

Plastic conduit systems  
**with antimicrobial technology**



**SOLUTIONS FOR SANITARY FACILITIES  
AND PLACES WHERE HACCP &  
ISO 22000 ARE APPLICABLE**



A HEALTHIER  
ENVIRONMENT IS  
OUR MAIN PRIORITY...



we design innovative  
conduit systems that contribute  
to our better hygiene



## SAFETY IN ELECTRICAL INSTALLATIONS

plastic conduit systems  
with antimicrobial technology



MEDISOL® AM

MEDISOL® AMHF

MEDIFLEX® AM

MEDIFLEX® AMHF

750Nt made from PVC

750Nt made from halogen free raw materials

at a glance...

Even in the cleanest environments where good hygiene practices are employed, microbial contamination will occur because of factors like air circulation and human contact.

KOUVIDIS has designed **MEDISOL® AM - MEDIFLEX® AM** and **MEDISOL® AMHF - MEDIFLEX® AMHF** conduit systems with antimicrobial technology exclusively to cover sensitive areas where hygiene is top priority.

The antimicrobial technology incorporated in KOUVIDIS conduit systems can ensure a reduction of up to 99% of the most dangerous pathogenic microbes (MRSA, E-coli) within 24 hours.

Their installation in sanitary areas and places where HACCP and ISO 22000 are applicable, is considered necessary to ensure a safe and a healthy environment.



ANTIMICROBIAL PROTECTION.  
AN ISSUE THAT DESERVES  
YOUR ATTENTION

Antimicrobial protection reduces the risk of multiplication of the microbes found into the building materials, when is incorporated on their surface, and can be beneficial in keeping the numbers of microbes relatively low in between episodes of cleaning, providing better hygiene conditions.

## did you know that...

**200.000**

cases of infections

due to consumption of infected foods  
(source: EFSA)

**4 million**

patients

in the EU are affected by hospital acquired  
infections caused by microorganisms

**2,5 million**

additional days  
of hospitalization

due to infections caused by microorganisms,  
while the additional expenses for the days of  
hospitalization amount to around 1.5 billion  
euros (EMA)

**15.000**

patients

are hospitalized every year due to the  
Legionnaires 'disease (source: CDC)

## while also...

In most of sanitary areas (food industries, hospitals, laboratories etc.) piping systems present a high concentration of microbes on their surfaces, as they do not require daily cleaning.

Source: EMA / European Medicines Agency | ECDC / European Centre for Disease Prevention and Control | CDC / Centers for Disease Prevention and Control EFSA / European Food and Safety Authority



# what should I know . . .



## What is antimicrobial protection?

Antimicrobial protection is the inhibition of growth/multiplication of microbes that are plagued over a surface creating stigmas, stench, product degradation and the most important cross contamination (microbial transmission). More specifically, microbes or otherwise micro-organisms are characterized as living organisms too small to be seen with the unaided human eye. They can be found everywhere in the natural and manmade environment and they will reproduce as long as the conditions they are living in are favorable.



## In which places is required and why?

In sanitary areas and public gathering spaces such as hospitals, medical centers, operating theatres, workshops, nurseries, schools, sports centers, laboratories, food industries and areas subject to the requirements of the HACCP and ISO 22000 systems, where people are exposed to a wide range of microbes because of contaminated surfaces. The presence of pathogenic microbes in these environments posed the risk of infectious disease in people using these facilities because of cross contamination (risk of pathogens infection). An effective strategy to reduce the risk of cross contamination is the integration of antimicrobial technology in every construction product intended to be used in these environments.



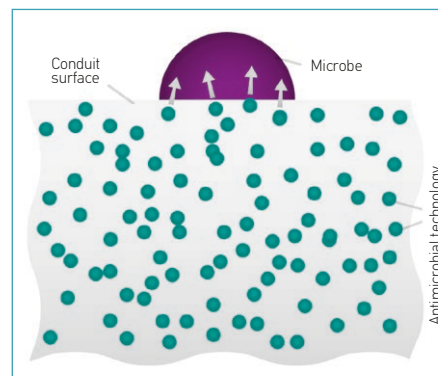
## What type of microbes are dangerous?

Some types of microbes are used for the benefit of mankind, for example in food production. Other microbes are harmful to man because they are the cause of infectious diseases. These pathogenic microbes are a major cause of morbidity and mortality over the world. The most pathogenic microbes that can contaminate a conduit surface are Staphylococcus (MRSA), Salmonella, Klebsiella Pneumoniae and E-coli.



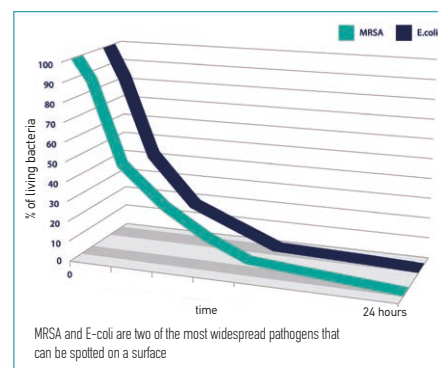
## How does it work?

The antimicrobial technology is incorporated in the material which KOUVIDIS conduit systems are 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 conduits, 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. More specifically, they damage their proteins, destroy their cell membrane structure, cause oxidative damage to the interior and create a genetic disorder preventing DNA replication and as a result inhibition of their reproduction.



## When does antimicrobial activity begin and how long it last?

The antimicrobial activity of a treated surface is direct and grow over time compared to an untreated surface that a microbe can multiply and reproduced, posing a risk of infection. Antimicrobial efficacy is tested 24 hours later, according to the International Standard ISO 22196. KOUVIDIS conduits can reduce the microbes Escherichia coli (E-coli) and Staphylococcus (MRSA) up to 99% within this time.




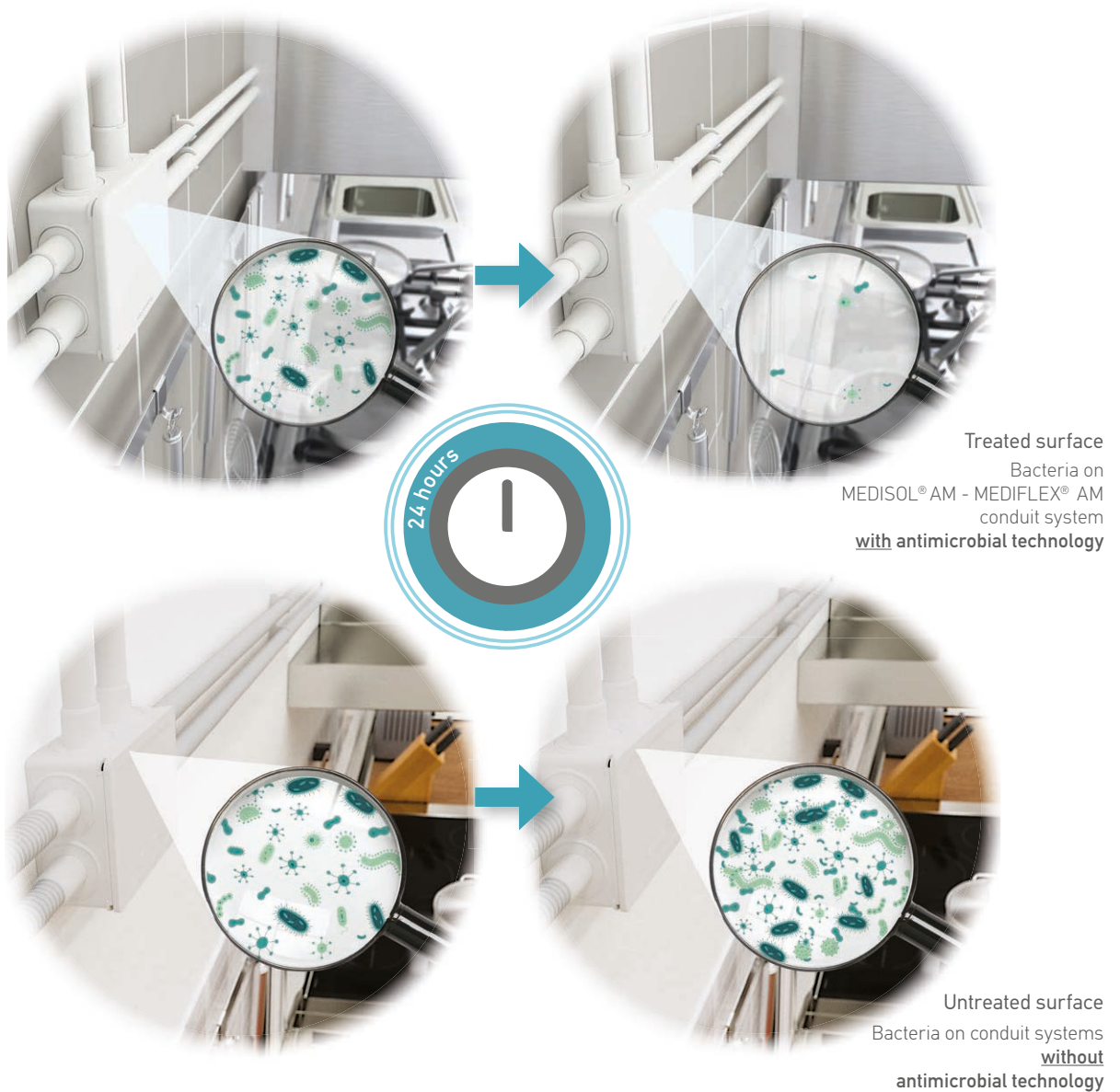
acc. to ISO 22196

## Is an antimicrobial product safe?

Antimicrobial efficacy is tested according to the International Standard ISO 22196 and is controlled by the British laboratory BIOCOTE. Antimicrobial technology is also full in compliance with European Directive EU 98/8/EC concerning the placing of biocidal products on the market (hereafter Regulation (EU) No 528/2012 that has been applied since 1<sup>st</sup> of September 2013). The above ensure the antimicrobial activity and efficacy.

ISO 22196 (Measurement of antibacterial activity on plastic surfaces)

CERTIFICATE OF EFFICACY		
		
Certificate No. 1018012.100/6400 Customer Ref. 80/025 DATE RECEIVED 24/01/2012		
<b>SAMPLE DETAILS</b> KOUVIDIS		
<b>METHOD:</b> Determination of Antibacterial Activity using Test Based on ISO 22196		
<b>DATE ANALYSED</b> 25/01/12 <b>DATE REPORTED</b> 27/01/12		
RESULTS (as cfu cm <sup>2</sup> )		
SAMPLE	SPECIES	REDUCTION (%)
COVER MEDISOL AM	E. coli	>99.94%
SEAL MEDISOL AM	E. coli	>99.94%
GROMMET MEDISOL AM	E. coli	>99.94%
BOX MEDISOL AM	E. coli	>99.94%
		>99.49%



## how does it work?

**Antimicrobial technology** is constantly active inhibiting the growth or multiplication of microbes, facilitating the cleaning of these products. Studies have shown that antimicrobial materials reduce the amount of microbial contamination in people-containing environments by approximately 95% compared to untreated environments.

ATTENTION! Antimicrobial protection complements the cleanliness that is essential in all hygiene-sensitive and public areas thus minimizing the growth of microorganisms that are dangerous to man. In no way is it a substitute for cleanliness.

# the advantages of antimicrobial technology

MEDISOL® AM - MEDIFLEX® AM & MEDISOL® AMHF - MEDIFLEX® AMHF antimicrobial conduit systems have been exclusively designed to cover sensitive areas where hygiene is top priority. Their basic advantages are as follows:



99% of dangerous microorganisms eliminated within 24 hours.



Integrated technology that prevents the growth of microbes including mould and fungi.



Reduction of contamination (risk of pathogens transmission) due to cleaner surfaces.



The antimicrobial protection against microbial colonization ultimately extends product's lifetime.



Greater effectiveness against viruses due to the antimicrobial activity of the active ingredients that appear on product's surfaces.



The best way to keep an environment clean and healthy.



## the design



### Need

The protection of hygiene and the reduction of biological risks due to the growth and multiplication of pathogenic microbes in sanitary areas.



### Research

Designing a conduit system that will be full in compliance with the specifications for cable management and protection, incorporating antimicrobial technology which will neutralize the pathogenic bacteria reducing the danger of contamination.



### Manufacturing technology

The antimicrobial technology is incorporated in the raw material of the product during the manufacturing process to ensure continuous, lifelong, antimicrobial protection and reduction of up to 99% of pathogenic microbes, while at the same time it will not affect the mechanical properties of the conduit system.



### Generation

Two integrated conduit systems, MEDISOL® AM - MEDIFLEX® AM (made from PVC) and MEDISOL® AMHF - MEDIFLEX® AMHF (made from halogen free raw materials) in nominal outer diameters from Ø16 to Ø63, according to EN 61386.01, along with a complete series of fittings (bends, couplers, clips, adaptors) and junction boxes.





### Application field

Spaces requiring implementation of HACCP or ISO 22000 management systems (industrial spaces & food warehouses, restaurants, etc.), hygiene areas (hospitals, clinics, operating rooms, laboratories) & public gathering places (schools, nurseries, sports centers, care homes).



### Distribution network

A distribution network with authorized wholesalers of electrical materials with more than 500 sales points all over the Greek and Cypriot territory, served daily by our 20 privately owned low emission trucks.



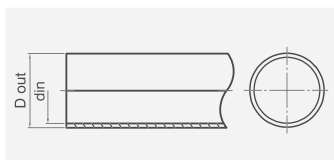
### Environmental footprint

Made from 100% eco-friendly materials that comply with the requirements of the European RoHS and REACH regulations, regarding the use of chemicals and hazardous substances, respectively, and can be recycled at the end of their product life cycle, without burdening the environment.

## Medium Type (750Nt)



RAL 9003  
signal white



### 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](http://www.kouvidis.com)



## MEDISOL® AM rigid conduit

33411



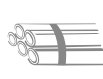


### Properties

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

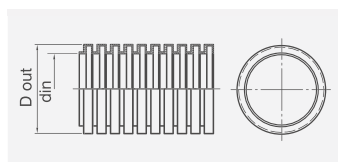
+ Engraved with laser printing and packed with safety straps in red color 100% recyclable polyethylene film. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces (schools, nursery homes/rooms & sport centers) and areas requiring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

Type	Part number					
Ø16	1044116	16	13.0	30	2,91	6000
Ø20	1044120	20	16.9	30	3,94	3900
Ø25	1044125	25	21.7	30	5,34	2310
Ø32	1044132	32	28.4	15	3,64	1755
Ø40	1044140	40	36.1	9	3,05	1071
Ø50	1044150	50	45.3	9	3,97	702
Ø63	1044163	63	58.0	9	5,77	396

## Medium Type (750Nt)



RAL 9003  
signal white



### Standards:

EN 61386.22, ISO 22196

### Assembled with

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



Patent No: 1007372

Hellenic Industrial Property Organization



## 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

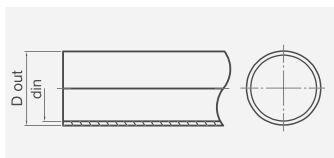
+ Marked using embossed printing and packed with 100% recyclable polyethylene film including safety straps and an informative red color label. Harmonized with European directive 98/8/EC is ideal for sanitary areas (hospitals, medical centers & laboratories) and public spaces (schools, nursery homes/rooms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

Type	Part number	D out	min din		kg	(m)
Ø16	2044116	16	10.8	50	2,87	3600
Ø20	2044120	20	14.2	50	3,95	3200
Ø25	2044125	25	18.4	25	2,74	1800
Ø32	2044132	32	24.2	25	3,87	1400
Ø40	2044140	40	31.1	20	4,05	880
Ø50	2044150	50	39.3	20	5,27	400
Ø63	2044163	63	52.1	20	7,12	360

## Medium Type (750Nt)



RAL 9003  
signal white



**Standards:** EN 61386.21, ISO 22196,  
EN 60754-1, EN 60754-2

### Assembled with

MEDISOL AMHF 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](http://www.kouvidis.com)



## MEDISOL® AMHF rigid conduit

34541

### Properties






Properties		Class
Resistance to compression	750Nt/5cm	3
Resistance to impact	6J (at -45°C)	4
Lower temperature range	-45°C	5
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
Less smoke than PVC	Better visibility of escape ways
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.

Type	Part number					
Ø16	1044016	16	13.1	30	2.18	6000
Ø20	1044020	20	16.8	30	3.02	3900
Ø25	1044025	25	21.7	30	4.40	2310
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

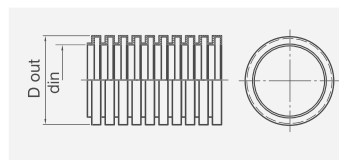
Note: Product with minimum order quantity requirement



## Medium Type (750Nt)



RAL 9003  
signal white



**Standards:** EN 61386.22, ISO 22196,  
EN 60754-1, EN 60754-2

### Assembled with

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



**Patent No.: 1007372**

Hellenic Industrial Property Organization



## MEDIFLEX® AMHF pliable conduit

33542

### Properties

Class

Resistance to compression	750Nt/5cm	3
Resistance to impact	2J (at -45°C)	3
Lower temperature range	-45°C	5
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
Less smoke than PVC	Better visibility of escape ways
Ageing resistance	UV stabilized
Rodent repellent	Not attractive to rodents

+ 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.

Type	Part number	D out	din	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

## Medium Type (750Nt)



RAL 9003  
signal white









## M 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
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Type	Part number						
Ø16	4344116	16	13.0	27	55	10	460
Ø20	4344120	20	16.9	35	65	10	420
Ø25	4344125	25	21.7	36.7	90	10	170
Ø32	4344132	32	28.4	47.6	125	6	48
Ø40	4344140	40	36.1	52.9	130	6	84
Ø50	4344150	50	45.3	62	163	4	36
Ø63	4344163	63	58.0	77	191	4	16

## Medium Type (750Nt)



RAL 9003  
signal white









## MEDISOL® AMHF bend

### Properties

Resistance to impact	6J (at -45°C)
Temperature range	-45°C to +120°C

### Additional properties

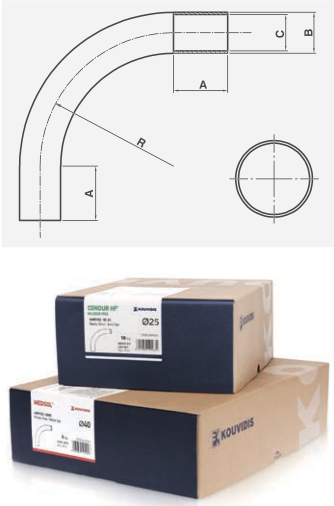
Raw material	Halogen free, heavy metals free (RoHS) and specially stabilized thermoplastic PC
Halogen free	No toxic or corrosive gases in case of fire
Less smoke than PVC	Better visibility of escape ways

Type	Part number						
Ø16	4344016	16	13.1	27	55	10	460
Ø20	4344020	20	16.8	35	65	10	420
Ø25	4344025	25	21.7	36.7	90	10	170
Ø32	4344032	32	27.9	47.6	125	6	48
Ø40	4344040	40	35.8	52.9	130	6	84
Ø50	4344050	50	45.5	62	163	4	36
Ø63	4344063	63	57.8	77	191	4	16

All product's certificates  
are available at [www.kouvidis.com](http://www.kouvidis.com)

Standards & Directives: EN 61386.21  
ISO 22196, EN 60754-1, EN 60754-2,  
EU 98/8/EC (BPD)

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



Basic properties for Bends

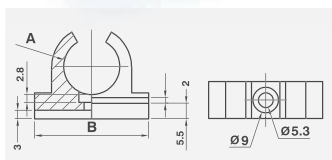
Antimicrobial technology	Resist the growth of bacteria by up to 99% within 24 hours
Electrical characteristics	With electrical insulated characteristics
Ageing resistance	UV stabilized
Resistance to flame propagating	Non flame propagating
Ingress protection	min IP65
Rodent Repellent	Not attractive to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

Note: Bends do not contain coupler within their packages.

## Fittings



RAL 9003  
signal white



## 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

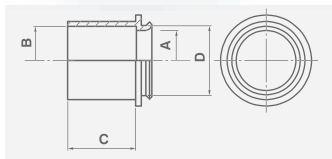
- + They can be mounted with the use of 5mm screws and plugs. They have side slots for easy positioning to rails

Type	Part number	A mm	B mm		
Ø16	4144016	15.8	35	4x50	2800
Ø20	4144020	19.8	40	4x50	2000
Ø25	4144025	24.8	46	4x30	1800
Ø32	4144032	31.8	53	30	1380
Ø40	4144040	39.8	63	20	920
Ø50	4144050	49.8	74	20	840
Ø63	4144063	62.8	88	20	840

## Fittings



RAL 9003  
signal white



## 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.

Type	Part number	A mm	B mm	C mm	D mm		
Ø16	4044016	13	16	16	20	4x30	1800
Ø20	4044020	16.5	20	20	20	4x30	1200
Ø25	4044025	21.5	25	25	33	20	1080
Ø32	4044032	27.5	32	32	33	20	840

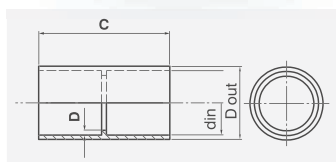
All product's certificates  
are available at [www.kouvidis.com](http://www.kouvidis.com)



## Fittings



RAL 9003  
signal white









## MEDISOL® AM couplers

### Properties

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

Ingress protection min IP65

Temperature range -45°C to +120°C

Type	Part number						
Ø16	4244016	20	16	51	1.5	30	2280
Ø20	4244020	23.5	20	51.5	1.5	30	1620
Ø25	4244025	28.5	25	51.5	1.5	30	1260
Ø32	4244032	37	32	65	2	20	480
Ø40	4244040	44.5	40	81.4	2	15	360
Ø50	4244050	55.6	50	100.5	2.5	10	200
Ø63	4244063	69.8	63	121	2.8	8	64

Standards & Directives: EN 61386.1,  
ISO 22196, EN 60754-1, EN 60754-2,  
EU 98/8/EC (BPD)



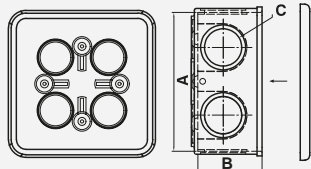
### General properties for Fittings

Temperature range	-25°C to +120°C (clips, adaptors)
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
Less smoke than PVC	Better visibility of escape ways

## Junction boxes



RAL 9003  
signal white



## MEDISOL® AM watertight with seals

### Properties

Raw aterial\*

MEDISOL® AM

PC (RoHS)

Temperature range

-25°C to +60°C

Electrical characteristics

With electrical insulated characteristics

Resistance to flame propagating

Non flame propagating

No of entries

7

Seals

Plug in seals

Ingress protection

IP55

No 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

Less smoke than PVC

Better visibility of escape ways

Antimicrobial technology

Resist the growth of bacteria by up to 99% within 24 hours

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



Standards & Directives: EN 60670-22,  
ISO 22196, EN 60754-1, EN 60754-2, EU  
98/8/EC (BPD)

+ 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.



All product's certificates  
are available at [www.kouvidis.com](http://www.kouvidis.com)

Type	Part number	A mm	B mm	C mm		
Ø16/20	3044016	67	38	21.6	10	240
Ø20/16	3044020	82	43	21.6	10	150
Ø25/32	3044025	101	51	35.1	5	100

The antibacterial efficiency of MEDISOL® AM - MEDIFLEX® AM and MEDISOL® AMHF - MEDIFLEX® AMHF conduit systems is tested according to the International Standard ISO 22196 (Measurement of antibacterial activity on plastics surfaces) under specific experimental conditions and do not reflect activity under any other conditions where a range of factors, such as temperature, humidity, various bacterial species, nutrient conditions, etc, should be taken under consideration.

# indicative application fields

## Sanitary areas Hospitals, medical centers, operating theatres, intensive care units (ICU), laboratories



Hospital rooms



Operating rooms



Medical industries

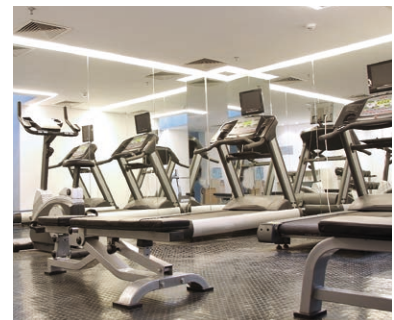
## Pubic gathering spaces Schools, nursery schools, sports centers, nursing homes



Schools



Education centers



Sports centers

## Areas requiring implementation of HACCP or ISO 22000 management systems

Laboratories, food industries & warehouses, restaurants, wastewater treatment facilities



Professional cuisines



Dairy industries



Food storages



## test results

The antibacterial efficiency of MEDISOL® AM - MEDIFLEX® AM and MEDISOL® AMHF - MEDIFLEX® AMHF conduit systems is evaluated on the basis of international Standard ISO 22196 by the leading British antimicrobial testing laboratory, BioCote.

The test results showed almost total (99%) elimination of the following microorganisms:

**MRSA (Staphylococcus)** Permanent risk to hospitalized and immunosuppressed patients.

**E-coli** Is part of the natural flora of the intestine and can cause serious food poisoning in man as well as product recall.

The integrated antimicrobial technology is equally effective also against the following microbes:

### Salmonella

Is found in animals, humans and the environment. It causes diseases such as typhoid and paratyphoid fever as well as food-borne infections.

### Klebsiella pneumoniae

A basic cause of hospital-acquired infection. It can cause pneumonia in people with weakened immune systems (alcoholics, diabetics, the elderly, children, etc.).

### Streptococci

Causative factors of pharyngitis, meningitis, pneumonia, endocarditis, etc.

### Enterococci

Can jeopardize health by causing endocarditis, urinary infections, etc.

### Pseudomonas aeruginosa

Found in soil, water, skin, medical instruments,

catheters, etc., it is a common cause of hospital-acquired infections and affects people with a weakened immune system.

### Acinetobacter baumannii

Causes pneumonia, urinary infections etc. and is responsible for thousands of deaths per year.

### Legionella

Is found in cooling towers, swimming pools, boilers, etc. It is transmitted through droplets and can cause a severe form of pneumonia.

### Lactobacilli

Coexist in the gastrointestinal tract and are used in the preparation of dairy products, beer, wine, animal feed, etc.

### Clostridium difficile

Creates breeding grounds for infection in hospitals, nursing homes, medical centres, etc. Causing diarrhoea and severe colon infections.

\* BioCote is one of the leading laboratories worldwide in the field of antimicrobial protection. It continuously develops innovative antimicrobial technologies used exclusively in products intended for areas where hygiene is a priority.








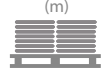











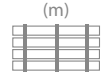



## 5 things to remember...

- 1 The antimicrobial technology is incorporated in the material which the product is made of, guaranteeing long-lasting bactericidal action. The conduit system maintains its antimicrobial activity even if any of its parts happen to get scratched.
- 2 The antimicrobial technology ensures 99% elimination of dangerous microorganisms within 24 hours.
- 3 Antimicrobial efficacy is tested according to the International Standard ISO 22196 and is controlled by the British laboratory BIOCOTE.
- 4 An antimicrobial product is effective against a wide spectrum of microbes: this includes bacteria, mould, fungi and even viruses. An antibacterial product, on the other hand, is only effective against bacteria. Antimicrobial technology that is incorporated in the raw material of a product prevents the growth of microbes including mould and fungi.
- 5 The most dangerous pathogen microbes that can contaminate a conduit surface are MRSA and E-coli. The international standard ISO 22196 focuses on the control of these specific microbes.

## ... one more thing

KOUVIDIS has more than 39 years of experience in the production of plastic piping systems and more that 7 years manufacturing experience in the production of plastic conduit systems with antimicrobial technology.

## LEGEND

	Nominal outer diameter (mm)		Packing weight (kg)		Bigger Packing for fittings (pieces)
	Nominal minimum inner diameter (mm)		Coils weight (Kg)		Dimensions (mm)
	Packing (m/coil)		Coils of pliable conduits on pallet (m)		Product Certificate for its antimicrobial effectiveness from the BIOCOTE British Institute (ISO 22196)
	Packing (m/bundle)		Certification body of Quality-Management System EN ISO 9001:2008		Product with antimicrobial technology
	Product Conformity to all requirements of relative European Directives		Certification body of Environmental Management System EN ISO 14001:2004		Product with extra UV Stability
	The product does not contain hazardous substances acc. to 2011/65/EE RoHS Directive. Certification body VDE		Certification body of Occupational Health and Safety Management System OHSAS 18001:2007		Halogen free product
	Packing (pieces/box)		Bundles of rigid conduits (m)		High impact strength in extreme temperatures of -45°C
  Distinction among the best workplaces in Greece (2017)					

KOUVIDIS is a purely Greek second - generation family company, specialized in the development and production of plastic conduit systems for cable protection, sewage and drainage since 1979. The three distribution centers (Athens, Thessaloniki, Crete) and the two subsidiaries companies in Cyprus and Germany ensure the necessary capacity to serve daily more than 500 sales points both in Greece and abroad. Holding a leading position in the Greek market, and having a clearly customer oriented philosophy, KOUVIDIS mission is to ensure Electrician's safety and to constantly improve his work through the design and the production of innovative and value-added products.



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