

MasterSan™

by **TECNICA**
Efficient Indoor Air Project

Is the **sanitizing flexible hoses** line, for
air conditioning and ventilation, which **has**
revolutionized the world of aeraulic



Contributes to obtain the credits of the **main world**
sustainability ratings in construction:
LEED®, WELL™ and BREEAM®



BREEAM®



Mapping Your Green Products
greenmap

GREEN BUILDING CONTRIBUTION

TECNICA™

for



BREEAM®

TECNICA™ has focused the **sustainability** as strategic lever of the company policy, promoting **product innovation** (materials, technologies and production techniques) and the **development of concrete actions**. We evolved our approach to resources, increased **circularity of our products** life cycle, we developed new potentials, promoted awareness of sustainability principles and transparency.

Thanks also to **GREENMAP** support and assist we implemented actions for the **specific positioning of our products on regards to the main international ratings of sustainability in construction: LEED®, WELL™ and BREEAM®.**



VENTILATION



SUCTION



DIFFUSION



FILTRATION



FRIENDLY CHEMISTRY

Unrefined and semi-finished materials made with synthetic raw materials designed to guarantee indoor human wellbeing and environmental sustainability



SANITATION

Filtration and air distribution patented materials and products, capable of sanitize the air reducing the bacterial, microbial and fungal loads in aeraulics systems



SUSTAINABILITY

Constant research of the best quality of materials in accordance with the main international regulations, without negative impacts on the environment and its resources



NON TOXIC

Patented synthetic basic mixtures not toxic that during the use or combustion do not release harmful substances in the air



RECYCLABILITY

Recyclable raw materials and semi-finished, designed for an extended life cycle without dispersion and environmental pollution



ENERGY EFFICIENCY

Products designed to improve the technical performances and contribute to increase efficiency of the aeraulic system facilitating the energy and economic saving

CLEAN AIR



The “**Clean Air for Europe**” guide lines, published by European Commission, establishes goals **to reduce the atmospheric pollution impacts on human health and environment within 2030.**

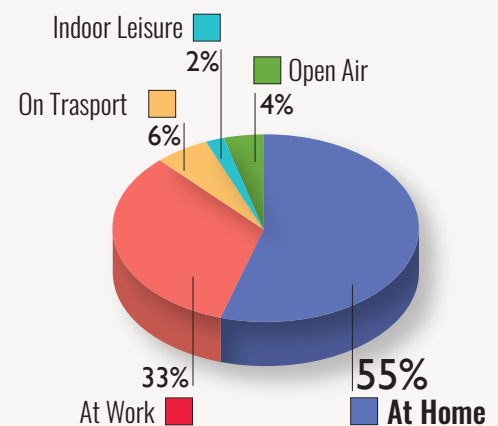
The **poor quality of the air** is the cause of many **health problems**, like asthma and cardiovascular problems, which mean **working days lost for diseases and higher costs for Health Service**, in particular for children and elderly.

For the **National Institute of Health**, in Europe people **spend over the 90% of their time in closed spaces:**

55% inside houses, **33%** inside working environment and **2%** for indoor leisure.

Only the **4%** of our time is, on average, passed outside.

For this reason the **indoor spaces play an important role to maintain the air clean.**



The air which is **sanitized** and purified from PM,
reduces up to 40% the downtime due to disease
and improves the operators' productivity.

2020/2050

The **European Commission** presented on December 1st, 2019 a plan named **European Green Deal** to make Europe climatically neutral within 2050 and to **protect human lives reducing the pollution.**

Furthermore, the European Green Deal has also the target to help the European companies to **become world leader in technologies and clean products field**, as well as assist to a fair and inclusive transition. **Fields where intends to act** are the one of climate, energy, buildings restructuring, industry and mobility.

Among the indicated objects we find:

- **Mobilize the industry for a green and circular economy**
- **Build and restructure efficiently under an energetic and resources profile**
- **Aim “zero pollution” for an environment without toxic substances.**

SANITIZED AIR

TECNICA™ is the only manufacturer of flexible hoses, diffusers and filters for air conditioning and ventilation to have a **complete program of sanitized products for air** and to have implemented the **specific positioning of its products** based on the main construction sustainability ratings: **LEED®, WELL™ and BREEAM®**.

TECNICA™ is also the only company in the world, manufacturer of sanitized flexible hoses, able to certificate for 10 Years the efficiency of the sanitizing action of its hoses.

Keep the control of air quality is possible through a **HVAC plant or directly inside the rooms** with **Tecnica™'s products** MasterSan™, FiltraSan™ and PlenuSan™.



FiltraSan™
by TECNICA



MasterSan™
by TECNICA



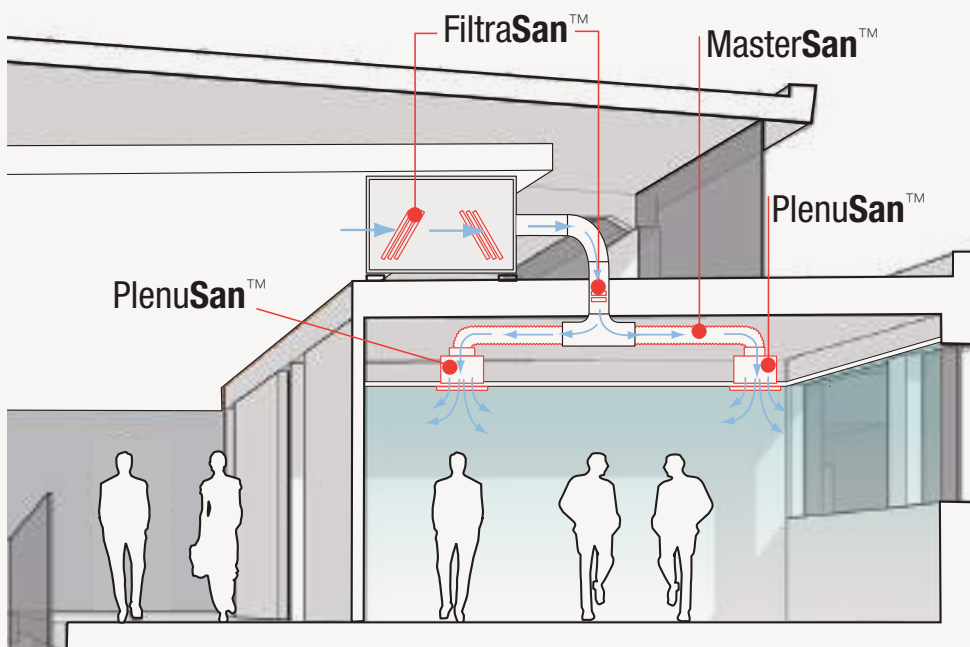
PlenuSan™
by TECNICA



FiltraSan™ is the line of **sanitized filters for air conditioning**, realized in different sizes and on different supports, which contain the **sanitized filtering media** in variable weight and thickness.

MasterSan™ is the line of **sanitized flexible hoses for air conditioning and ventilation**, which includes a complete range of hoses in polymeric film, with or without external insulation, and a range of **patented single-wall hoses** in thickness 4 and 8mm, with or without external insulation.

PlenuSan™ is the line of **sanitized plenum**, for diffusers with cones or adjustable deflectors, **internally coated with a sanitizing, antibacterial, anti-mycotic and protective film**.



The quality of the air inside of medical and health assistance structures, hospitals, is an environmental condition of crucial importance. Organisms in the air of waiting rooms, emergency rooms, hospital rooms, medical practices, common areas with high attendance, can determine threats for patients and visitors.



The WELLNESS in confined spaces is not only given by climatic comfort but also by the AIR QUALITY that people breathe in.

According to the World Health Organization, the air pollution is the greatest environmental risk for human health.

The list of health damages caused by **bacteria, mold and fungi** is constantly growing and they cause, or aggravate, respiratory diseases

such as **allergies, asthma, emphysema and chronic lung diseases.**

The Indoor air pollution has received far less attention than the issue of air pollution in open spaces. This underestimation has not allowed to achieve those advantages, especially for the occupants, that healthy buildings allow to obtain in terms of health and well-being of those who occupy them.



MasterSan™

by **TECNICA™**
Efficient Indoor Air Project

It is the revolutionary line of flexible hoses that guarantees the elimination of microorganisms that pass through their internal, improving the quality and environmental comfort, **ensuring high standards of Indoor Air Quality, as required by the World Health Organization.**

The contribution of each single product to the rating®, **WELL™** and **BREEAM®** are indicated inside the **VENTILATION** line general catalogue.



IP, EA, MR



MATERIALS, COMMUNITY

BREEAM®

MAN, WST



The air quality and internal environmental comfort improvement **guarantees high standards of Indoor Air Quality, as required by the World Health Organization**, and contributes to obtain the credits of **the main international ratings of sustainability in construction: LEED®, WELL™ and BREEAM®.**



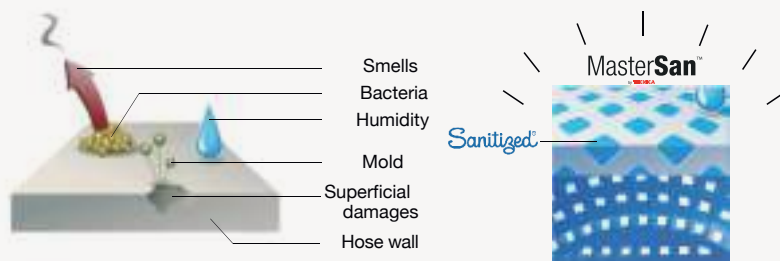
NO BACTERIA

NO MILDREW

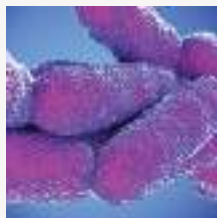


TECNICA™ AND SANITIZED®

The MasterSan™ flexible hoses line is a result of continuous Research and Development lead by TECNICA in collaboration with Sanitized. Thanks to the exclusive partnership with SANITIZED, TECNICA is the only company in the aeraulic flexible hoses sector, producing a sanitizing film capable of guarantee and certify the sanitizing efficiency for 10 years.



Aspergillus niger



Legionella Pneumophila



Molds



Pseudomonas aeruginosa



Yeast Infection



Staphylococcus Aureus



Escherichia coli



Salmonella



Listeria monocytogenes

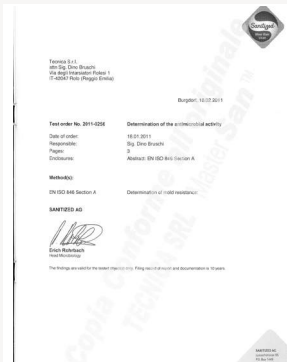
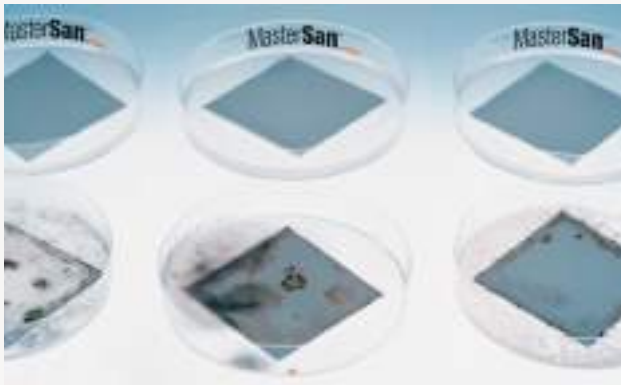
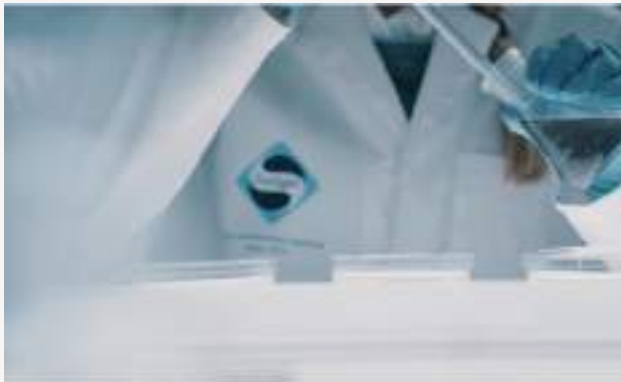
The improvement in air quality and internal environmental comfort **guarantees high standards of Indoor Air Quality**, as required by the **World Health Organization**, and contributes to obtaining the credits of the **main international ratings of sustainability in construction: LEED®, WELL™ and BREEAM®.**



BREEAM®



Case 03 0 06 Containing Data: Tecnica S.p.A.





MasterSan™ by **TECNICA™**

In **residential environments** and even more in those used for **work, shopping, entertainment, laboratories, health and community structures**, more and more situations favor the increase of indoor pollution.

The causes can be found in the multiplicity of situations favoring **the proliferation and diffusion in the air of microorganisms harmful to the health** of the occupants and consequently their

transmission to the air that circulates in the aeraulic systems.

Various technologies are used to try to sanitize the air passing through the aeraulic ducts, which in many cases release chemicals or heavy substances which are equally, if not more, harmful than the microorganisms that they should obstruct.

The polymer film of the MasterSan™ flexible hoses is free of PVC and phthalates.





SA10 MasterSan™



SA10 Therm MasterSan™



AR10 MasterSan™



AR10 Therm MasterSan™



AL/SA MasterSan™



SA10 ESP MasterSan™

Why use the MasterSan™ antibacterial flexible hoses

Because **bacteria**, as well as **fungi, germs and molds** in the air circulating in the aeraulic systems, nuzzle on the walls of the ducts and can multiply extremely quickly if the humidity and temperature conditions are such as to favor their growth and proliferation. MasterSan™ **sanitizing action** reduces the introduction of unhealthy air into confined spaces, without **releasing chemical compounds harmful to health**, and it is added to the now verified characteristics of **self-extinguishing, elasticity and strength**, suitable to **withstand the required mechanical and thermal stresses from the most advanced aeraulic systems**.

Thanks to the **exclusive partnership** of TECNICA™ with Sanitized®, the polymer film has been developed thanks to the MasterSan™ flexible hoses (free of PVC and phthalates) with the addition of an **antibacterial active principle** capable of reducing the microbial and bacterial load present inside the conducted.

The diagram illustrates the sanitizing action of MasterSan™ hoses. It shows a cross-section of a hose with air flowing through it. Blue arrows indicate the direction of air flow. On the inner surface of the hose, various bacteria and mold spores are shown being destroyed or neutralized. The Sanitized logo is visible on the left, and a circular seal on the right states "SANITIZING EFFICACY GUARANTEED 10 years TECNICA".

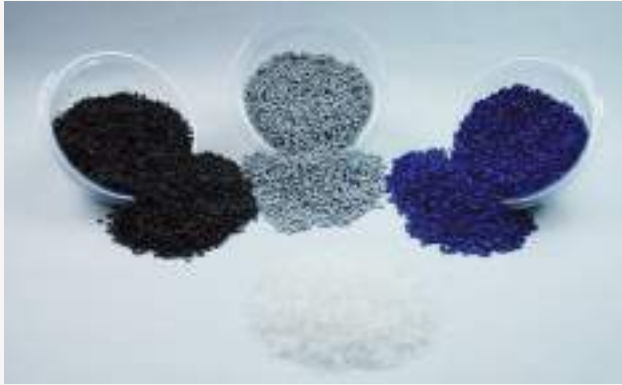
The polyolefin film of the MasterSan™ hoses has undergone severe tests to validate the effectiveness of its antibacterial action on various bacterial strains and its **effectiveness sanitizing is guaranteed and certified for 10 years**.



CUSTOMER SERVICE

TECNICA™'s approach towards its customers is to ensure assistance in finding the most **suitable technical solutions** to meet **specific needs** and in the **production choices** that permit to create **highly customized products**. The decades of experience of TECNICA™ technical and production staff is available for customers to solve special needs which may concern the composition of

the raw materials, **the possible blend with particular anti-bacterial, antistatic, flame retardant additives; flexible hoses sizing needs (diameters, lengths, spiral pitch, wire etc.)**, the marking customization, and the packaging which can be customized in order to solve both warehouses and constructions sites necessities. **The customizations do not implicate any delivery times extension.**



We optimize the packaging **dimensions in order to solve our customer warehouse or constructions sites needs.**

Our boxes are made of **cardboard certified FSC** (Forest Stewardship Council) and **we reduced of the 30% the plastic employment in our packaging materials.**



AB-AM



LR-AB-MP



LZ-CC-MP



LZ-AB-CC



Our logistic policy allow to promptly handle the orders execution

LR

Copper plated steel wire helix

LZ

Galvanized-plated steel wire

AB

Antibacterial

AM

A-magnetic steel wire helix

MP

Customized hose marking

FR

Flame Retardant

CC

Covering color



SA10/ESP Patented MasterSan™

Flexible hose produced with exclusive technology by TECNICA SRL made of:

- Activated polyolefin resins film with anti-bacterial and anti-mildew master.
- Thermo-insulating coating in netted and closed-cell of polyethylene foam.
- External protection in activated polyolefin resins film.
- Embedded steel wire helix.

The assembly of materials for the construction of the flexible conduit does not require the use of chemical agents, glues or adhesives.

Thermal resistivity at 20°C $R = 0,12m^2 K/W$ (UNI EN 12664-2002)

MasterSan™ in collaboration with:



TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	WORKING TEMPERATURE	PRODUCTION DIAMETERS	AIR SPEED	PRESSURE	CURVATURE RADIUS
Grey	10m standard	-20° + 90°C (peak +115°C)	from 40mm to 254mm	max 20m/sec	max 200 mmH ₂ O	1,2 - 1,8 x Ø

PRODUCTION DIAMETERS

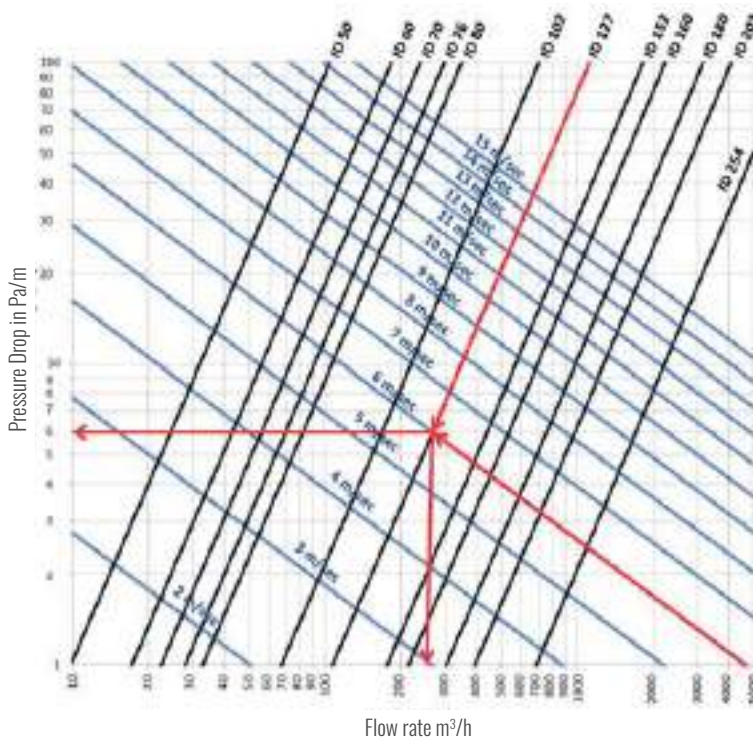
40*	51	63	70	76	80	90*	102	110*	121*
127	133*	140*	152	160	165	180	203	254	

*Diameters available on request

Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air Temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES

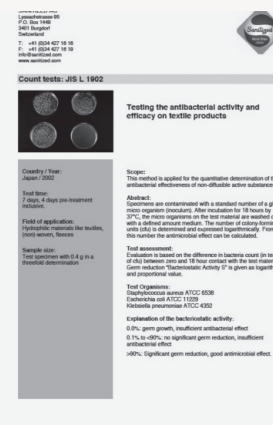
To calculate the flow rates and pressure drops of the other diameters, use the beside diagram.

DIAMETER	AIR SPEED 8m/s		AIR SPEED 10m/s	
	WORKING PRESSURE	WORKING VACUUM	CURVATURE RADIUS	WEIGHT
[mm]	[bar]	[bar]	[mm]	[gr/m]
51	0,7	0,18	35	96
63	0,7	0,15	42	115
70	0,6	0,13	49	128
80	0,5	0,09	56	154
102	0,4	0,08	70	200
127	0,4	0,07	92	254
152	0,2	0,05	105	308
160	0,15	0,05	110	331
180	0,15	0,05	130	438
203	0,15	0,04	140	492
254	0,08	0,03	175	600




CERTIFICATIONS

SANITIZATION

FIRE REACTION



SANITIZED TECHNOLOGY
MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT Class 1 (D.M. 26/06/84)

EU Class B-s2, d0 (EN 13501-1:2009)

GREEN BUILDING

Thanks also to the support of GreenMap, products manufactured by Tecnica srl contribute to obtain the credits of the major international rating systems for sustainable buildings:



LEED
Contributes to credits:
IP, EA, MR














WELL
Contributes to credits:
MATERIALS, COMMUNITY



BREEAM
Contributes to credits:
MAN, ENE, WST

For further details regarding the specific contributions to the credits indicated, contact Tecnica Srl

APPLICATIONS

								
OEM	Residential	Smooth surface	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant
								
Calibrated Diameters*	REACH Certified	RoHS Certified	Halogen Free	Building	Transport	Air Conditioning	CMV	Non-magnetic*
								
Wall Trace	CMV transport means	CMV mech. means	Prolonged anti condensation	Recreational Boats				

*on request

WIRE OPTIONS

ADDITIVE OPTIONS

SERVICE OPTIONS

AM non-magnetic inox wire

UV * anti UV

MP customized marking



SA10/ESP 8mm Patented MasterSan™

Flexible hose produced with exclusive technology by TECNICA SRL made of:

- Activated polyolefin resins film with anti-bacterial and anti-mildew master.
- Thermo-insulating coating in netted and closed-cell of polyethylene foam (th. 8mm).
- External protection in activated polyolefin resins film.
- Embedded steel wire helix.

The assembly of materials for the construction of the flexible conduit does not require the use of chemical agents, glues or adhesives.

Thermal resistivity at 20°C **R = 0,24m² K/W (UNI EN 12664:2002)**

MasterSan™ in collaboration with:



TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	WORKING TEMPERATURE	PRODUCTION DIAMETERS	AIR SPEED	PRESSURE	CURVATURE RADIUS
Grey	10m standard	-20° + 90°C (peak +115°C)	from 40mm to 254mm	max 20m/sec	max 200 mmH ₂ O	1,2 - 1,8 x Ø

PRODUCTION DIAMETERS

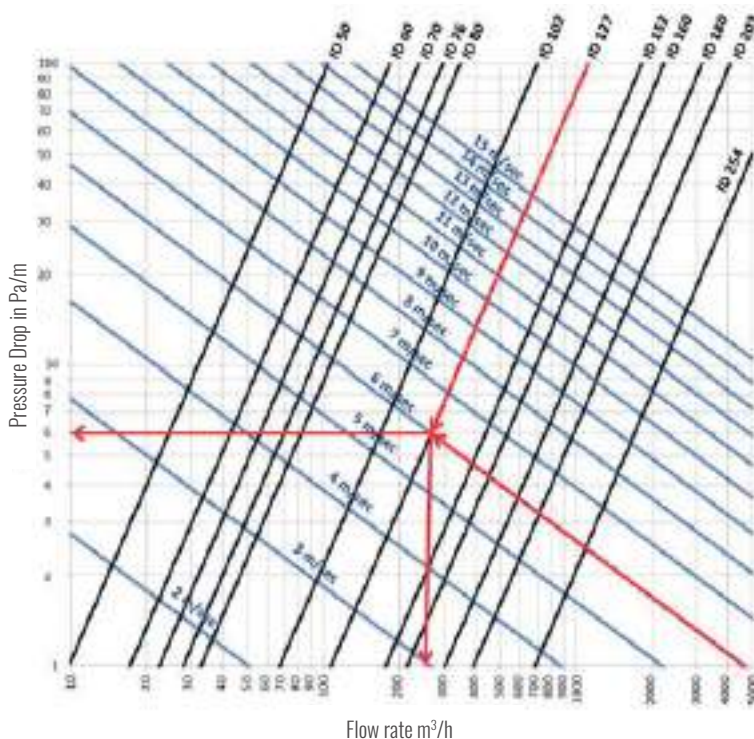
40*	51	63	70	76	80	90*	102	110*	121*
127	133*	140*	152	160	165	180	203	254	

*Diameters available on request

Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air Temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES

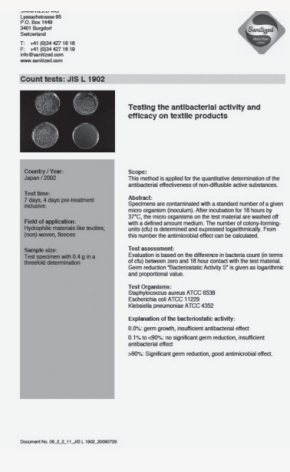
To calculate the flow rates and pressure drops of the other diameters, use the beside diagram.

DIAMETER [mm]	AIR SPEED 8m/s		AIR SPEED 10m/s	
	WORKING PRESSURE [bar]	WORKING VACUUM [bar]	CURVATURE RADIUS [mm]	WEIGHT [gr/m]
51	0,7	0,18	35	96
63	0,7	0,15	42	115
70	0,6	0,13	49	128
80	0,5	0,09	56	154
102	0,4	0,08	70	200
127	0,4	0,07	92	254
152	0,2	0,05	105	308
160	0,15	0,05	110	331
180	0,15	0,05	130	438
203	0,15	0,04	140	492
254	0,08	0,03	175	600

CERTIFICATION

SANITIZATION

FIRE REACTION



Count tests: JIS L 1902

Testing the antibacterial activity and efficacy on textile products

Country / Year: Japan / 2002

Test item: 7 days, 4 days pre-treatment

Field of application: Hospitals, nurseries, day centres, day care centres, schools

Sample size: Five specimens with 0.4 g in a microbial determination

Test Organisms: Staphylococcus aureus ATCC 0109, Escherichia coli ATCC 11229, Pseudomonas aeruginosa ATCC 4352

Explanation of the bacteriostatic activity: 0.0% germ growth, insufficient antibacterial effect; 0.75 to 0.95% significant germ reduction, insufficient antibacterial effect; >95% significant germ reduction, good antimicrobial effect.

SANITIZED TECHNOLOGY




MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT

Class 1 (D.M. 26/06/84)

EU

Class B-s2, d0 (EN 13501-1:2009)

NO BACTERIA NO BILEFLOW

GREEN BUILDING

Thanks also to the support of GreenMap, products manufactured by Tecnica srl contribute to obtain the credits of the major international rating systems for sustainable buildings:



LEED

Contributes to credits:
IP, EA, MR



WELL

Contributes to credits:
MATERIALS, COMMUNITY



BREEAM

Contributes to credits:
MAN, ENE, WST

For further details regarding the specific contributions to the credits indicated, contact Tecnica Srl

APPLICATIONS

OEM	Residential	Smooth surface	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant
Calibrated Diameters*	REACH Certified	RoHS Certified	Halogen Free	Building	Transport	Air Conditioning	CMV	Non-magnetic*
Wall Trace	CMV transport means	CMV mech. means	Prolonged anti condensation	Recreational Boats				

*on request

WIRE OPTIONS

AM non-magnetic inox wire

ADDITIVE OPTIONS

UV * anti UV

SERVICE OPTIONS

MP customized marking



SA10 MasterSan™

Flexible hose made of additivated polyolefin resin film, anti-bacterial/anti-mildew master and steel wire helix.

MasterSan™ in collaboration with:



TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	PRODUCTION DIAMETERS	WORKING TEMPERATURE	CURVATURE RADIUS	AIR SPEED	PRESSURE
Grey	10 m standard	from 80 to 406 mm	-20°C / +90°C (peak +110°C)	0,6 x Ø	max 20 m/sec	max 200 mmH ₂ O

PRODUCTION DIAMETERS

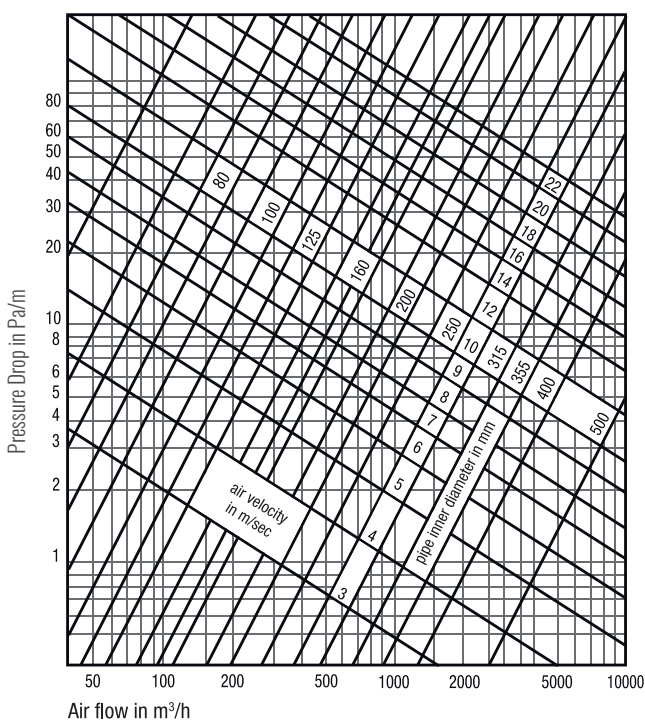
80 102 127 152 160 165* 180 203 254 305 318 356 406

*Diameters available on request

Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES

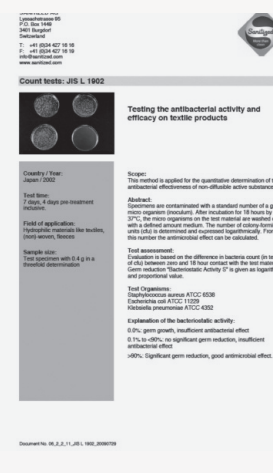
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DIAMETERS [mm]	AIR SPEED 8m/s		AIR SPEED 10m/s	
	FLOW RATE [m ³ /h]	PRESSURE DROP [Pa/m]	FLOW RATE [m ³ /h]	PRESSURE DROP [Pa/m]
80	152	19	190	31
102	250	15	333	24
127	383	12	368	18
160	575	8	773	14
203	900	7	1151	11
254	1445	5	1843	8
318	2278	4	3105	6
356	3058	3	3850	5
406	3845	3	4590	4




CERTIFICATIONS

SANITIZATION

FIRE REACTION



SANITIZED TECHNOLOGY
MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT	Class 1 (D.M. 26/06/84)
EU	Class B-s1, d0 (EN 13823:2010)
DE	B2-0.095mm (DIN 4102 Teil 1 p.6.2)
FR	Class M1 (AFNOR NF P 92-507 § 3.1.2)

GREEN BUILDING

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LEED
Contributes to credits:
IP, EA, MR



WELL
Contributes to credits:
MATERIALS, COMMUNITY



BREEAM
Contributes to credits:
MAN, WST

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APPLICATIONS

								
OEM	Residential	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant	Calibrated Diameters*
								
REACH Certified	RoHS Certified	Halogen Free	Compact Version*	Building	Air Conditioning	CMV	Non-magnetic*	CMV mech. means
	*on request							
Recreational Boats								



SA10 Therm MasterSan™

Flexible hose made of additivated polyolefin resin film, anti-bacterial/anti-mildew master and steel wire helix. Thermo-insulating covering in polyester fibre (thickness 25mm/16kg/m³). Outer aluminized film protection (flame retardant).
Insulation: 25mm / 16kg/m³ - standard
50mm / 16kg/m³ - on request

MasterSan™ in collaboration with:



Thermal resistivity at 20°C **R = 0,58m²K/W (UNI EN 12664:2002)**

TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	PRODUCTION DIAMETERS	WORKING TEMPERATURE	CURVATURE RADIUS	AIR SPEED	PRESSURE
Internal hose Grey - Sheath Aluminium	10 m standard	from 80 to 406 mm	-20°C / +90°C (peak +110°C)	0,8 - 1,5 x Ø	max 20 m/sec	max 200 mmH ₂ O

PRODUCTION DIAMETERS

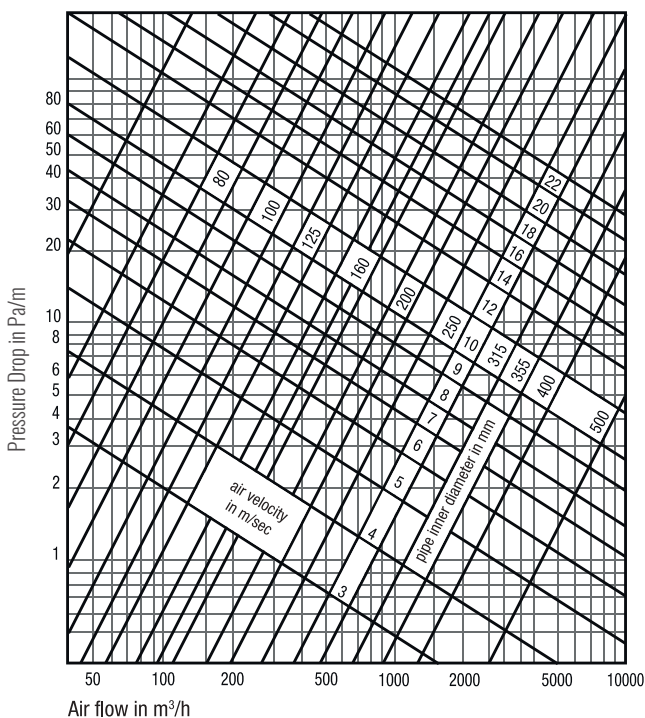
80	102	127	152	160	165*	180	203	254	305	318	356	406
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*Diameters available on request

Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES

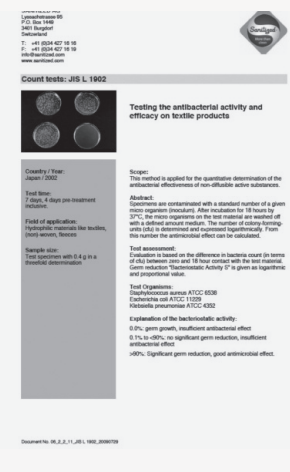
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DIAMETERS [mm]	AIR SPEED 8m/s		AIR SPEED 10m/s	
	FLOW RATE [m ³ /h]	PRESSURE DROP [Pa/m]	FLOW RATE [m ³ /h]	PRESSURE DROP [Pa/m]
80	152	19	190	31
102	250	15	333	24
127	383	12	368	18
160	575	8	773	14
203	900	7	1151	11
254	1445	5	1843	8
318	2278	4	3105	6
356	3058	3	3850	5
406	3845	3	4590	4




CERTIFICATIONS

SANITIZATION

FIRE REACTION



SANITIZED TECHNOLOGY
MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT	Class 1 (D.M. 26/06/84)
EU	Inner tube and vapor barrier: class B-s1, d0 (en 13823:2010) Thermal insulation: class B-s2, d0 (uni en 13501-1:2009)
FR	Inner tube and vapor barrier: class M1 (AFNOR NF P 92-507 § 3.1.2) Thermal insulation: class M1 NF P 92-507: 2004

GREEN BUILDING

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LEED

Contributes to credits:
IP, EA, MR



WELL

Contributes to credits:
MATERIALS, COMMUNITY



BREEAM

Contributes to credits:
MAN, ENE, WST

For further details regarding the specific contributions to the credits indicated, contact Tecnica srl

APPLICATIONS

OEM	Residential	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant	Calibrated Diameters*
		HF						
REACH Certified	RoHS Certified	Halogen Free	Compact Version*	Building	Air Conditioning	CMV	Non-magnetic*	CMV mech. means
Recreational Boats								

*on request



AR10 MasterSan™

Flexible hose made of polyester fabric coated with additivated polyolefin resins, anti-bacterial/anti-mildew master and steel wire helix.

MasterSan™ in collaboration with:



TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	PRODUCTION DIAMETERS	WORKING TEMPERATURE	CURVATURE RADIUS	AIR SPEED	PRESSURE
Grey	10 m standard	from 80 to 610 mm	-20°C / +90°C (peak +110°C)	0,6 x Ø	max 32 m/sec	max 250 mmH ₂ O

PRODUCTION DIAMETERS

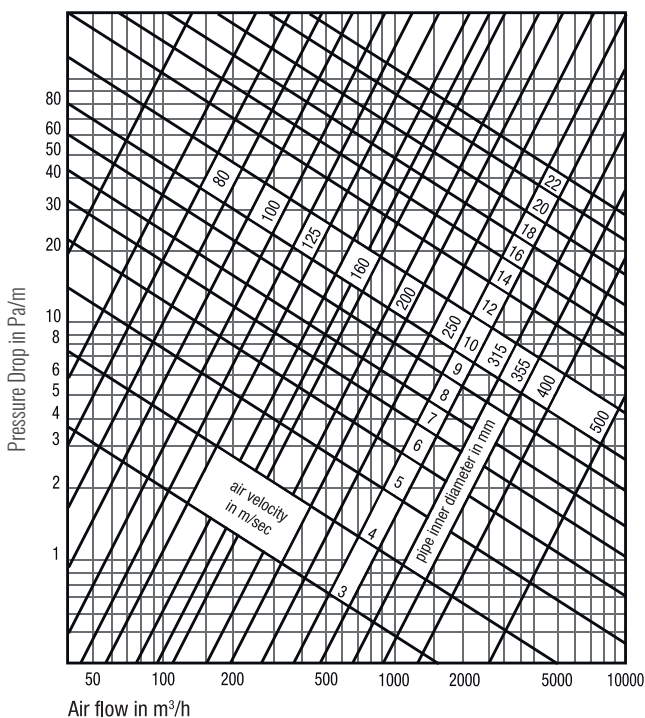
80	89*	102	110*	121*	127	133*	140*	152	160	180	203
228*	254	279*	305	318	356	406	457*	508	559*	610	

*Diameters available on request

Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES


To calculate the flow rates and pressure drops of other diameters, use the beside diagram.

DIAMETERS	AIR SPEED 8m/s		AIR SPEED 10m/s	
	FLOW RATE	PRESSURE DROP	FLOW RATE	PRESSURE DROP
[mm]	[m ³ /h]	[Pa/m]	[m ³ /h]	[Pa/m]
80	152	19	190	31
102	250	15	333	24
127	383	12	368	18
160	575	8	773	14
203	900	7	1151	11
254	1445	5	1843	8
318	2278	4	3105	6
356	3058	3	3850	5
406	3845	3	4590	4
508	5111	2	8223	3




CERTIFICATIONS

SANITIZATION

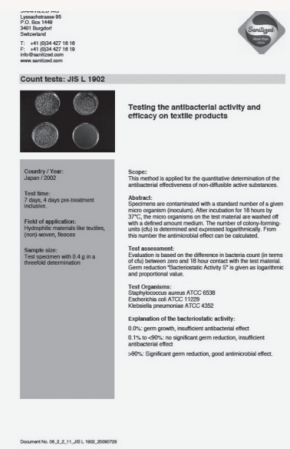
FIRE REACTION



SANITIZED TECHNOLOGY
MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT	Class 1 (D.M. 26/06/84)
EU	Class B-s1, d0 (EN 13823:2010)



Count tests: JIS L 1902
Testing the antibacterial activity and efficacy on textile products

Country / Zone: Japan / JIS
Test time: 7 days, 4 days pre-treatment incubation
Field of application: Hygiene: medical use, health, dairy sector, food
Sample size: Five replicates with 0.4 g in a sterility determination

Scope: This method is applied for the quantitative determination of the antibacterial effectiveness of non-diffusible active substances.
Abstract: Specimens are contaminated with a standard number of a given micro-organism inoculum. After incubation for 70 hours at 37°C, the micro-organisms on the test material are washed off with distilled water medium. The number of colony forming units (CFU) is determined and compared quantitatively. From this number the antibacterial effect can be calculated.
Test assessment: Evaluation is based on the difference in bacteria count (in terms of log₁₀ CFU/cm²) after 10 hours compared with the test material. Germ reduction "Microbiological Activity 10" is given as logarithmic and proportional value.
Test organisms: Staphylococcus aureus ATCC 0028, Escherichia coli ATCC 11229, Pseudomonas aeruginosa ATCC 43242.
Explanation of the bacteriostatic activity: 0.0% germ growth, insufficient antibacterial effect; 0.75 to 0.95% no significant germ reduction, insufficient antibacterial effect; >0.95% significant germ reduction, good antibacterial effect.

GREEN BUILDING

Thanks also to the support of GreenMap, products manufactured by Tecnica srl contribute to obtain the credits of the major international rating systems for sustainable buildings:



LEED

Contributes to credits:
IP, EA, MR



WELL

Contributes to credits:
MATERIALS, COMMUNITY



BREEAM

Contributes to credits:
MAN, ENE, WST

For further details regarding the specific contributions to the credits indicated, contact Tecnica srl

APPLICATIONS

OEM	Residential	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant	Calibrated Diameters*
REACH Certified	RoHS Certified	Halogen Free	Compact Version*	Industry	Building	Air Conditioning	CMV	Non-magnetic*
CMV transp. Means	CMV Mech. Means	Recreational Boats						

*on request



AR10 Therm MasterSan™

Flexible hose made of polyester fabric coated with additivated polyolefin resins, anti-bacterial/anti-mildew master and steel wire helix. Thermo-insulating covering in polyester fibre (thickness 25mm/16kg/m³), outer aluminized film protection (flame retardant).

Insulation: 25mm / 16kg/m³ - standard
50mm / 16kg/m³ - on request

MasterSan™ in collaboration with:



Thermal resistivity at 20°C **R = 0,58m² K/W (UNI EN 12664:2002)**

TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	PRODUCTION DIAMETERS	WORKING TEMPERATURE	CURVATURE RADIUS	AIR SPEED	PRESSURE
Internal hose Grey - Sheath Aluminium	10 m standard	from 80 to 610 mm	-20°C / +90°C (peak +110°C)	0,8 - 1,5 x Ø	max 32 m/sec	max 250 mmH ₂ O

PRODUCTION DIAMETERS

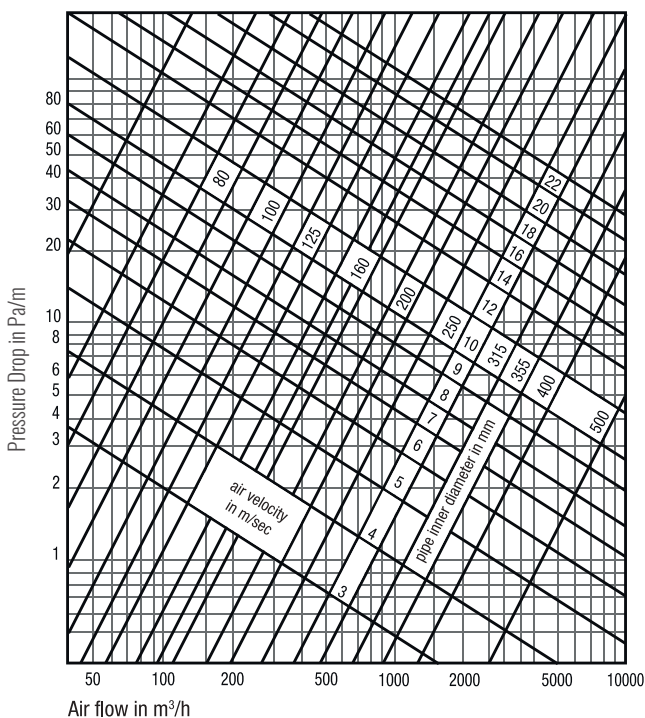
80	89*	102	110*	121*	127	133*	140*	152	160	180	203
228*	254	279*	305	318	356	406	457*	508	559*	610	

*Diameters available on request

Diameters other than those indicated are available by prior feasibility check

PRESSURE DROPS DIAGRAM

(Air temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES


To calculate the flow rates and pressure drops of other diameters, use the beside diagram.

DIAMETERS	AIR SPEED 8m/s		AIR SPEED 10m/s	
	FLOW RATE	PRESSURE DROP	FLOW RATE	PRESSURE DROP
[mm]	[m ³ /h]	[Pa/m]	[m ³ /h]	[Pa/m]
80	152	19	190	31
102	250	15	333	24
127	383	12	368	18
160	575	8	773	14
203	900	7	1151	11
254	1445	5	1843	8
318	2278	4	3105	6
356	3058	3	3850	5
406	3845	3	4590	4
508	5111	2	8223	3




CERTIFICATIONS

SANITIZATION

FIRE REACTION



SANITIZED TECHNOLOGY
MasterSan™ is produced with new generation polyolefin film with the addition of "Sanitized Antibacterial" active ingredient capable of reducing the microbial and bacterial load presents inside the ducts and conveyed by the air, for the environment and man's safety.

IT

Class 1 (D.M. 26/06/84)

EU

Inner tube and vapor barrier:
B-s1, d0 (EN 13823:2010)

Thermal insulation:
B-s2, d0 (UNI EN 13501-1:2009)

GREEN BUILDING

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Contributes to credits:
IP, EA, MR



WELL

Contributes to credits:
MATERIALS, COMMUNITY

























BREEAM

Contributes to credits:
MAN, ENE, WST

For further details regarding the specific contributions to the credits indicated, contact Tecnica srl

APPLICATIONS

								
OEM	Residential	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant	Calibrated Diameters*
								
REACH Certified	RoHS Certified	Halogen Free	Compact Version*	Industry	Building	Air Conditioning	CMV	Non-magnetic*
								
CMV transp. Means	CMV Mech. Means	Prolonged anti condensation	Recreational Boats					

*on request



AL/SA MasterSan™

Flexible hose made with AL (aluminium) wall coupled to polyolefin resin film additivated with anti-bacterial/anti-mildew master. Inner helix made of steel wire.
The set of materials for the construction of the flexible conduit does not require the use of chemical agents, glues or adhesives.

MasterSan™ in collaboration with:



TECHNICAL SPECIFICATIONS AND USAGE LIMIT

COLOR	LENGTH	PRODUCTION DIAMETERS	WORKING TEMPERATURE	CURVATURE RADIUS	AIR SPEED	PRESSURE
Internal Grey / Outer Aluminium	10 m standard	from 82 to 508 mm	-20°C / +90°C (peak +110°C)	0,6 x Ø	max 32 m/sec	max 250 mmH ₂ O

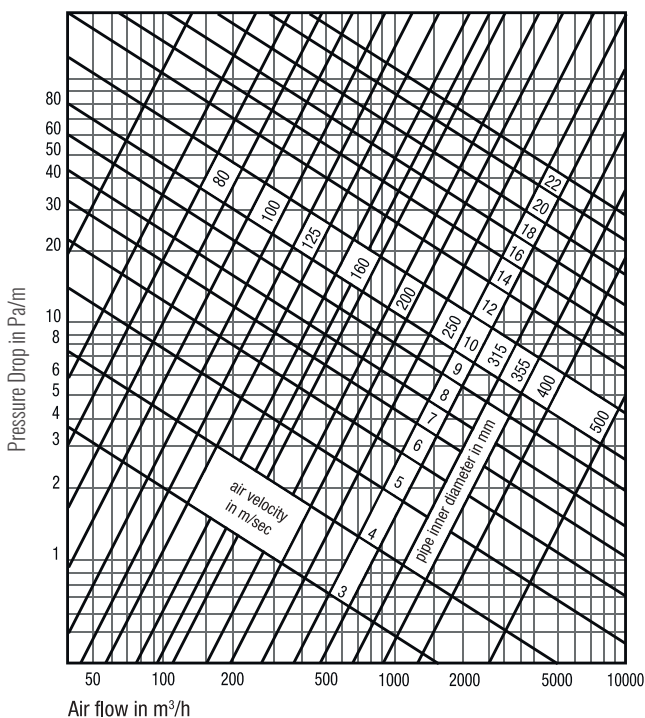
PRODUCTION DIAMETERS

82	102	127	152	160	180	203	228*	254	305	318	356	406	457*	508*
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*Diameters available on request
Diameters other than those indicated are available by prior feasibility check.

PRESSURE DROPS DIAGRAM

(Air temperature 20°C)



PRESSURE DROPS TABLE WITH CALCULATION EXAMPLES

To calculate the flow rates and pressure drops of other diameters, use the beside diagram.


DIAMETERS	AIR SPEED 8m/s		AIR SPEED 10m/s	
	FLOW RATE	PRESSURE DROP	FLOW RATE	PRESSURE DROP
[mm]	[m ³ /h]	[Pa/m]	[m ³ /h]	[Pa/m]
82	152	19	190	31
102	250	15	333	24
127	383	12	368	18
160	575	8	773	14
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356	3058	3	3850	5
406	3845	3	4590	4
508	5111	2	8223	3

CERTIFICATIONS

SANITIZATION

ALUMINIUM WALL

SA10 WALL



Count tests: JIS L 1902

Testing the antibacterial activity and efficacy on textile products

Country / Year:
Japan / 2002

Test Item:
7 days, 8 days pre-treatment

Test application:
Textiles, including the textiles, cloth, screen, fabric

Sample size:
Five specimens with 0.4 g in a standard determination

Scope:
This method is applied for the quantitative determination of the antibacterial effectiveness of non-diffusible active substances.

Abstract:
Specimens are contaminated with a standard number of a given micro-organism inoculum; then incubated for 72 hours at 37°C, the micro-organisms on the test material are washed off with a defined amount medium. The number of colony forming units (CFU) is determined and expressed logarithmically. From this number the antimicrobial effect can be calculated.

Test assessment:
Evaluation is based on the difference in bacteria count (in terms of the logarithm) after and before contact with the test material and reduction "antimicrobial activity" is given as logarithmic and percentage value.

Test Organisms:
Staphylococcus aureus ATCC 49619
Escherichia coli ATCC 12228
Bacillus pumilus ATCC 4302

Explanation of the bacteriostatic activity:
0.0% germ growth, sufficient antibacterial effect
0.7% to 40%, no significant germ reduction, insufficient antibacterial effect
40%: Significant germ reduction, good antibacterial effect.

Document No. (R.2.2.11.1) 1401_0000019

SANITIZED TECHNOLOGY
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Class 1
(D.M. 26/06/84)

Class 1
(D.M. 26/06/84)

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WELL

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MATERIALS, COMMUNITY



BREEAM

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APPLICATIONS

OEM	Residential	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant	Calibrated Diameters*
REACH Certified	RoHS Certified	Halogen Free	Compact Version*	Industry	Building	Air Conditioning	CMV	Non-magnetic*
CMV transp. Means	CMV Mech. Means	Recreational Boats						

*on request



TECNICA srl
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Certificate number 50100 15241

TECNICATM

Efficient Indoor Air Project

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