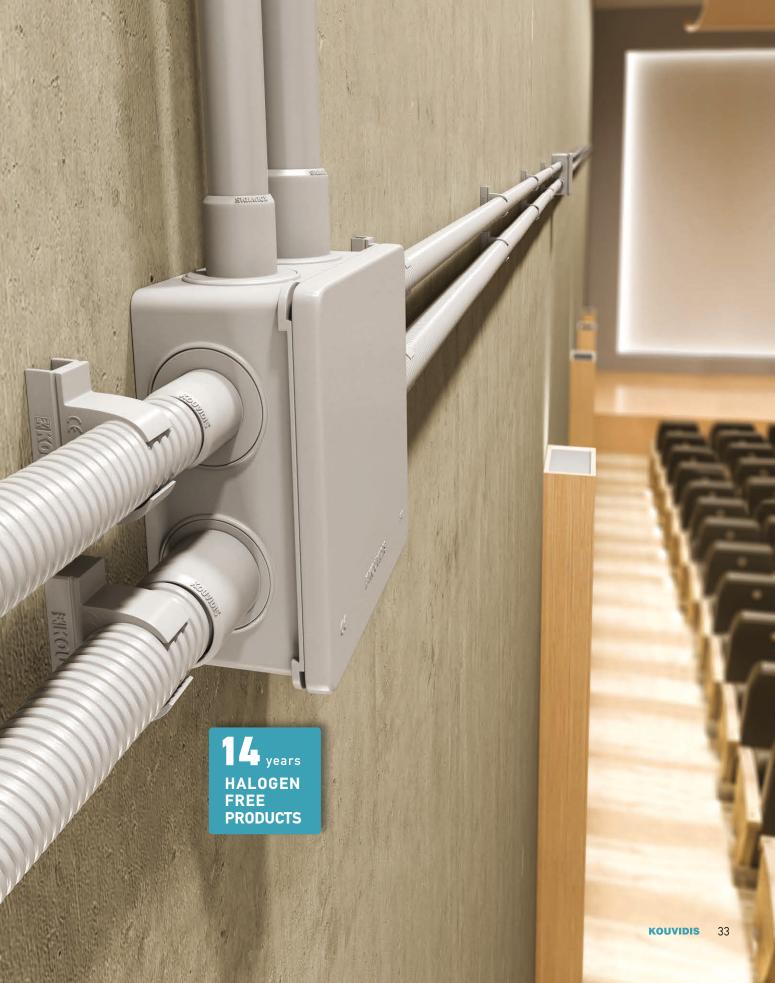
made from halogen free raw materials

for indoor areas intended to accommodate increased people traffic or industrial equipment









Heavy Type (1250Nt)

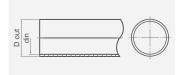














Standards:

EN 61386.21, EN 50642, EN 60754-2

Assembled with

CONDUR HF Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

CONDUR HF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (6J) at -45°C

All product's certificates are available at www.kouvidis.com

CONDUR® HF IAS rigid conduit

44441

Properties		Class
Resistance to compression	1250Nt/5cm	4
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP 65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Ageing resistance	UV stabilized
Halogen free	No toxic or corrosive gases in case of fire
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

+ Printed with indelible green color and packed with safety straps in blue color 100% recyclable polyethylene film.

Ideal for outdoor/indoor exposed installations which require increased safety measures and high mechanical requirements such as public gathering places (airports, hotels, tunnels, malls, theaters, subways etc.) and places with costly mechanical equipment (engine rooms, industrial spaces, computer rooms, etc.).

Туре	Part number	D out	min		kg	(m)
Ø16	1004016	16	12.5	30	2,66	6000
Ø20	1004020	20	16.2	30	3,55	5460
Ø25	1004025	25	20.8	15	2,32	2400
Ø32	1004032	32	27.5	15	3,29	1755
Ø40	1004040	40	34.8	9	2,51	1071
Ø50	1004050	50	45.1	9	3,97	702
Ø63	1004063	63	57.0	9	5,60	396

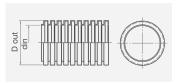
Heavy Type (1250Nt)













Standards:

EN 61386.21, EN 50642, EN 60754-2

Assembled with

CONDUR HF Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

CONFLEX HF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (6J) at $-45^{\circ}\mathrm{C}$

CONFLEX® HF IAS pliable conduit

44442

Properties		Class
Resistance to compression	1250Nt/5cm	4
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Ageing resistance	UV stabilized
Halogen free	No toxic or corrosive gases in case of fire
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

→ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative green /blue color label.

Ideal for outdoor/indoor exposed installations which require increased safety measures and high mechanical requirements such as public gathering places (airports, hotels, tunnels, malls, theaters, subways etc.) and places with costly mechanical equipment (engine rooms, industrial spaces, computer rooms, etc.).

Туре	Part number	D out	min		kg {	(m)
Ø16	2004016	16	10.8	50	2,39	3600
Ø20	2004020	20	13.6	50	3,44	3200
Ø25	2004025	25	18.3	25	2,63	1800
Ø32	2004032	32	23.2	25	3,37	1400
Ø40	2004040	40	30.7	20	3,42	880
Ø50	2004050	50	38.8	20	5,34	400
Ø63	2004063	63	51.5	20	7,18	360

Medium Type (750Nt)

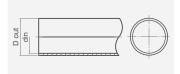














Standards: EN 61386.21, EN 50642

Assembled with

MEDISOL HF Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

MEDISOL HF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (6J) at -45°C

All product's certificates are available at www.kouvidis.com

MEDISOL® HF IAS rigid conduit

34441

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC		
Ageing resistance	UV stabilized		
Halogen free	No toxic or corrosive gases in case of fire		
Antistatic Technology	Protection against static electricity		

+ Printed with indelible green/red color and packed with safety straps in red color 100% recyclable polyethylene film.

Ideal for indoor/outdoor exposed installations which require increased safety measures and standard mechanical requirements such as public gathering places (airports, hotels, malls, theaters, etc.) and places with costly mechanical equipment (engine rooms, industrial spaces, computer rooms, etc.).

Туре	Part number	D out	min din	000	kg	(m)
Ø16	1005016	16	13.0	30	2,44	6000
Ø20	1005020	20	16.7	30	2,99	5460
Ø25	1005025	25	21.4	30	4,26	3300
Ø32	1005032	32	27.6	15	2,91	1755
Ø40	1005040	40	34.5	9	2,55	1071
Ø50	1005050	50	45.1	9	3,43	702
Ø63	1005063	63	57.5	9	5,40	396















Standards: EN 61386.22, EN 50642

Assembled with

MEDISOL HF Bend CONDUR Coupler CONDUR Adaptor CONDUR Clip





Patent Protected 1009810

MEDIFLEX HF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (6J) at $-45^{\circ}\mathrm{C}$

MEDIFLEX® HF IAS pliable conduit

33442

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	min 2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Ageing resistance	UV stabilized
Halogen free	No toxic or corrosive gases in case of fire
Antistatic Technology	Protection against static electricity

+ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative green/red color label.

Ideal for indoor/outdoor exposed installations which require increased safety measures and standard mechanical requirements such as public gathering places (airports, hotels, malls, theaters, etc.) and places with costly mechanical equipment (engine rooms, industrial spaces, computer rooms, etc.).

Туре	Part number	D out	min din		kg	(m)
Ø16	2005016	16	10.6	50	2.36	3600
Ø20	2005020	20	13.7	50	3.09	3200
Ø25	2005025	25	18.1	25	2.12	1800
Ø32	2005032	32	24.0	25	2.94	1400
Ø40	2005040	40	31.1	20	2.98	880
Ø50	2005050	50	39.2	20	5.27	400
Ø63	2005063	63	51.0	20	5.55	360

Heavy Type (1250Nt)













Patent Protected 1009810

H CONDUR® HF IAS bend

Properties

Resistance to impact	6J (at -25°C)
Ageing resistance	UV stabilized
Rodent repellent	Not attractive to rodents
Antistatic Technology	Protection against static electricity

Туре	Part number	D out	(min)	<u> </u>			11
Ø16	4013016	16	12.5	27	59	10	480
Ø20	4013020	20	16.2	35	74	10	480
Ø25	4013025	25	20.8	36.7	108	10	240
Ø32	4013032	32	27.5	47.6	142	6	48
Ø40	4013040	40	34.8	52.9	144	6	84
Ø50	4013050	50	45.1	62	175	4	40
Ø63	4013063	63	57.0	77	203	4	24

Medium Type (750Nt)















Patent Protected 1009810

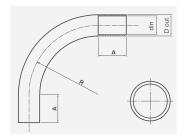
MEDISOL® HF IAS bend

Properties

Resistance to impact	6J (at -25°C)
Ageing resistance	UV stabilized
Antistatic Technology	Protection against static electricity

Туре	Part number	D out	(min)	A		7	11
Ø16	4015016	16	13.0	27	59	10	480
Ø20	4015020	20	16.7	35	74	10	480
Ø25	4015025	25	21.4	36.7	108	10	240
Ø32	4015032	32	27.6	47.6	142	6	48
Ø40	4015040	40	34.5	52.9	144	6	84
Ø50	4015050	50	45.1	62	175	4	40
Ø63	4015063	63	57.5	77	203	4	24

Standards: EN 61386.21, EN 50642





Note: Bends packaging do not contain coupler.

+ Marked using embossed printing and packed in 100% recyclable packaging for their maximum protection.

General properties for Bends	
Temperature range	-25°C to +120°C
IP ingress protection	min IP65
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Electrical characteristics	With electrical insulated characteristics
Resistance to flame propagating	Non flame propagating
Halogen free	No toxic or corrosive gases in case of fire

All product's certificates are available at www.kouvidis.com

Appropriate for product families 1 & 2

Junction Boxes













Standards: EN 60670-22. EN 50642





Watertight with or without seals

Properties	CONDUR® IAS plug in seals	CONDUR® IAS plug in grommets	CONDUR® IAS without seals				
Box raw material	PC (RoHS)	PS (RoHS)	PC (RoHS)				
Temperature range	-25°C to +60°C						
Electrical characteristics	With electrical insulated characteristics						
Resistance to flame propagating	Non flame propagating						
Number of entries	7	7	-				
Kind of entries	Plug in seals	Plug in grommets	-				
Ingress protection	IP 55	IP 55	IP 65				
Number of base knock outs	4	4	-				
Conduit alignment	Yes	Yes	No				
Condensation opening		Yes					
Flame retardant		650°C					
Voltage	V008						
Halogen free	No toxic or corrosive gases in case of fire						
UV stability	Yes						
Antistatic Technology	Yes	Yes	Yes				

^{*} Cover plate and plug in seals are made of PE

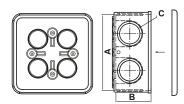
+ Watertight due to their elastic and directly mounted cover plate.

Junction boxes with seals: These boxes are provided with plug in seals or stepped grommets for easy positioning of cables, without the use of additional fittings, after cutting at the pre-marked points. CONDUR adaptors, of different diameters, can be easily fastened in the openings after pushing out the plug in seals/grommets.

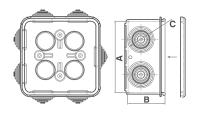
Junction boxes without seals: The installer can open any hole of every diameter according to the installation requirements.

2 Plastic conduit systems made from halogen free materials Appropriate for product families 1 & 2

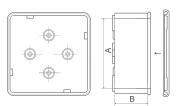
Junction Boxes



 $CONDUR^{\circledR} \text{ ias }$ plug in seals



CONDUR® IAS plug in grommets



CONDUR® IAS without seals



	Туре	Part number	A	B	C		廿
_	Ø16/20	3001016	67	38	21.6	10	280
plug in seals	Ø20/16	3001020	82	43	21.6	10	160
<u>Б</u>	Ø25/32	3001025	101	51	35.1	5	100
plug in grommets	Ø16/20 Ø20/16 Ø25/32	3005016 3005020 3005025	67 82 101	38 43 51	21.6 21.6 35.1	10 10 5	240 160 40
plug without seals	Ø16 Ø20 Ø25	3008016 3008020 3008025	62 82 91	32 36 41	- - -	10 10 10	230 240 160
	Ø32	3008032	101	51	-	5	100

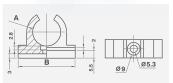
Fittings















Patent Protected 1009810, EP2698792

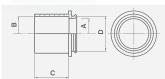
Fittings















CONDUR®IAS clips

Properties

Raw material Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC

Installation guidelines

Recommended fastening space is 50cm for vertical and 40 cm for horizontal installations

+ They can be mounted with the use of 4mm screws and plugs. They have side slots for easy positioning to rails.

Туре	Part number	A mm	B mm		<u>t</u>
Ø16	4003016	15.8	35	4x50	3400
Ø20	4003020	19.8	40	4x50	2000
Ø25	4003025	24.8	46	4x30	1920
Ø32	4003032	31.8	53	30	1440
Ø40	4003040	39.8	63	20	960
Ø50	4003050	49.8	74	20	960
Ø63	4003063	62.8	88	20	960

CONDUR®IAS adaptors

Properties

Raw material Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE

ullet Assembled with CONDUR junction boxes after removing their seals or grommets. Adaptors with Part No. 4005016 and 4005020 can be mounted on junction boxes with type 16/20 and 20/16 while 4005025 and 4005032 can me mounted with the type \emptyset 25/32.

Туре	Part number	A mm	B	C	D mm		11
Ø16	4005016	13	16	18.5	20	4x30	1920
Ø20	4005020	16.5	20	22.5	20	4x30	1200
Ø25	4005025	21.5	25	32	33	20	1260
Ø32	4005032	27.5	32	35	33	20	960

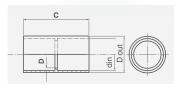
Fittings















Patent Protected 1009810, EP2698792

Standards: EN 61386.1, EN 50642



$\textcolor{red}{\textbf{CONDUR}^{\$}} \textbf{IAS couplers}$

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE
Ingress protection	min IP65

Туре	Part number	D out	min	C	D		<u>t</u>
Ø16	4001016	20.0	16	51.0	1.5	30	2280
Ø20	4001020	23.5	20	52.5	1.5	30	1890
Ø25	4001025	28.5	25	51.5	1.5	30	1440
Ø32	4001032	37.0	32	65.0	2	20	560
Ø40	4001040	44.5	40	85.0	2	15	420
Ø50	4001050	55.6	50	105	2.5	10	200
Ø63	4001063	69.8	63	126	2.8	8	64

General properties for Fittings	
Temperature range	-25° C to $+120^{\circ}$ C
Electrical characteristics	With electrical insulated characteristics
Ageing resistance	UV stabilized
Resistance to flame propagating	Non flame propagating
Halogen free	No toxic or corrosive gases in case of fire
Antistatic Technology	Protection against static electricity

All product's certificates are available at www.kouvidis.com

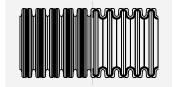


Light Type (320Nt)











(E DE

Application Standards: EN 61386.22, EN 50642. EN 60754-2

Reference Standards: EN 61034-2.

NF P 98-332

Assembled with

Connection couplers for DUROFLEX PLUS / SUPERFLEX PLUS conduits













Patents Protected: 1009810, EP2698792, 1009975

SUPERFLEX® PLUS IAS pliable conduit

22332

Properties		Class
Resistance to compression	320 Nt	2
Resistance to impact	1J (at -15°C)	2
Lower temperature range	-15°C	3
Upper temperature range	+105°C	3
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
Protection against ingress of solid objects Protection against ingress of water	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0
Additional properties		

Auditional properties	
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PP
Low friction (internal layer)	Special material (slip) speeds up the routing of cables
Anti - electromagnetic technology	Absorbs a part of the electromagnetic radiation emitted by the cables
Rodent repellent	Not attractive to rodents
Color marking / Longitudinal lines	Longitudinal stripes of indelible color indicate the power of the protected cables
Halogen free	No toxic or corrosive gases in case of fire
Low smoke	Better visibility of escape ways
Antistatic Technology	Protection against static electricity

+ Three layer conduit consists of a corrugated external wall, an internal layer that follows the geometry of the outer wall and a third independent layer of longitudinal lines. Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps. Ideal for concealed type installations in plasterboard, cavity wall and sub-ceiling. A special slip material is added on its internal layer, facilitating the smooth insertion of the cables.

Туре	Part number red / green	Dout	min		kg	(m)
Ø16	2010016 / 2017016	16	10,9	50	2,34	5860
Ø20	2010020 / 2017020	20	14,2	100	5,60	5600
Ø25	2010025 / 2017025	25	18,8	50	3,59	2600
Ø32	2010032 / 2017032	32	24,9	25	2,31	1100



RAL 3020 red / inner layer

RAL 5019 blue / outer layer







Application Standards: EN 61386.22, EN 50642, EN 60754-2 Reference Standards: EN 61034-2, NF P 98-332

Assembled with

Connection couplers for DUROFLEX PLUS / SUPERFLEX PLUS conduits











Patents Protected: 1009810, 1009144, EP2698792, 1009158

DUROFLEX® PLUS IAS pliabl	e conduit	33332	
Properties		Class	
Resistance to compression	750 Nt	3	
Resistance to impact	2J (at -15°C)	3	
Lower temperature range	-15°C	3	
Upper temperature range	+105°C	3	
Resistance to bending	Pliable	2	
Electrical characteristics	With electrical insulated characteris	stics 2	
Protection against ingress of solid objects Protection against ingress of water	min IP65	6 5	
Resistance against corrosion	Not applicable	0	
Tensile strength	None declared	0	
Resistance to flame propagating	Non flame propagating	1	
Suspended load capacity	None declared	0	
Additional properties			
Raw material	Halogen free, heavy metals free (Rospecially stabilized thermoplastic F		
Ageing resistance	UV stabilized (≥ 5 years)		
Low friction (internal layer)	Special material (slip) speeds up th cables	e routing of	
Rodent repellent	Not attractive to rodents (the internal layer incorporates rod	ent repellent)	
Color marking	Longitudinal stripes of indelible color indicate the power of the protected cables		
Halogen free	No toxic or corrosive gases in case of fire		
Low smoke	Better visibility of escape ways		
Antistatic Technology	Protection against static electricity		

+ Structured wall conduits. The external wall of the conduit is corrugated and the internal wall is smooth. Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative blue color label.

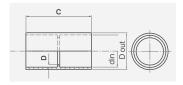
Ideal for concealed type installations in concrete, hollow walls and underplaster.

Туре	Part number red / green	D out	din		kg	(m)
Ø20	2009020 / 2016020	20	13,2	50	3,78	3200
Ø25	2009025 / 2016025	25	18,1	25	2,53	1800
Ø32	2009032 / 2016032	32	23,7	25	3,49	1400

Fittings

RAL 7035 Light grey





Application Standards: EN 61386.01 **Reference Standards:** EN 50642

Assembled with SUPERFLEX PLUS IAS DUROFLEX PLUS IAS







Coupler for DUROFLEX®PLUS IAS / SUPERFLEX®PLUS IAS conduits

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Protection against ingress of solid objects Protection against ingress of water	min IP65
Temperature range	-25°C to +60°C
Electrical characteristics	With electrical insulated characteristics
Resistance to flame propagating	Non flame propagating
Halogen free	No toxic or corrosive gases in case of fire
Antistatic Technology	Protection against static electricity

Туре	Part number	D out	din	C mm		<u>t</u>
Ø16	4017016	17.7	16.0	52.3	40	1920
Ø20	4017020	23.5	20.0	51.5	30	1890
Ø25	4017025	28.5	25.0	51.5	30	1440
Ø32	4017032	37.0	32.0	65.0	20	560



Antimicrobial technology

Even in the cleanest environments microbial contamination will occur because of factors like air circulation and human contact. Once microbes are present on surfaces there is an undesirable risk for cross contamination.

Why use an antimicrobial protected conduit?

Antimicrobial technology ensures a reduction of up to 99% of the most dangerous bacteria within 24 hours. Being incorporated in the material which the product is made of, it guarantees a long-lasting bactericidal action.

Where to use it?

In sanitary areas such hospitals or laboratories, public gathering places such as schools or nursing homes and places where HACCP & ISO 22000 management systems are required such as food industries, professional cuisines, restaurants, etc.

Antimicrobial efficacy is tested according to the international standard ISO 22196 and is controlled by the British laboratory BIOCOTE.

3

Plastic conduit systems

with antimicrobial technology

for places where HACCP & ISO 22000 are applicable or hygiene is priority



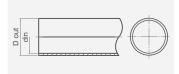














Standards: EN 61386.21, ISO 22196

Assembled with

MEDISOL AM Bend MEDISOL AM Coupler MEDISOL AM Adaptor MEDISOL AM Clip







Patent No: 1007372
Hellenic Industrial Property Organization

All product's certificates are available at www.kouvidis.com

MEDISOL® AM rigid conduit

33411

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Ageing resistance	UV stabilized
Rodent repellent	Not attractive to rodents

+ Engraved with laser printing and packed with safety straps in red color 100% recyclable polyethylene film. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces (schools, nursery homes/rooms & sport centers) and areas requiring implementation of HACCP & ISO 22000 systems such as food industries/warehouses, restaurants, etc.

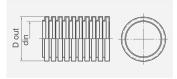
Туре	Part number	Dout	min		kg	(m)
Ø16	1044116	16	13.0	30	2,91	6000
Ø20	1044120	20	16.8	30	3,94	5460
Ø25	1044125	25	21.5	30	5,34	3300
Ø32	1044132	32	28.3	15	3,64	1755
Ø40	1044140	40	36.0	9	3,05	1071
Ø50	1044150	50	45.0	9	3,97	702
Ø63	1044163	63	57.8	9	5,77	396













Standards: EN 61386.22, ISO 22196

Assembled with

MEDISOL AM Bend MEDISOL AM Coupler MEDISOL AM Adaptor MEDISOL AM Clip







MEDIFLEX® AM pliable conduit

33412

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+60°C	1
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Ageing resistance	UV stabilized
Rodent repellent	Not attractive to rodents

→ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative red color label. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces (schools, nursery homes/rooms & sport centers) and areas requiring implementation of HACCP & ISO 22000 systems such as food industries/warehouses, restaurants, etc.

Туре	Part number	D out	min		kg {	(m)
Ø16	2044116	16	10.7	50	2,87	3600
Ø20	2044120	20	14.1	50	3,95	3200
Ø25	2044125	25	18.3	25	2,74	1800
Ø32	2044132	32	24.0	25	3,87	1400
Ø40	2044140	40	31.0	20	4,05	880
Ø50	2044150	50	39.0	20	5,27	400
Ø63	2044163	63	52.0	20	7,12	360



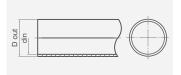














Standards: EN 61386.21, ISO 22196, EN 50642

Assembled with

MEDISOL AMHF Bend MEDISOL AM Coupler MEDISOL AM Adaptor MEDISOL AM Clip









Patent No: 1007372

Hellenic Industrial Property Organization

MEDISOL AMHF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (6J) at -45 $^{\circ}\mathrm{C}$

All product's certificates are available at www.kouvidis.com

MEDISOL® AMHF rigid conduit

34441

Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	6J (at -25°C)	4
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Rigid	1
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Halogen free	No toxic or corrosive gases in case of fire
Ageing resistance	UV stabilized
Rodent repellent	Not attractive to rodents

+ Printed with indelible green color and packed with safety straps in red color 100% recyclable polyethylene film. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces (schools, nursery homes/rooms & sport centers) and areas requiring implementation of HACCP & ISO 22000 systems such as food industries/warehouses, restaurants, etc.

Туре	Part number	Dout	min	000	kg	(m)
Ø16	1044016	16	13.1	30	2.18	6000
Ø20	1044020	20	16.8	30	3.02	5460
Ø25	1044025	25	21.7	30	4.40	3300
Ø32	1044032	32	27.9	15	2.85	1755
Ø40	1044040	40	35.8	9	2.51	1071
Ø50	1044050	50	45.5	9	3.66	702
Ø63	1044063	63	57.8	9	5.40	396

Note: Product with minimum order quantity requirement



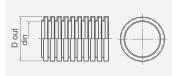














Standards: EN 61386.22, ISO 22196, EN 50642

Assembled with

MEDISOL AMHF Bend MEDISOL AM Coupler MEDISOL AM Adaptor MEDISOL AM Clip









Patent No: 1007372
Hellenic Industrial Property Organization

MEDIFLEX AMHF conduit is being tested by KOUVIDIS quality control lab for its impact resistance (2J) at -45° C

MEDIFLEX® AMHF	pliable conduit 334	42
Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -25°C)	3
Lower temperature range	-25°C	4
Upper temperature range	+120°C	4
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
IP ingress protection	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0
Additional properties		
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC	
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours	
Halogen free	No toxic or corrosive gases in case of fire	

+ Embossed with its basic properties (marking) and packed with 100% recyclable polyethylene film including safety straps and an informative red color label. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces and areas requiring implementation of HACCP & ISO 22000 systems such as food industries/ warehouses, restaurants, etc.

UV stabilized

Not attractive to rodents

Туре	Part number	D out	min din w		kg	(m)
Ø16	2044016	16	11.1	50	2.40	3600
Ø20	2044020	20	14,0	50	3.10	3200
Ø25	2044025	25	18.6	25	1.90	1800
Ø32	2044032	32	24.1	25	2.90	1400
Ø40	2044040	40	31.2	20	3.10	880
Ø50	2044050	50	39.3	20	4.00	400
Ø63	2044063	63	51.3	20	5.40	360

Note: Product with minimum order quantity requirement

Ageing resistance

Rodent repellent





RAL 9003 signal white





Medium Type (750Nt)









RAL 9003 signal white







MEDISOL® AM bend

Properties

Resistance to impact	2J (at -25°C)
Temperature range	-25°C to +60°C

Additional properties

Raw material Heavy metals free (RoHS), specially stabilized thermoplastic U-PVC

Туре	Part number	D out	min	A			tt
Ø16	4344116	16	13.0	27	59	10	480
Ø20	4344120	20	16.8	35	74	10	480
Ø25	4344125	25	21.5	36.7	108	10	240
Ø32	4344132	32	28.3	47.6	142	6	48
Ø40	4344140	40	36.0	52.9	144	6	84
Ø50	4344150	50	45.0	62	175	4	40
Ø63	4344163	63	57.8	77	203	4	24

MEDISOL® AMHF bend

Properties

Resistance to impact	6J (at -25°C)
Temperature range	-25°C to +120°C

Additional properties

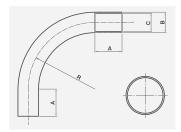
Raw material Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Halogen free No toxic or corrosive gases in case of fire
Less smoke than PVC Better visibility of escape ways

Туре	Part number	D out	min	A			11
Ø16	4344016	16	13.1	27	59	10	480
Ø20	4344020	20	16.8	35	74	10	480
Ø25	4344025	25	21.7	36.7	108	10	240
Ø32	4344032	32	27.9	47.6	142	6	48
Ø40	4344040	40	35.8	52.9	144	6	84
Ø50	4344050	50	45.5	62	175	4	40
Ø63	4344063	63	57.8	77	203	4	24



Standards & Directives: EN 61386.21, ISO 22196







Note: Bends do not contain coupler within their packages.

Basic properties for Bends	
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Electrical characteristics	With electrical insulated characteristics
Ageing resistance	UV stabilized
Resistance to flame propagating	Non flame propagating
Ingress protection	min IP65
Rodent repellent	Not attractive to rodents

All product's certificates are available at www.kouvidis.com

Fittings

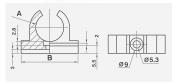














MEDISOL® AM clips

Properties

Raw material

Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC

Installation guidelines

Recommended fastening space is 50cm for vertical and 40 cm for horizontal installations

+ They can be mounted with the use of 5mm screws and plugs. They have side slots for easy positioning to rails.

Туре	Part number	A mm	B mm		<u>†</u>
Ø16	4144016	15.8	35	4x50	3400
Ø20	4144020	19.8	40	4x50	2000
Ø25	4144025	24.8	46	4x30	1920
Ø32	4144032	31.8	53	30	1440
Ø40	4144040	39.8	63	20	960
Ø50	4144050	49.8	74	20	960
Ø63	4144063	62.8	88	20	960

Fittings

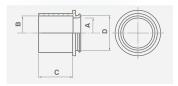














MEDISOL® AM adaptors

Properties

Raw material

Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE

→ Assembled with MEDISOL AM junction boxes after removing their seals. Adaptors with Part No. 4044016 and 4044020 can be mounted on junction boxes with type Ø16/20 and Ø20/16 while 4044025 and 4044032 can be mounted with the type Ø25/32.

Туре	Part number	A mm	B mm	C mm	D mm	7	<u>t</u>
Ø16	4044016	13	16	18.5	20	4x30	1920
Ø20	4044020	16.5	20	22.5	20	4X30	1200
Ø25	4044025	21.5	25	35	33	20	1260
Ø32	4044032	27.5	32	35	33	20	960

3 Plastic conduit systems made with antimicrobial technology

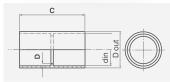
Fittings













Standards & Directives:

EN 61386.1, ISO 22196, EN 50642, EU 98/8/EC (BPD)



MEDISOL® AM couplers

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PE
Ingress protection	min IP65

Туре	Part number	D out	min	C	D mm		1
Ø16	4244016	20	16	51	1.5	30	2280
Ø20	4244020	23.5	20	52.5	1.5	30	1890
Ø25	4244025	28.5	25	51.5	1.5	30	1440
Ø32	4244032	37	32	65	2	20	560
Ø40	4244040	44.5	40	85	2	15	420
Ø50	4244050	55.6	50	105	2.5	10	200
Ø63	4244063	69.8	63	126	2.8	8	64

General properties for Fittings	
Temperature range	-25°C to +120°C
Electrical characteristics	With electrical insulated characteristics
Ageing resistance	UV stabilized
Resistance to flame propagating	Non flame propagating
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Halogen free	No toxic or corrosive gases in case of fire

All product's certificates are available at www.kouvidis.com

3 Plastic conduit systems made with antimicrobial technology

Junction boxes

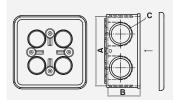




















Standards & Directives:

EN 60670-22, ISO 22196, EN 50642, EU 98/8/EC (BPD)

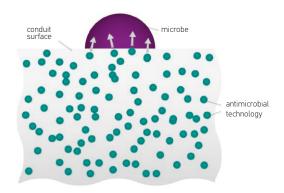
MEDISOL® AM watertight with seals

Properties	MEDISOL® AM	
Raw material*	PC (RoHS)	
Temperature range	-25°C to +60°C	
Electrical characteristics	With electrical insulated characteristics	
Resistance to flame propagating	Non flame propagating	
Number of entries	7	
Seals	Plug in seals	
Ingress protection	IP55	
Number of base knock outs	4	
Conduit alignment	Yes	
Condensation opening	Yes	
Flame retardant	650°C	
Voltage	800V	
UV stability	Yes	
Halogen free	No toxic or corrosive gases in case of fire	
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours	

^{*} Cover plate and plug in seals are made of PE.

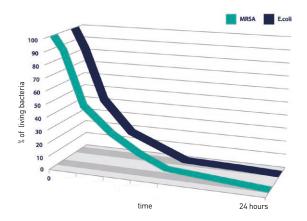
Watertight due to their elastic and directly mounted cover plate.
MEDISOL AM adaptors, of different diameters, can be easily fastened in the openings after pushing out the plug in seals.

Туре	Part number	A mm	B	C		tt
Ø16/20	3044016	67	38	21.6	10	280
Ø20/16	3044020	82	43	21.6	10	160
Ø25/32	3044025	101	51	35.1	5	100



ANTIMICROBIAL TECHNOLOGY

The antimicrobial technology is incorporated in the material which MEDISOL® AM -MEDIFLEX® AM plastic conduit system is made of during the manufacturing process to ensure a continuous antimicrobial protection. The active ingredients, contained in the surface of the antimicrobial system of plastic pipes, come in contact with the deposited microbes and after intervening in their cellular structure they achieve to prevent their reproduction and after that their significant reduction.



Moreover, the neutralization time of microbes is 24 hours, where a significant reduction of bacteria can be observed compared to an unprotected surface whereas a microbe can be proliferated and replicated endangering generating infections.

Double wall technology

GEONFLEX® & GEOSUB® double wall conduits are two of the most precious products in KOUVIDIS history because they have changed the management & protection of cables in buried underground installations. After 10 years in the market they have been placed in hundreds of construction projects with great success gaining installers and engineers respect due to their high quality and their distinctive advantages.

Our double structured wall conduits GEONFLEX® & GEOSUB® incorporate, during the production process, a third independent layer of longitudinal lines, in indelible color, on the outer of their corrugated wall creating a long lasting color marking between electrical installations and communication systems. In this way, they protect the personnel performing technical installation or maintenance tasks by warning them about the riskiness of the buried underground conduits. At the same time, they facilitate engineer's work providing a better and safer way of networking.

KOUVIDIS is the first purely Greek company engaged, from 2011, in the manufacture of double wall conduits for underground power and telecommunication networks and the only European company that produces plastic conduits for buried underground networks in diameters of Ø32 - Ø250.



Plastic conduit systems

buried underground

for installation of buried underground power and telecommunication networks





Double wall conduits



Red color coding protection of cables in electrical installations

Green color coding protection of cables in **communication systems**

The color identification of GEONFLEX® & GEOSUB® conduits follows the rules set by the Standard NF P 98-332 which specifies the pipeline coloring according to the application field and the minimum distances buried pipes should have between each other. The warning marking, of our conduits, follows the specifications of products intended to protect and warn of buried underground installations according to the European Standards EN 12613 & EN 50520.

Normal Type (N750)



RAL 9004 black / outer layer

RAL 3020 Indelible red / Longitudinal lines





Standards: EN 61386-24

Reference Standards: NF P 98-332.

EN 12613 & EN 50520

More feauters for GEONFLEX® bars and coils

Assembled with

Connection coupler with hooks End caps

Red color coding protection of cables in **electrical installations**

Green color coding protection of cables in **communication systems**





Patent Protected: 1009810, 1009158, EP2698792, 1008090

All product's certificates are available at www.kouvidis.com

GEONFLEX® IAS (in bars)

Properties

750Nt (type 750)
Normal
-5°C
+90°C
Rigid
With electrical insulated characteristics
IP44 (coupler connected) IP 68 (Coupler bonded with KOUVIDIS sealant)
Flame propagating

Additional properties

Additional proportios	
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Ageing resistance	UV stabilized (≥ 5 years)
Low friction (internal layer)	Special material (slip) speeds up the routing of cables
Rodent repellent	Not attractive to rodents (the internal layer incorporates rodent repellent)
Color marking	Longitudinal stripes of HIGH thickness and indelible color indicate the power of the protected cables
Antistatic Technology	Protection against static electricity

Double structured wall conduits, corrugated outside and smooth inside, printed with indelible color with their basic properties and affixed with an informative waterproof indelible green label. Ideal for buried underground power and telecommunication networks, urban development projects, RES urban development projects and construction projects.

Their special design ensures higher mechanical resistance, over 750Nt in compression.

Туре	Part number	D out	min		kg {	13,6m
Ø75	1007075	75	60.0	6	2,90	10080
Ø90	1007090	90	74.0	6	3,60	6912
Ø110	1007110	110	92.0	6	4,30	4800
Ø125	1007125	125	104.5	6	5,30	3072
Ø160	1007160	160	136.0	6	8,30	2520
Ø200	1007200	200	167.5	6	9,70	1800
Ø250	1007250	250	212.0	6	16,70	960

Product with minimum order quantity requirement (also with green stripes) See page 99 for max. loading quantities.

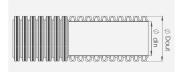
Normal Type (N750)



RAL 9004 black / outer layer

RAL 3020 Indelible red / Longitudinal lines







Standards: EN 61386-24 **Reference Standards**: NF P 98-332, EN 12613 & EN 50520

NOTE: GEONFLEX conduits come with a cable guide and two protective caps at each conduit's edge

In 50m coil packaging and internal safety strap is placed on the 25th meter to keep the initial shape of the coil unchanged when its external straps are snipped off.







Patent Protected: 1009810, 1009158, EP2698792, 1008090

GEONFLEX® IAS (in coils)

Properties

Resistance to compression	750Nt (type 750)
Resistance to impact	Normal
Lower temperature range	-5°C
Upper temperature range	+90°C
Resistance to bending	Pliable
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP44 (coupler connected) IP 68 (Coupler bonded with KOUVIDIS sealant)
Resistance to flame propagating	Flame propagating
Additional properties	
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Ageing resistance	UV stabilized (≥ 5 years)
Low friction (internal layer)	Special material (slip) speeds up the routing of cables
Rodent repellent	Not attractive to rodents (the internal layer incorporates animal repellent)
Internal guide	Cable guide with minimum tensile strength 650Nt
Color marking	Longitudinal stripes of HIGH thickness and indelible color indicate the power of the protected cables
Antistatic Technology	Protection against static electricity

Double structured wall conduits, corrugated outside and smooth inside, printed with indelible color with their basic properties, packed with WHITE safety straps and affixed with an informative waterproof indelible green label. Ideal for buried underground power and telecommunication networks, urban development projects, RES urban development projects and construction projects.

Part number 25m / 50m	D out	min		25/50m {	25/50m
2007032/2008032	32	23.8	25m/50m	2,58/5,15	33750/40000
2007040/2008040	40	31.3	25m/50m	3,80/7,72	26250/31500
2007050/2008050	50	39.0	25m/50m	4,40/9,80	16250/21000
2007063/2008063	63	49.8	25m/50m	6,40/14,29	11500/14000
2007075/2008075	75	60.8	25m/50m	9,13/18,20	6250/7750
2007090/2008090	90	74.9	25m/50m	14,43/28,92	3750/5500
2007110/2008110	110	92.5	25m/50m	16,98/34,01	3000/4000
2007125/2008125	125	105.3	25m/50m	21,13/42,41	3125/3500
2007160-	160	137.1	25m	32,84	1900/-
2007200/-	200	169.1	25m	39,13	1225/-
	25m / 50m 2007032/2008032 2007040/2008040 2007050/2008050 2007063/2008063 2007075/2008075 2007090/2008090 2007110/2008110 2007125/2008125 2007160-	25m / 50m 2007032/2008032 2007040/2008040 40 2007050/2008050 50 2007063/2008063 63 2007075/2008075 75 2007090/2008090 2007110/2008110 110 2007125/2008125 125 2007160- 160	25m / 50m Dout of min of m	25m / 50m Dout of the point	Part number 25m / 50m 25m/50m \$\begin{array}{c} \text{25m} \end{array}\$ 2007032/2008032 32 23.8 25m/50m 2,58/5,15 2007040/2008040 40 31.3 25m/50m 3,80/7,72 2007050/2008050 50 39.0 25m/50m 4,40/9,80 2007063/2008063 63 49.8 25m/50m 6,40/14,29 2007075/2008075 75 60.8 25m/50m 9,13/18,20 2007090/2008090 90 74.9 25m/50m 14,43/28,92 2007110/2008110 110 92.5 25m/50m 16,98/34,01 2007125/2008125 125 105.3 25m/50m 21,13/42,41 2007160- 160 137.1 25m 32,84

See page 99 for max. loading quantities.

Light Type (L450)









Standards: EN 61386-24

Reference Standards: NF P 98-332,

EN 12613 & EN 50520

More feauters for GEOSUB® bars and coils

Assembled with

Connection coupler with hooks End caps

Red color coding protection of cables in **electrical installations**

Green color coding protection of cables in **communication systems**





Patents Protected: 1009810, 1009158. EP2698792. 1008090

GEOSUB® IAS (in bars)

Properties

Resistance to compression	450Nt (type 450)
Resistance to impact	Light
Lower temperature range	-5°C
Upper temperature range	+90°C
Resistance to bending	Rigid
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP40 (coupler connected) IP 68 (coupler bonded with KOUVIDIS sealant)
Resistance to flame propagating	Flame propagating

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Ageing resistance	UV stabilized (≥ 5 years)
Color marking	Longitudinal stripes of LOW thickness and indelible color indicate the power of the protected cables
Antistatic Technology	Protection against static electricity

Double structured wall conduits, corrugated outside and smooth inside, printed with their basic properties and affixed with an informative waterproof indelible mauve label. Ideal for buried underground power and telecommunication networks, urban development projects, urban development and construction projects.

Туре	Part number	D out	min		kg {	13,6m
Ø75	1006075	75	61.0	6	1,95	10080
Ø90	1006090	90	75.8	6	2,75	6912
Ø110	1006110	110	92.0	6	3,57	4800
Ø125	1006125	125	105.5	6	4,45	3072
Ø160	1006160	160	137.5	6	6,30	2520
Ø200	1006200	200	169.3	6	7,65	1800
Ø250	1006250	250	212.0	6	10,80	960

Note: Product with minimum order quantity requirement (also with green stripes) See page 99 for max. loading quantities.

All product's certificates are available at www.kouvidis.com

Light Type (L450)

RAL 3020 red / inner layer RAL 9004 black / outer layer

RAL 3020 Indelible red / Longitudinal lines







Standards: EN 61386-24 **Reference Standards**: NF P 98-332, EN 12613 & EN 50520

NOTE: GEOSUB conduits come with a cable guide and two protective caps at each conduit's edge.

In 50m coil packaging an internal safety strap is placed on the 25th meter to keep the initial shape of the coil unchanged when its external straps are snipped off.





Patents Protected: 1009810, 1009158. EP2698792. 1008090

GEOSUB® IAS (in coils)

Properties

450Nt (type 450)
Light
-5°C
+90°C
Pliable
With electrical insulated characteristics
IP40 (coupler connected) IP 68 (coupler bonded with KOUVIDIS sealant)
Flame propagating

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Ageing resistance	UV stabilized (≥ 5years)
Internal guide	Cable guide with minimum tensile strength 650Nt
Color marking	Longitudinal stripes of LOW thickness and indelible color indicate the power of the protected cables
Antistatic Technology	Protection against static electricity

→ Double structured wall conduits, corrugated outside and smooth inside, printed with their basic properties, packed with special **BLACK** safety straps and affixed with an informative waterproof indelible mauve label.

Ideal for buried underground power and telecommunication networks, urban development projects, urban development and construction projects.

Туре	Part number	D out	min		kg	13.6m
Ø32	2006032	32	23.8	50	4,20	40000
Ø40	2006040	40	31.4	50	5,86	31500
Ø50	2006050	50	39.8	50	6,99	21000
Ø63	2006063	63	51.0	50	10,59	14000
Ø75	2006075	75	61.5	50	14,21	10000
Ø90	2006090	90	76.3	50	20,05	7000
Ø110	2006110	110	92.7	50	26,09	4500
Ø125	2006125	125	106.1	50	30,57	3500
Ø160	2006160	160	138.4	25	25,19	1900
Ø200	2006200	200	171.1	25	32,43	1225

See page 99 for max. loading quantities.

Light Type (L450)











Standards: EN 61386-24

Reference Standards: NF P 98-332, EN 12613 & EN 50520

NOTE: GEOSUB conduits come with a cable guide and two protective caps at each conduit's edge.

In 50m coil packaging an internal safety strap is placed on the 25th meter to keep the initial shape of the coil unchanged when its external straps are snipped off.



All product's certificates are available at www.kouvidis.com

GEOSUB® IAS (in coils) RED

Properties

Resistance to compression	450Nt (type 450)
Resistance to impact	Light
Lower temperature range	-5°C
Upper temperature range	+90°C
Resistance to bending	Pliable
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP40 (coupler connected) IP 68 (coupler bonded with KOUVIDIS sealant)
Resistance to flame propagating	Flame propagating

Additional properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Ageing resistance	UV stabilized (≥ 5years)
Internal guide	Cable guide with minimum tensile strength 650Nt
Color marking	Longitudinal stripes of indelible color indicate the power of the protected cables
Antistatic Technology	Protection against static electricity

→ Double structured wall conduits, corrugated outside and smooth inside, printed with their basic properties, packed with special BLACK safety straps and affixed with an informative waterproof indelible black label.

Ideal for buried underground power and telecommunication networks, urban development projects, urban development and construction projects.

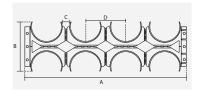
Туре	Part number	D out	min		kg {	13.6m
Ø32	2014032	32	23.8	50	4,20	40000
Ø40	2014040	40	31.4	50	5,86	31500
Ø50	2014050	50	39.8	50	6,99	21000
Ø63	2014063	63	51.0	50	10,59	14000
Ø75	2014075	75	61.5	50	14.21	10000
Ø90	2014090	90	76.3	50	20,05	7000
Ø110	2014110	110	92.7	50	26,09	4500
Ø125	2014125	125	106.1	50	30,57	3500
Ø160	2014160	160	138.4	25	25,19	1900
Ø200	2014200	200	171.1	25	32,43	1225

4 Plastic conduit systems buried underground

Fittings











Spacer (8 folded)

Properties

Raw material	Specially stabilized thermoplastic PP, halogen free and heavy metals free (RoHS)
Electrical characteristics	With electrical insulated characteristics
Resistance to flame propagating	Flame propagating
Temperature resistance range	-5°C to +90°C
Compatibility (conduit nominal outer diameter)	Ø50 Ø63 Ø75 Ø90 Ø110 Ø125 Ø160

Instructions for Installation

It is recommended that spacers should be placed at 1.5 meters intervals, so that the appropriate distance between them can be maintained.

+ Spacers have two rows of support points (four support points each). They can also be easily joined, thanks to their intelligent connection system. Moreover, their special construction allows them to be easily separated in a single move, in one row or in fewer positions, depending on the requirements of the specific installation. Finally, there is sufficient support width at each position to prevent the creation of point loads on the conduits.

Туре	No. of Positions	Part [*] Numper	A	B	C	D		11
Ø50	8(4x2)	6121050	323	101	28	78	45	4500
Ø63	8(4x2)	6121063	376	116	28	91	25	2400
Ø75	8(4x2)	6121075	425	131	28	103	20	1920
Ø90	8(4x2)	6121090	484	147	28	118	72	2016
Ø110	8(4x2)	6121110	575	210	30	140	42	672
Ø125	8(4x2)	6121125	664	233	38	163	32	384
Ø160	4(2x2)	6121160	452	299	60	219	39	468

4 Plastic conduit systems buried underground

Fittings

RAL 9004 black





Standards: EN 61386-24



Packaging parts

RAL 9004 black





All product's certificates are available at www.kouvidis.com

Connection couplers with hooks

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Temperature range	-5 °C to +90 °C
IP ingress protection	IP 40 (coupler connected to GEOSUB conduit) IP 44 (coupler connected to GEONFLEX conduit) IP 68 (coupler bonded with KOUVIDIS sealant)
Ageing resistance	UV stabilized

They carry three perimetric internal double hooks on each side and an inner lip for the proper conduits fixing and assembling.

		//	
Туре	Part number		11
Ø32	6101032	12	756
Ø40	6101040	12	576
Ø50	6101050	12	192
Ø63	6101063	15	150
Ø75	6101075	15	15
Ø90	6101090	10	10
Ø110	6101110	5	5
Ø125	6101125	5	5
Ø160	6101160	2	2
Ø200	6101200	3	3

End caps

Properties

Raw material
Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE

Ageing resistance
UV stabilized

+ Ideal for the protection of the internal side of conduits. Caps offered with a ventilation hole.

Туре	Part number		11
Ø32	6100032	40	2520
Ø40	6100040	30	1620
Ø50	6100050	30	720
Ø63	6100063	30	510
Ø75	6100075	15	210
Ø90	6100090	15	120
Ø110	6100110	8	80
Ø125	6100125	8	64
Ø160	6100160	6	6
Ø200	6100200	6	6

4 Plastic conduit systems buried underground

Required materials



Adhesive & Sealant

Properties

Paste
18 hours
No
Insoluble
Approx. 10 minutes
No
White
$+5^{\circ}$ C to $+40^{\circ}$ C
12-18 months

→ Capable to provide IP68 ingress protection. Free of silicone, isocyanides, solvents and halogens.

Part number		11
6001004	6x310ml	-

Required materials



Lubricant for plastic pipes and fittings

Properties

Consistency	Paste
Solubility in water	Insoluble
Color	White
Working temperature	+15°C to +40°C
Ph value	8.5 - 9.5
Shelf conditions	+5°C to +25°C

→ Based on synthetic raw materials, is water miscible and fulfills the current requirements of the German DVGW institute after the basis of type examination VP641.

Part number		<u>t</u>
6001005	5kg	-

Multi layer conduits

Multi-layer conduits are fully adapted to the new technology of plastics, ensure greater mechanical strength, facilitate installation due to their multiple benefits and guarantee an improved environmental footprint. KOUVIDIS has been active in the multi-layer conduit market since 2011, having developed innovative products for various applications.

5

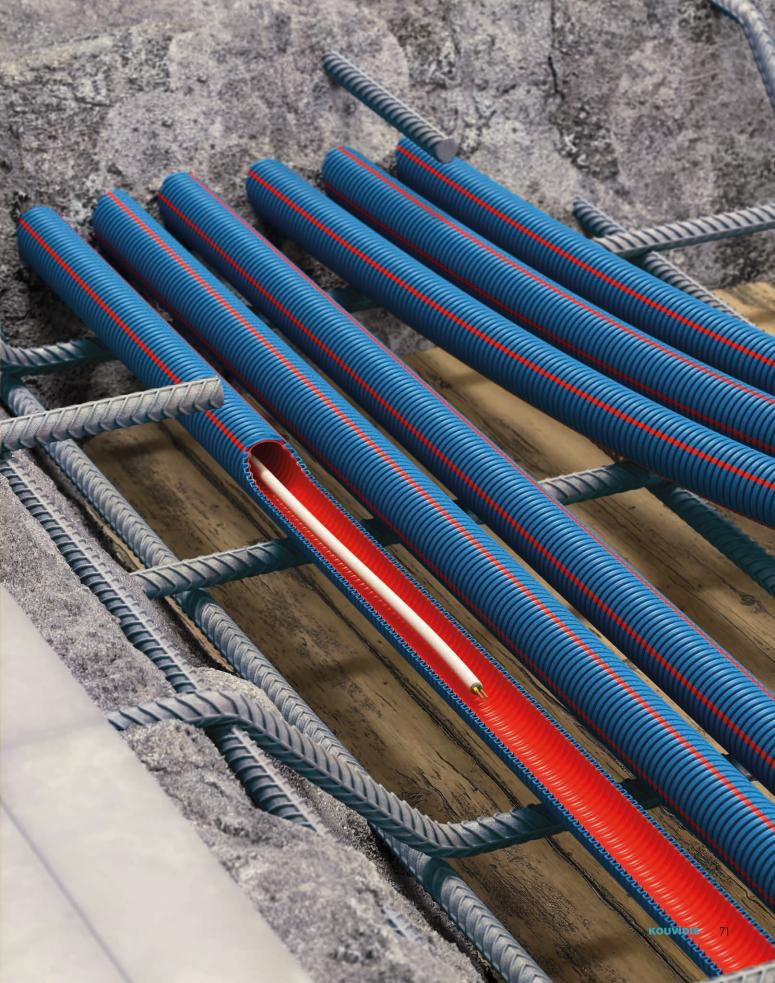
Plastic conduit systems

for concealed type installations











Light Type (320Nt)













Application Standards: EN 61386.22, EN 50642, EN 60754-2

Reference Standards: EN 61034-2. NF P 98-332

Assembled with

Connection couplers for DUROFLEX PLUS / SUPERFLEX PLUS conduits











Antistatic Technology





Patents Protected: 1009810, EP2698792, 1009975

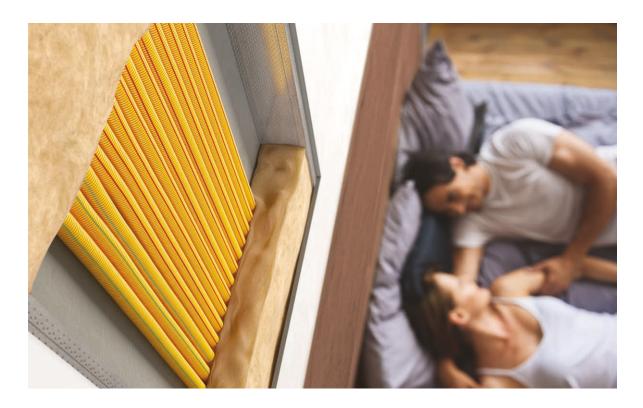
SUPERFLEX® PLUS IAS pliak	ole conduit	22332
Properties		Class
Resistance to compression	320 Nt	2
Resistance to impact	1J (at -15°C)	2
Lower temperature range	-15°C	3
Upper temperature range	+105°C	3
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteristics	2
Protection against ingress of solid objects Protection against ingress of water	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0
Additional properties		
Raw material	Halogen free, heavy metals free (RoHS) specially stabilized thermoplastic PP	and
Low friction (internal layer)	Special material (slip) speeds up the rocables	uting of
Anti - electromagnetic technology	Absorbs a part of the electromagnetic r emitted by the cables	adiation
Rodent repellent	Not attractive to rodents	
Color marking / Longitudinal lines	Longitudinal stripes of indelible color in power of the protected cables	dicate the
Halogen free	No toxic or corrosive gases in case of fi	re
Low smoke	Better visibility of escape ways	
* ** * * * * * * * * * * * * * * * * *	Borner Committee	

+ Three layer conduit consists of a corrugated external wall, an internal layer that follows the geometry of the outer wall and a third independent layer of longitudinal lines. Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps. Ideal for concealed type installations in plasterboard, cavity wall and sub-ceiling. A special slip material is added on its internal layer, facilitating the smooth insertion of the cables.

Protection against static electricity

Туре	Part number red / green	D out	min		kg	(m)
Ø16	2010016 / 2017016	16	10,9	50	2,34	5860
Ø20	2010020 / 2017020	20	14,2	100	5,60	5600
Ø25	2010025 / 2017025	25	18,8	50	3,59	2600
Ø32	2010032 / 2017032	32	24,9	25	2,31	1100

SUPERFLEX® PLUS



The ideal solution for concealed installations in plasterboard



KOUVIDIS launches SUPERFLEX PLUS, a new generation of 3layer conduits (320Nt) with anti-electromagnetic technology, for concealed type installations in plasterboard, sub-ceiling and cavity walls.

SUPERFLEX PLUS new 3layer conduits consist of 3layers. The outer corrugated layer ensures the conduit's necessary flexibility and mechanical strength. The inner layer, ensures the smooth insertion of cables. A third independent layer of longitudinal lines creates a long lasting color marking between electrical and telecommunication cables. The inner layer of SUPERFLEX PLUS plastic conduit incorporates a new innovative anti – electromagnetic technology which absorbs a part of the electromagnetic radiation emitted by the cables.

A special slip material is added in the internal layer of SUPERFLEX PLUS conduits, reducing by 40% the friction (test conducted according to IEC/TR 62470) and thus the applied force that is required for cable routing.



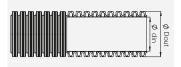


Medium Type (750Nt)

RAL 3020 red / inner layer

RAL 5019 blue / outer layer







Application Standards: EN 61386.22, EN 50642. EN 60754-2

Reference Standards: EN 61034-2.

NF P 98-332

Assembled with

Connection couplers for DUROFLEX PLUS / SUPERFLEX PLUS conduits











Patents Protected: 1009810, 1009144, EP2698792, 1009158

DUROFLEX® PLUS IAS pliable	conduit	33332
Properties		Class
Resistance to compression	750 Nt	3
Resistance to impact	2J (at -15°C)	3
Lower temperature range	-15°C	3
Upper temperature range	+105°C	3
Resistance to bending	Pliable	2
Electrical characteristics	With electrical insulated characteris	stics 2
Protection against ingress of solid objects Protection against ingress of water	min IP65	6 5
Resistance against corrosion	Not applicable	0
Tensile strength	None declared	0
Resistance to flame propagating	Non flame propagating	1
Suspended load capacity	None declared	0
Additional properties		
Raw material	Halogen free, heavy metals free (R specially stabilized thermoplastic F	
Ageing resistance	UV stabilized (≥ 5 years)	
Low friction (internal layer)	Special material (slip) speeds up the cables	ne routing of
Rodent repellent	Not attractive to rodents (the internal layer incorporates rod	ent repellent)
Color marking	Longitudinal stripes of indelible col power of the protected cables	or indicate the
Halogen free	No toxic or corrosive gases in case	of fire
Low smoke	Better visibility of escape ways	
Antistatic Technology	Protection against static electricity	

+ Structured wall conduits. The external wall of the conduit is corrugated and the internal wall is smooth. Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative blue color label.

Ideal for concealed type installations in concrete, hollow walls and underplaster.

Туре	Part number red / green	D out	din		kg	(m)
Ø20	2009020 / 2016020	20	13,2	50	3,78	3200
Ø25	2009025 / 2016025	25	18,1	25	2,53	1800
Ø32	2009032 / 2016032	32	23,7	25	3,49	1400

DUROFLEX® PLUS



Faster and easier than ever before



Applying its manufacturing know-how on double structured wall conduits, KOUVIDIS becomes the 1st company in Europe daring such an investment by manufacturing double wall conduits in small diameters 020, 025 and 032.

Following the method of co-extrusion of 3 layers along with the use of special stabilized and halogen free raw materials, DUROFLEX® PLUS conduits achieve high mechanical and chemical resistance and make electrician's work easier and safer in concealed installations especially in concrete.

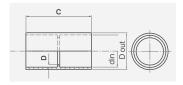
The corrugated external wall provides the necessary flexibility while the internal smooth wall ensures easier cable insertion. The third independent layer of longitudinal lines creates a long-lasting color marking between electrical installations and communication systems.

A special slip material is also added in the smooth internal layer of DUROFLEX® PLUS conduits, reducing by **50% the friction** (acc. to IEC/TR 62470) and thus the applied force that is required for cable routing.

5 Plastic conduit systems for concealed installations

Fittings

RAL 7035 Light grey



Application Standards: EN 61386.01 **Reference Standards:** EN 50642

Assembled with SUPERFLEX PLUS IAS DUROFLEX PLUS IAS





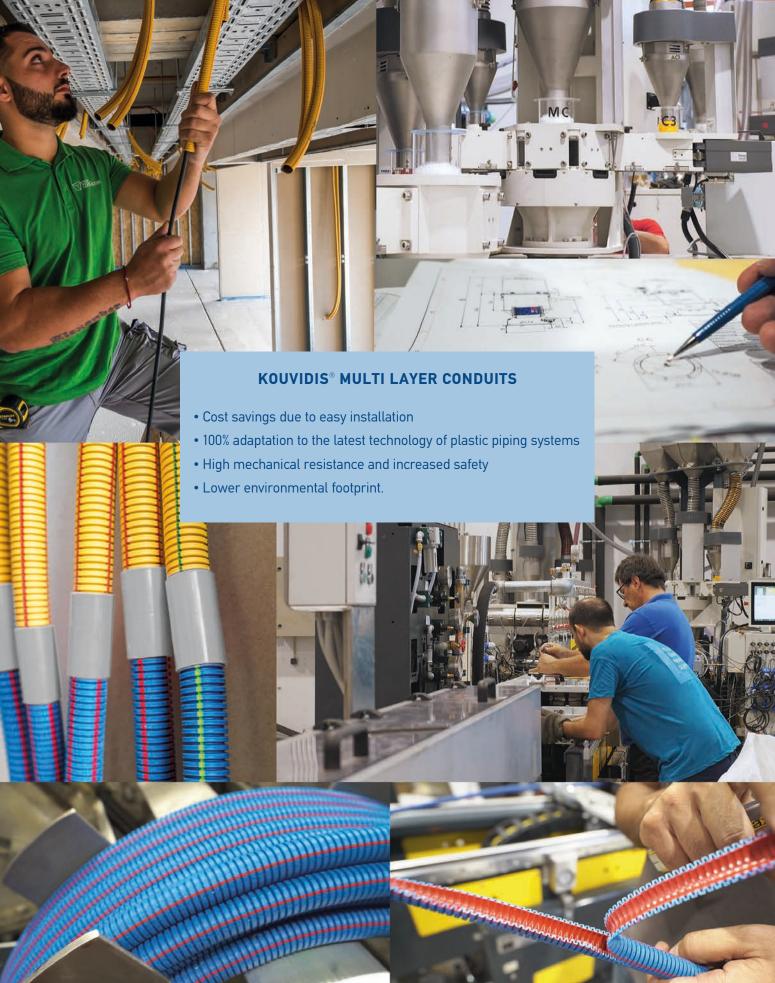


Coupler for DUROFLEX®PLUS IAS / SUPERFLEX®PLUS IAS conduits

Properties

Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic HDPE
Protection against ingress of solid objects Protection against ingress of water	min IP65
Temperature range	-25°C to +60°C
Electrical characteristics	With electrical insulated characteristics
Resistance to flame propagating	Non flame propagating
Halogen free	No toxic or corrosive gases in case of fire
Antistatic Technology	Protection against static electricity

Туре	Part number	Dout	din	C		11
Ø16	4017016	17.7	16.0	52.3	40	1920
Ø20	4017020	23.5	20.0	51.5	30	1890
Ø25	4017025	28.5	25.0	51.5	30	1440
Ø32	4017032	37.0	32.0	65.0	20	560



Junction boxes

RAL 9016 White RAL 5019 blue



134 mm	
5 mm	36.8 _{mm}



Standards: EN 60670-22, EN 50642





MULTIBOX®

Properties

Lower temperature range	-15°C
Upper temperature range	+60°C
Resistance to heat	650°C
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP30
Resistance to flame propagating	Non flame propagating

Additional Properties

Raw material	Heavy metals free (RoHS), specially stabilized
	thermoplastic HIPS (base and separator) and
	PP (cover plate)
Conduit entries	All side walls (2 at the base)

+ Ideal for flush mounting and cavity wall installations. It can be extended to all directions (horizontal, vertical, diagonal). All sides consist of small 5x5mm removable square knock outs permitting the entry of cable or conduits of different dimensions up to Ø35 while special separators can define different electrical circuits.

Туре	Part number		<u>t</u> t
10x6	3012004	36	_
10x13	3012005	18	-
Cover plate	3112001	36	-
Separators	3012002	36	-

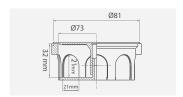
Packaging do not contain cover plates.

Junction boxes

RAL 9016 White









Standards: EN 60670-22, EN 50642



ASSEMBLED ROUND Ø73

Properties

Lower temperature range	-15°C
Upper temperature range	+60°C
Resistance to heat	650°C
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP2X
Resistance to flame propagating	Non flame propagating

Additional Properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic HIPS (base) and PP (cover plate)
Conduit entries	8 up to Ø21

+ Ideal for flush mounting and cavity wall installations. Junction boxes can be assembled lengthwise.

Туре	Part number		<u>†</u>
Junction box	3010101	100	-
Cover plate	3110001	100	-

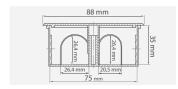
Packaging do not contain cover plates.

Junction boxes

RAL 9016 White









Standards: EN 60670-22, EN 50642



SQUARE 7.5 x 7.5

Properties

Lower temperature range	-15°C
Upper temperature range	+60°C
Resistance to heat	650°C
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP2X
Resistance to flame propagating	Non flame propagating

Additional Properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic HIPS (base) and PP (cover plate)
Conduit entries	6 up to Ø25, 2 up to Ø20

+ Ideal for flush mounting and cavity wall installations.

Туре	Part number		<u></u>
Junction box	3010102	50	-
Cover plate	3110002	50	-

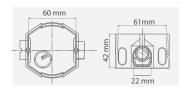
Packaging do not contain cover plates.

Switch boxes











Standards: EN 60670-22. EN 50642



MULTI COMBINATION GANG

Properties

Lower temperature range	-15°C
Upper temperature range	+60°C
Resistance to heat	650°C
Electrical characteristics	With electrical insulated characteristics
IP ingress protection	IP2X
Resistance to flame propagating	Non flame propagating

Additional Properties

Raw material	Heavy metals free (RoHS), specially stabilized thermoplastic PP
Conduit entries	7 up to \varnothing 18 (1 of them at the base up to \varnothing 22)
No of screws dome	2 of 15mm screw length

+ Ideal for flush mounting installations. Designed with serrated inner surface, to ensure perfect mechanism mounting. The special spouts allow faultless boxes alignment and the 41mm depth creates the right installation space for switches with dimmer. Standardized combination distance 71mm which can be extended to 91 with the use of distance adaptors.

Туре	Part number		<u>†</u>
Multi combination gang	3011002	100	-
Distance adaptor	3211002	50	2700

Screw specification: plastic screw 3.3mm with minimum length 15mm.

infoTechnical information

84	Signs Explanation
85	Product Labels
86	Color Identity
87	European Legislation
88	European Norms
89	Ingress Protection
90	Classification Code (acc. to EN 61386.1)
92	Classification Code (acc. to EN 61386-24)
93	Installation Guide
94	Raw Materials Guide
95	Chemical Resistance
96	Application Field
98	Loading Guidelines
100	Product Index
101	Patent Degrees
102	Support
103	Contact us

SIGNS EXPLANATION

All the below mentioned signs can be found on packagings, labels or on the company's technical documentation.



Product Conformity to all requirements of relative European Directives.



The product and its production process are inspected and approved by VDE German institute



Certification body of Quality Management System EN ISO 9001



Certification body of Environmental Management System EN ISO 14001



Certification body of Occupational Health and Safety Management System ISO 45001



The product does not contain hazardous substances acc. to 2011/65/EU RoHS Directive. Certification body VDE



Compliance with REACH Regulation EC/1907/2006 about chemicals



Compliance with Biocidal Products Directive 98/8/EC (BPD) concerning the placing of biocidal products on the market



Product with extra UV stability



Halogen free product



Product with up to 99,9% antimicrobial protection



High impact resistance in extreme temperature conditions (-45°C)



Double wall technology. Pipes with double walls make cable introduction faster and easier.



Faster and easier cable insertion



Conduits with anti - electromagnetic technology



Min-max permanent application temperature



Non flame propagating product



Product that propagates flame



Minimum compression strength



Minimum impact strength



Product with extra UV stability



Ingress protection against solid objects and water (EN 60529)



Friction reduction at the internal wall of double walls conduits



Product is not an attractive food to rodents



Low smoke during combustion (EN 61034-2)



Product is made of halogen free raw materials – absence of fluorine, iodine, bromine, chlorine, etc EN 50642



Antimicrobial product that inhibits by up to 99.9% the growth of harmful bacteria.



Product Certificate for its antimicrobial effectiveness from the BIOCOTE British Institute (ISO 22196)



Patent protected product



Environmentally friendly product. Halogen free, heavy metals free (RoHS), low smoke, SVHC-free (REACH) with 100% eco-friendly packaging

PRODUCT LABEL EXPLANATION

All KOUVIDIS products have distinctive labelling on their packaging and are easily traceable. The color of the label indicates the type of the product while the information mentioned refer to its characteristics and mechanical strengths.



Label found on conduit bundles or coils



Label affixed on fittings packaging

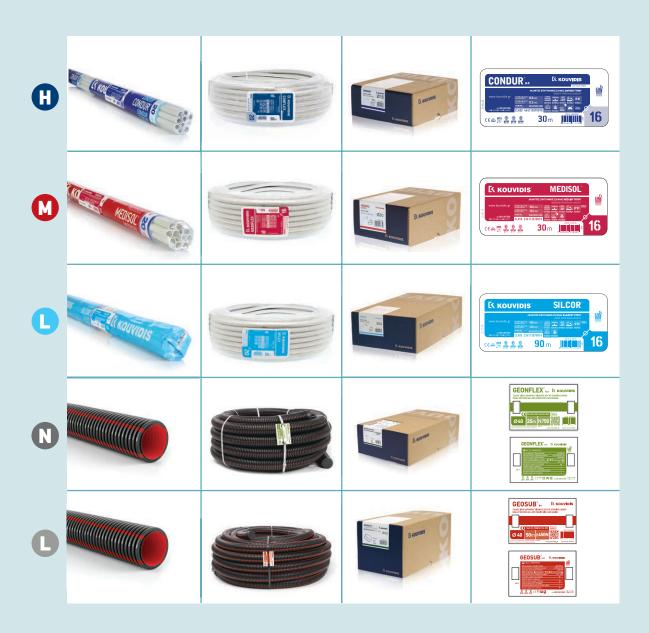


Label affixed on double wall conduits (double side label)



COLOR IDENTITY (LABEL COLOR EXPLANATION)

KOUVIDIS has developed a very helpful color identity for each product family in order to facilitate installer and retailer work. The color identity provides easiness when identifying, storing and distributing while it secures recognition and uniformity of each product family.



EUROPEAN LEGISLATION

All Product's declarations for the below mentioned Directives are available at www.kouvidis.gr

Low Voltage Directive 2014/35/EU (LVD)

supersedes 2006/95/EC

LVD is applied to electrical equipment designed for the use with a voltage rating of between 50 to 1000 V for AC and between 75 and 1500 V for DC.

Electrical equipment may be placed on the market under the conditions that it has been manufactured in accordance with the safety LVD objectives, that it does not endanger the safety of persons, domestic animals or property when properly installed, maintained and used in applications for which it was made. Electrical products are presumed to conform to the safety LVD objectives when manufactured in compliance with Harmonized Standards or with the safety provisions of Electrical Equipment Commission or International Electrotechnical Commission.

In order to be placed on the EU market, an established Technical Documentation and a Declaration of Conformity must be drawn up and they should be affixed with the CE Marking. When electrical equipment is subject to other Directives, apart from LVD, which also provide CE Marking, then the CE label indicates the Conformity to the requirements of those Directives. The new LVD directive keeps the same scope and safety objectives.

KOUVIDIS was the first Greek company to have had all of its products affixed with the CE marking in the Greek market at the early 1990's.

Restriction of Hazardous Substances Directive 2015/863/EU amending Annex II to Directive 2011/65/EU (RoHS)

The RoHS 1 Directive (2002/95/EC) for the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred as Restriction of Hazardous Substances or RoHS) was adopted in February 2003, by the European Union and was implemented in a legislation form, on the 1st July 2006 by all Member States. RoHS2 Directive was published on 1 July 2011 in order to increase the e-waste amount that is appropriately treated, to reduce the volume that goes to disposal and to reduce the administrative burdens ensuring coherency with newer policies and legislation. The RoHS 3 (EU Directive 2015/863) adds Category 11 (catch-all) products and adds four new restricted substances - all phthalates. Category 11 products include all other electronic and electrical equipment not covered under the other categories. The expanded list for RoHS 3 is thus as follows: Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr (VI)), Polybrominated biphenyls (PBB), Polybrominated diphenlys ether (PBDE), Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP). The above mentioned substances should not be used or contained beyond the specific allowed limits which are defined by the Directive. KOUVIDIS has adopted RoHS Directive since 2006 by using heavy metals free raw materials in all of its products.

REACH Regulation EC/1907/2006

REACH Regulation EC/1907/2006 concerns the Registration, Evaluation, Authorisation and Restriction of chemical substances. It has been valid since 2 June of 2007 and basically it improves and simplifies the past European legislation in chemicals. It concerns all chemicals and aims to ensure a high level of protection of human health and environment from the risks that can be posed by chemicals.

This Regulation also promotes the development of alternative test methods for the assessment of hazards posed by chemical substances. Chemical manufacturers and importers should identify and manage accordingly the hazards of the produced and traded in the market chemical substances.

KOUVIDIS, being fully compliant with REACH regulation since 2011, designs and manufactures products for electrical applications, which, when used within their specification, shall not release any harmful substances.

Directive 98/8/EC (BPD)

The Biocidal Products Directive was first published in 1998 and entered in force on 14 May 2000 aiming to harmonize the European market for biocidal products and their active substances, to provide a high level of protection for people, animals and environment through risk assessment, and to ensure that products are sufficiently effective against the target species. Biocidal products are any chemical substances intended to control unwanted, render harmless, and prevent the action of any harmful organism such as insects, bacteria, virus and fungi. The directive is applicable to 23 different product types relevant to the footwear and leather industries and human hygiene covering fiber, leather, rubber, and polymerized materials. The BPD can be seen as a precursor to the REACH legislation, as this followed a similar pattern of identification, assessment and authorization.

KOUVIDIS antimicrobial conduit system MEDISOL AM - MEDIFLEX AM is fully compliant with the BPD Directive.

EUROPEAN NORMS

EN 61386.01

The Standard specifies the general requirements and tests for Conduit Systems, including conduits and conduit fittings, for the protection and management of insulated conductors and/or cables in electrical installations or in communication systems up to 1000V AC and/or 1500V DC. This Standard applies to metallic, non-metallic, and composite Conduit Systems, including threaded and non-threaded entries which terminate the system. This Standard does not apply to Enclosures and Connecting Boxes which come within the scope of EN 60670.

EN 61386.21

Part 2-1 specifies the requirements for Rigid Conduit Systems. Rigid Conduits cannot be bent or bent only with the use of mechanical aids, with or with-out special treatment.

EN 61386.22

Part 2-2 specifies the requirements for Pliable Conduit Systems. Pliable Conduits can be bent by hand with reasonable force, but are not intended for frequent flexing.

EN 61386-24

This standard specifies requirements and tests for conduit systems buried underground including conduits and conduit fittings for the protection and management of insulated conductors and/or cables in electrical installations or in communication systems.

EN 50642

The European Standard EN 50642 specifies a method for the determination of the content of halogens in Cable Management System (CMS) components

or products made of polymeric material(s). The determination is made by combustion and subsequent analysis of the combustion product by Ion Chromatography. This standard specifies how CMS components or products can be declared as halogen free. This European Standard is for environmental performance only.

EN 60670-1

This part of IEC 60670 Standard applies to Boxes, Enclosures and parts of enclosures for electrical accessories with a rated voltage not exceeding 1000 V AC and 1500 V DC intended for household or similar fixed electrical installations, either indoors or outdoors.

EN 60670-22

This Part specifies the particular requirements for connecting boxes, for junction(s) and tapping(s).

EN 61034-2

Measurement of smoke density of cables burning under defined conditions. The standard contains test procedures and requirements. Smoke density test is combustion of an important aspect of performance evaluation, as it relates to the degree of difficulty for personnel evacuation.

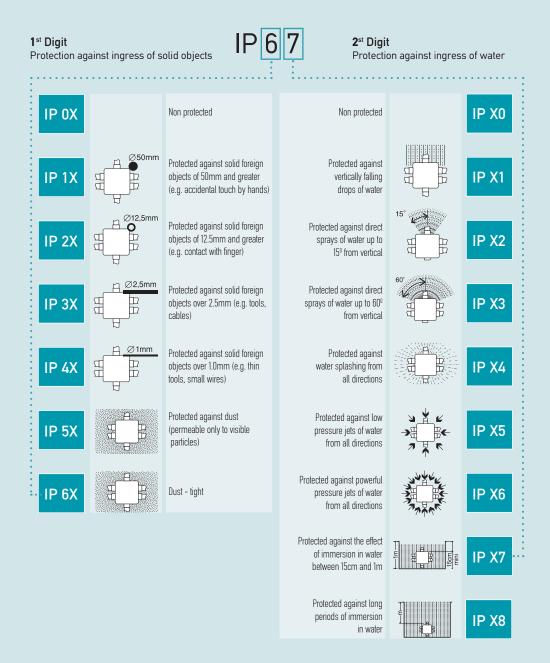
ISO 22196

ISO 22196 test method is used to evaluate the antibacterial activity of antibacterial plastic surfaces inhibiting or killing the growth of test microorganisms. The Standard describes the test procedure for Staphylococcus aureus and E.coli microorganisms. Additional pathogen bacteria like, Salmonella, Listeria monokytogenes, Pseudomonas aeruginosa, Klebsiella Pneumoniae, Lactobacilli, Streptococcus pyogenes and Legionella can also be tested by this method.

DEGREES OF PROTECTION (IP CODE)

According to EN 60529

The IP international protection code consists of two digits (e.g. IP67). The first digit stands for resistance to ingress of solid objects and dust, denominated from 0 to 6. The second digit stands for resistance against ingress of water and is denominated from 0 to 8. The IP international protection index digits are shown in the following table:



CLASSIFICATION CODE FOR CONDUIT SYSTEMS

According to EN 61386.01

The classification code is made of 12 digits, according to EN 61386.01, and determines conduits main properties. The first 5 digits are the most usually displayed at marking and classify conduits according to their compression resistance, impact resistance, minimum and maximum operating temperature and bending resistance. Classification code is demonstrated on the below table:

Di	igits	Class	0	1	2	3
		Resistance to compression	None declared	Very light (125Nt)	Light (320Nt)	Medium (750Nt)
	2	Resistance to impact	None declared	Very light (0.5 kg/100 mm - 0.5J)	Light (1.0 kg/100 mm - 1J)	Medium (2.0 kg/100 mm - 2J)
	3	Lower temperature range	None declared	+5⁰€	-5⁰€	-15 ⁰ C
		Upper temperature range	None declared	+60°C	+90 ₀ C	+105°C
	5	Resistance to bending		Rigid	Pliable	Pliable/Self recovering
	6	Electrical characteristics	None declared	With electrical continuity characteristics	With electrical insulating characteristics	With electrical continuity and insulating characteristics
	7	Protection against ingress of solid objects				Solid foreign objects over 2.5mm (e.g. tools, cables)
	8	Protection against ingress of water	None declared	Vertically falling water drops	Direct sprays of water up to 15° from vertical	Direct sprays of water up to 60° from vertical
	9	Resistance against corrosion	Not applicable	Low protection inside and outside	Medium protection inside and outside	Medium protection inside, high protection outside
	10	Tensile strength	None declared	Very light	Light	Medium
	11	Resistance to flame propagation		Non flame propagating	Flame propagating	
	12	Suspended load capacity	None declared	Very light	Light	Medium

Product example CONDUR® rigid conduit

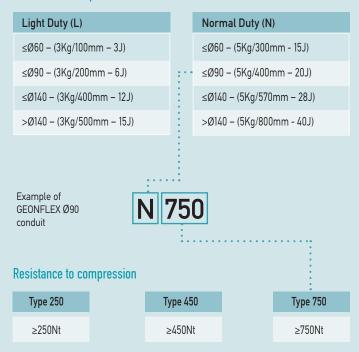
4	5	6	7	(pg 16)
Heavy (1250Nt)	Very heavy (4000Nt)			
Heavy (2.0 kg/300 mm - 6J)	Very heavy (6.8 kg/300 mm - 20.4J)			
-25°℃	-45°C			
+120°C	+150°C	+250°C	+400°C	
Flexible				
				2
Solid foreign objects over 1.0mm (e.g. thin tools, small wires)	Dust (permeable only to visible particles)	Dust - tight		6
Water splashing from all directions	Low pressure jets of water from all directions	Powerful pressure jets of water from all directions	Immersion in water between 15cm and 1m	5
High protection inside and outside				0
Heavy	Very Heavy			0
Heavy				0

CLASSIFICATION CODE FOR CONDUIT SYSTEMS BURIED UNDERGROUND

According to EN 61386-24

The classification code for buried underground conduits is made of 2 elements according to EN 61386-24 and determines the conduit's main properties. The first element is the letter "L" or "N" which classifies the conduit according to its impact resistance whereas the second one is a three digid number 250 or 450 or 750 which classifies it according to its compression resistance. Classification code is demonstrated on the table below:

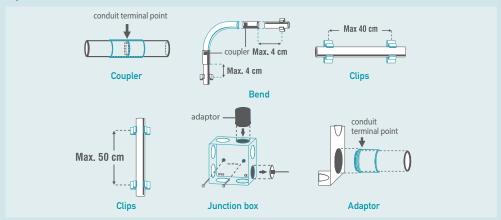
Resistance to impact



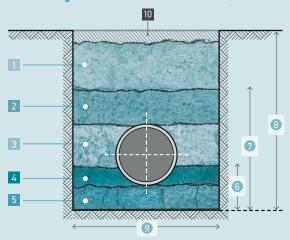
INSTALLATION GUIDE

Below you can find the installation guidelines in order ensure an appropriate structure of your conduit systems.

Exposed Installations



Buried Underground Installations (acc. to EN 1610)



Description of filling trench zones

- 1. Main backfill
- 2. Initial backfill
- 3. Sidefill
- 4. Upper bedding
- 5. Lower bedding
- 6. Depth of bedding
- 7. Depth of embedment
- 8. Trench depth
- 9. Trench width
- 10. Bottom of road construction, if any

Minimum recommended width of trench in relation to outside diameter of conduit

Nominal Diameter (DN)	Minimum trench width (OD + Xm)

 ≤ 225 OD + 0,4

OD: Outside diameter

More about trench dimensions, trench materials, installation, storage, laying, connection, trenching and inspection of buried underground conduit systems can be found on double wall conduits technical manual at www.kouvidis.com

Minimum recommended width of trench in relation to trench depth

Trench Depth (m)	Minimum trench width (m)
<1	No minimum width required
≥ 1 ≤ 1.75	0.80
$> 1.75 \le 4.00$	0.90
> 4.00	1.00

Conduits with outside diameter OD up to 200 mm

RAW MATERIALS GUIDE

The information contained below is typical values intended for reference and comparison purposes only. They should not be used as a basis for design specifications or quality control.

Properties	PVC	PP	HDPE	HIPS	PC	PC/ABS
Temperature Resistance (°C)	- 25 +70	-30 +135	-100 +120	-	-40 +140	- -
Impact Resistance (Kj/m²)	2.0 - 45 Kj/m²	3.0 - 30.0 Kj/m²	-	10.0 - 20.0 Kj/m²	60 - 80 Kj/m²	55 Kj/m²
Flammability UL 94	VO	V2	НВ	НВ	V0-V2	HB 0.85mm
Water Absorption (%) - 24 hours	0.06	0.08	0.01	0.20	0.15	0.25
Free of Halogen	No	Yes	Yes	Yes	Yes	Yes

PVC	Compatibility with many different kinds of additives - PVC can be clear or colored, rigid or flexible, formulation of the compound is the key to PVC's "added value".
PP	Rigid, opaque, good dimensional stability at high temperature and humidity conditions, difficult to process (blended to ease injection molding), tough.
HDPE	Flexible, translucent / waxy, weatherproof, good low temperature toughness, easy to process by most methods, low cost, good chemical resistance.
HIPS	Hard, rigid, brittle, low shrinkage translucent, impact strength up to 7 x PS, easy to process.
PC	Polycarbonates are strong, stiff, hard, tough, transparent engineering thermoplastics that can maintain rigidity up to 140°C and toughness down to -20°C or special grades even lower.

PVC	Polyvinyl chloride
PP	Polypropylene
HDPE	High density Polyethylene
HIPS	High impact Polystyrene
PC	Polycarbonate

CHEMICAL RESISTANCE

 $\label{thm:continuous} \textbf{Table below is an informational guide only with general chemical characteristics of the raw}$ materials used in KOUVIDIS products and it should not be considered as a substitute for testing under your specific conditions.

	P	P	HD	PE	P۱	/C	Р	С	P	S
	25°C	60°C								
Acetaldehyde	•	_	•	0	_	_	•	•	_	_
Acetic Acid	•	•	•	•	•	•	0	0	0	-
Acetone	•	•	•	•	_	-	-	-	_	-
Acetyl Chloride	-	-	-	_	_	-	-	-	_	-
Ammonium Chloride	•	•	•	•	•	•	•	•	•	•
Ammonium Hydroxide	•	•	•	•	•	•	-	-	•	•
Aniline	•	•	•	•	_	_	-	-	_	-
Benzene	•	0	•	•	-	-	-	-	-	-
Benzoic Acid	•	•	•	•	•	•	-	-	•	•
Boric acid (10%)	•	•	•	•	•	•	•	•	•	•
Bromine Gas	-	-	0	-	0	0	0	-	-	-
Bromine Water	-	-	0	-	•	0	0	-	-	-
Butyl Alcohol	•	•	•	•	•	•	•	0	•	•
Calcium Hydroxide		•	•	•	•	•	-	-	•	•
Carbon Disulphide	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	0	-	0	0	0	-	0	-	-	-
Chlorine Water	0	0	-	-	•	0	•	0	-	-
Chlorinated Gas	-	-	0	-	-	-	•	•	-	-
Citric Acid	•	•	•	•	•	•	•	•	•	•
Cyclohexanol	0	-	•	•	•	-	•	0	-	-
Diethylene Glycol	•	•	•	•	0	-	•	0	•	•
Diethyl Ether	•	-	0	-	0		-	-	-	-
Dioxin	•	0	•	•	-	-	-	-	-	-
Diesel Oil	•	•	•		•	•	•	-	0	-
Ethylene Chloride	0	-	-	-	-	-	-	-	-	-
Ethylene Oxide GAS	0	0	0	0	-	-	0	-	Ν	Ν
Fluorine GAS	-	-	-	-	-	-	0	0	Ν	Ν
Formic Acid	•	•	•	•	•	0	-	-	0	-
Glycerin	•	•	•	•	•	•	•	•	•	•
Hydrochloric Acid (30%)	•	•	•	•	•	•	-	-	•	0
Hydrofluoric Acid (25%)	•	•	•	•	•	•	-	-	-	-
Hydrogen	•	•	•	•	•	•	•	•	•	•
Hexane	•	0	•	-	•	-	0	-	-	-
Methyl Alcohol	•	•	•	•	•	0	•	0	•	0
Mineral oil	•	0	•	•	•	•	•	•	•	•
Nitric Acid (<25%)	•	•	•	•	•	•	•	•	0	0
Oxalic Acid	•	0	•	•	•	•	•	•	•	-
Petroleum	•	0	•	•	•	0	•	0	-	-
Phosphoric Acid (50%)	•	•	•	•	•	•	•	•	•	•
Seawater	•	•	•	•	•	•	•	-	•	•
Sodium Chloride	•	•	•	•	•	•	-	-	•	•
Sulfuric Acid (<10%)	•	•	•	•	•	•	•	•	•	0
Sulfuric Acid (<90%)	0	0	0	0	-	-	-	-	-	-
Toluene	0	-	0	-	-	-	-	-	-	-
Vegetable Oil	•	•	•	0	•	•	•	•	•	•
Xylene	0	0	0	0	-	-	-	-	-	-

^{• =} Resistant against chemical attack

 ⁼ Limited Resistant against chemical attack
 - Poor resistance, not recommended

N = No Data available

APPLICATION FIELD

					2					
	CONDUR	CONFLEX	MEDISOL	MEDIFLEX	SILCOR	SIREX	CONDUR HF	CONFLEX HF	MEDISOL HF	
Classification (acc. to EN 61386-1 & EN 61386-24)	44411	44412	33411	33412	23411	22412	44441	44442	34441	
Properties										
Material	U-PVC	U-PVC	U-PVC	U-PVC	U-PVC	U-PVC	PC	PC	PC	
Resistance to flame propagation							1	Non flame prop	agating	
Halogen free	_	-	-	-	-	-	√	V	V	
Antimicrobial	_	-	-	-	-	-	-	-	-	
Color	Light grey	Light grey	Light grey	Light grey	Light grey	Light grey	Light grey	Light grey	Light grey	
Specifications										
Compression strength (Nt)	1250	1250	750	750	320	320	1250	1250	750	
Impact strength (J)	6	6	2	2	2	1	6	6	6	
Minimum temperature (°C)	-25	-25	-25	-25	-25	-25	-25	-25	-25	
Max temperature (°C)	+60	+60	+60	+60	+60	+60	+120	+120	+120	
Resistance to bending	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	
Installations			, and the second				,			
Exposed	•	•	•	•	•	•	•	•	•	
Concealed (cavity walls)	•	•	•	•	•	•	-	-	•	
Concealed (underplaster)	•	•	•	•	•	•	•	•	•	
Concrete	•	•	•	•	-	-	-	-	-	
Concealed (lavaplaster)	•	•	•	•	-	-	-	-	-	
Subfloor/Subceiling	•	•	•	•	•	•	•	•	•	
Outdoor	•	•	•	•	-	-	•	•	•	
Buried underground	•	•	•	•	-	•	-	-	-	
Wood	•	•	•	•	•	•	•	•	•	
Application fields										
Industrial buildings	•	•	•	•	-	-	•	•	•	
Public buildings	•	•	•	•	•	•	•	•	•	
Sanitary areas	•	•	•	•	•	•	•	•	•	
Renewable energy systems	•	•	•	•	-	-	•	•	•	
Infrastructure projects	•	•	•	•	-	-	•	•	•	
Page	20	21	22	23	24	25	34	35	36	

Industrial building: airports, tunnels, subways, process lines, labs, warehouses, manufacturing applications, engine rooms, computer rooms, etc.

Public buildings: Shopping centres, theater, museums, cinemas, hotels, residential block buildings, etc.

Sanitary areas: hospitals, clinics, laboratories, spaces requiring implementation of the HACCP system, schools, nurseries, sports centres, care homes, etc.

Renewable energy systems: photovoltaic and wind parks, electric power stations, etc

Infrastucture projects: motorways, road networks, bridges, tunnels, pedestrianization, shaping of public spaces, rehabilitation of historic centers, etc.

		3	1			4				5		
MEDIFLEX HF	MEDISOL AM	MEDIFLEX AM	MEDISOLAMHF	MEDIFLEX AMHF	GEONFLEX bar	GEONFLEX	GEOSUB bar	GEOSUB	DUROFLEX PLUS	SUPERFLEX PLUS		
33442	33411	33412	34441	33442	N750	N750	L450	L450	33332	22332		
				20								
PC	U-PVC	U-PVC	PC	PC	HDPE	HDPE	HDPE	HDPE	PP Non-flower	PP		
V	_		√	Flame propag √	√	√	√	√	Non flame p	√		
_	√	√	V √	√ √		_	_	_	_	_		
Light grey	Signal White	Signal White	Signal White	Signal White	Black/Red	Black/Red	Black/Red	Black/Red	Blue/Red	Yellow/Black		
Light grey	Signal Wille	Signal Wille	Signal Wille	Signal Wille	Diduk/Neu	DidCk/Reu	Didck/Neu	DidUNINEU	Diue/Neu	Telluw/Dlack		
750	750	750	750	750	750	750	(50	(50	750	200		
750	750	750	750	750	750	750	450	450	750	320		
2	2	2	6	2	Normal	Normal	Light	Light	2	1		
-25	-25	-25	-25	-25	-5	-5	-5	-5	-15	-15		
+120	+60	+60	+120	+120	+90	+90	+90	+90	+105	+105		
Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Rigid	Pliable	Pliable	Pliable		
•	•	•	•	•	_	_	_	_	•	_		
•	_	_		_				_	•	•		
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•	•	•	•	•	•	•	•	•	_	_		
37	50	51	52	53	62	63	64	65	45/74	44/72		

The above applications are only recommendations due to the technical specifications of KOUVIDIS products.

National or local restrictions and prohibitions must always be considered.

- Not recommended Solution

• Recommended Solution

Best choice acc. to the manufacturer



LOADING GUIDELINES

Means of loading

At the below table you can find the maximum loading conditions regarding the pallets and the means of transportation that KOUVIDIS uses for deliveries abroad:

	(m)	left s	pace	(m)	left s	pace	(m)	left s	pace	(pcs)	left s	pace	(pcs)	left s	space
3	3,0 x 1,15 x 0,65m	m ²	m ³	1,15 x 1,15 x 2,20m	m ²	m ³	1,15 x 1,15 x 2,60m	m ²	m ³	1.20 x 0.80 x 2.20	m ²	m ³	1.20 x 0.80 x 2.60	m ²	m ³
	6	6,68	18,51	10	-	-	-			11	2,79	6,56	-		
20HC															
	24	7,00	18,52	-			20	1,16	3,08	-			25	3,96	10,49
40HC															
13,6m	32	3,87	10,06	-			22	2,30	5,97	-			32	6,03	15,68

Loading 3m conduits

In regards to the loading of conduit pallets the following information should be considered in order to secure the safety of the people and the products. There are two ways to lift and store/load the conduits pallets:

1. You can lift the pallet from the one side by placing the forks along the middle wooden frame. Ensure that the forks are fully under the pallet before lifting.



2. You can lift the pallet from its edge by placing the forks in the pallet's openings. In this case you will need larger pallet forks with minimum length 1,70m. Ensure that the forks are fully under the pallet laying under the first two wooden frames before lifting.



The below table depicts the maximum loading capacity (m) of double wall pipes $\mathsf{GEONFLEX}^\circ$ & GEOSUB° in different means of transportation.

PRODUCT	Part Number	Coils/ bundles (m)	Truck (13,6 m)	Container 20t (m)	Container 40t HC (m)
	2007032	25	33750	N/A	N/A
	2007040	25	26250	8750	21250
	2007050	25	16250	5700	13000
GEONFLEX®	2007063	25	11500	4000	9300
N750	2007075	25	6250	2100	4800
in coils	2007090	25	3750	1200	2900
(pg. 63)	2007110	25	3000	1000	2300
	2007125	25	3125	1125	2500
	2007160	25	1900	525	1375
	2007200	25	1225	450	1050
	2008032	50	40000	N/A	N/A
	2008040	50	31500	10000	24000
	2008050	50	21000	7000	16500
	2008063	50	14000	4750	11000
	2009075	50	7750	2500	6000
	2008090	50	5500	1750	4000
	2008110	50	4000	1250	3000
	2008125	50	3500	1200	2750
	1007075	6	10080	-	-
GEONFLEX®	1007090	6	6912	-	-
N750	1007110	6	4800	-	-
in bars	1007125	6	3072	-	-
(pg. 62)	1007160	6	2520	-	-
(59. 02)	1007200	6	1800	-	-
	1007250	6	960	-	-
	2006032/2014032	50	40000	N/A	N/A
GE0SUB [®]	2006040/2014040	50	31500	10000	24000
L450	2006050/2014050	50	21000	7000	16500
in coils	2006063/2014063	50	14000	4750	11000
(pg. 65)	2006075/2014075	50	10000	3250	8000
	2006090/2014090	50	7000	2000	5500
	2006110/2014110	50	4500	1500	3500
	2006125/2014125	50	3500	1000	2750
	2006160/2014160	25	1900	525	1375
	2006200/2014200	25	1225	450	1050
	1006075	6	10080	-	-
GEOSUB®	1006090	6	6912	-	-
L450	1006110	6	4800	-	-
in bars	1006125	6	3072	-	-
(pg. 64)	1006160	6	2520	-	-
(Pg. 0-)	1006200	6	1800	-	-
	1006250	6	960	-	-

PRODUCT INDEX

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PATENT DEGREES (FOR CABLE PROTECTION PRODUCTS)

No Patent 1009810	Antistatic technology
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No Patent 1008090	Double wall conduits
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No Patent 1009734	Spacers for buried underground networks
No Patent 1003838	Extended junction box for concealed type electrical installations
No Patent 1007270	Plastic conduit system for cable protection
No Patent 1009774	Plastic conduit with corrugated internal layer for lower frictions
No Patent 1009975	Anti-electromagnetic technology



SUPPORT



Technical support

You can contact KOUVIDIS Technical Support department at +30 2810 831 500 daily from Monday to Friday 8 am to 4 pm Eastern Time. Our highly trained people can offer responsible technical support for any interested person, professional or individual, for the right and safe use of our products.



Documentation

Learn more about the properties and the proper installation of our plastic conduit systems through our technical manuals that are available, free of charge, at our's retailers stores that belong at our authorized network. Alternatively, you can download it directly from our website www.kouvidis.com or we can arrange to send it at your place (just contact us at +30 2810 831 500 daily from Monday to Friday 8 am to 4 pm Eastern time).



Web

The whole content of this Catalogue together with our product and company certificates and our technical manuals are available on our company's website www.kouvidis.com.

CONTACT US





EMM. KOUVIDIS SA VIOPA Tylissos 715 00, Heraklion, Crete T.: +30 2810 831500, F: +30 2810831502 info@kouvidis.gr



EMM. KOUVIDIS SA Lofos Kyrillou, 193 00 Attiki Odos, Aspropyrgos Interchange, Exit 4 T.: +30 210 5571292



EMM. KOUVIDIS SA 12 km National Road Thessaloniki - Katerini, 574 00, Sindos T.: +30 2310 795855





EMM. KOUVIDIS (CYPRUS) LTD Cyprus 2, Kykladon Str., Latsia Industrial zone, Nicosia 2234 T: +357 22 343707, F: +357 22 343710 info@kouvidis.com.cy



Germany

EMM. KOUVIDIS DEUTSCHALND GmbH Überseeallee 10 , DE-20457, Hamburg T.: +49 (0) 40 3060 5959, F: +49 (0) 4030605958 info@kouvidis.de















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