



# SA10/ESP Patented MasterSan™

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

- Addivated polyolefin resins film with anti-bacterial and anti-mildew master.
- Thermo-insulating coating in netted and closed-cell of polyethylene foam.
- External protection in addivated 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 <sub>2</sub> O	1,2 - 1,8 x Ø

## PRODUCTION DIAMETERS

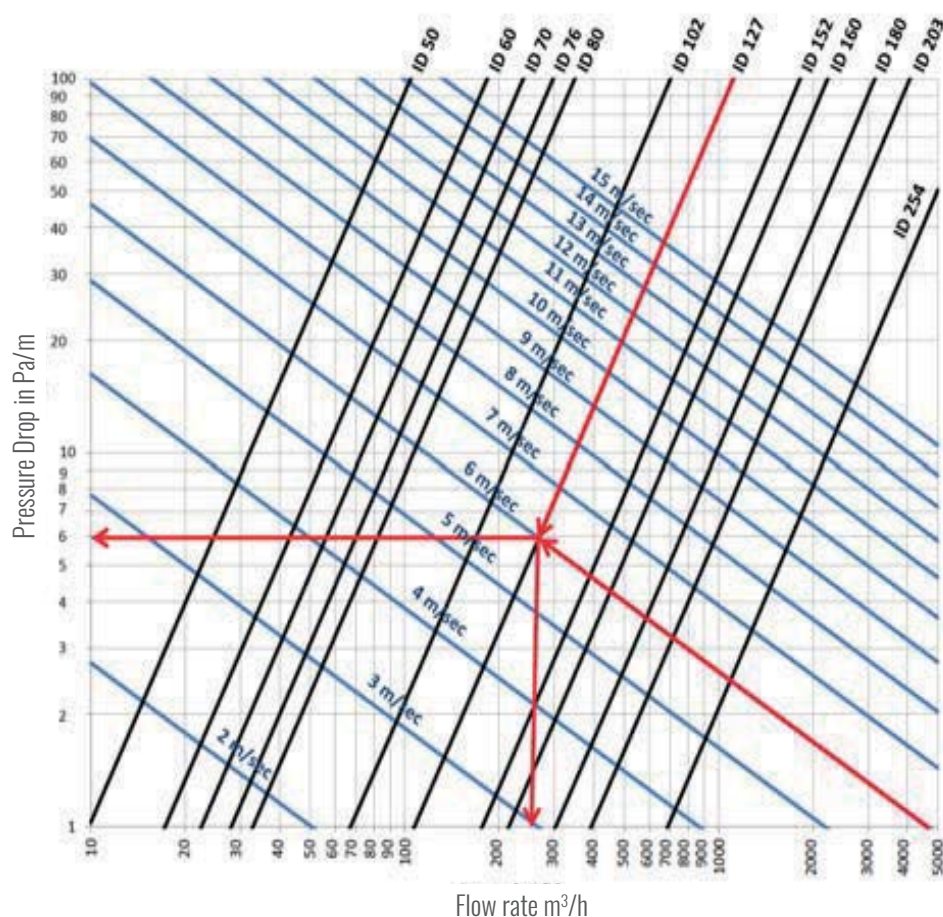
40*	51	63	70	76	80	90*	102	110*	121*
127	133*	140*	152	160	165	180	203	254	

\*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

## 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)  
Omologation nr.: RE1205C20D100011

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

Count tests: JIS L 1902

Testing the antibacterial activity and efficacy on textile products

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

Abstract: Specimens are contaminated with a standard number of a given micro organism (inoculum). After incubation for 18 hours by 20°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 organisms: Evaluation is based on the difference in bacteria count (in terms of log bacteria) after and 18 hour contact with the test material. Germ reduction "Bacteriostatic Activity 17" is given as logarithmic and proportional value.

Test Organisms: *Staphylococcus aureus* ATCC 8338  
*Escherichia coli* ATCC 11229  
*Klebsiella pneumoniae* ATCC 4352

Explanation of the bacteriostatic activity:  
0.1%: germ growth, insufficient antibacterial effect  
0.1% to <math>0.01\%</math>: no significant germ reduction, insufficient antibacterial effect  
<math>0.01\%</math>: significant germ reduction, good antimicrobial 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	Smooth surface	Flexibility	Easy Pack	Self-extinguishing	Mold Resistant	Microorganism Resistant	Tear Resistant
								
Calibrated Diameters*	REACH Certifie	RoHS Certifie	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

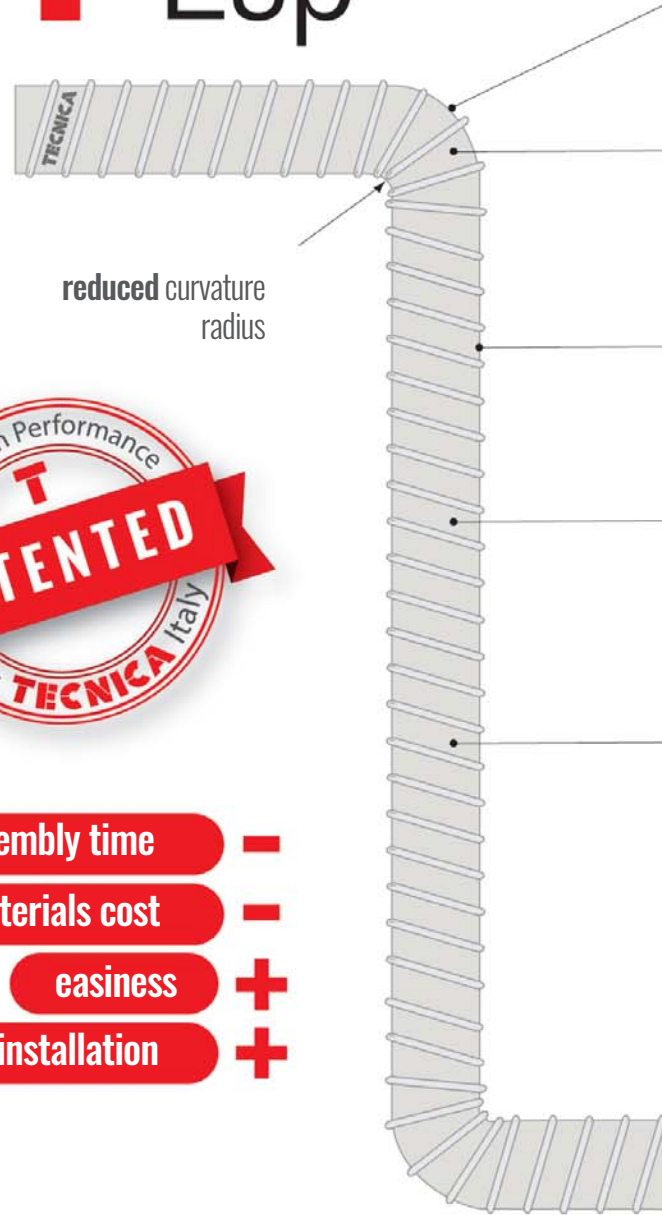
## TESTS PERFORMED

TEST	METHOD	OUTCOMES
λ Coefficient of thermal conductivity	UNI EN 12664:2002	T = 0°C - 0,032 W/mK
		T = 10°C - 0,033 W/mK
		T = 30°C - 0,035 W/mK
		T = 60°C - 0,038 W/mK
Resistance to aggression by chemical agents	Test performed on non-insulated SA10/ESP duct - Application on the external surface of the specific chemical agent and check for any changes after 48h.	ETHANOL No modification and/or damage
		AMMONIA No modification and/or damage
		HIGH CONC. DEGREASER No modification and/or damage
		COOLANT FLUID No modification and/or damage
Maximum operating temperature peak	Test performed on non-insulated SA10/ESP duct - Identification of the maximum temperature peak bearable by the duct and all its components.	+115°C no longer than 2min.
Example of use limits in order to avoid the risk of condensation on the external wall	Option 1 Duct Ø 102	Flow rate temperature 15° Room Temperature 34° Room relative humidity 70%
	Option 2 Duct Ø 102	Flow rate temperature 10°C Room Temperature 28°C Room relative humidity 70%
Duct airtightness class	Test performed on non-insulated SA10/ESP duct - EN 12237 - EN 1507 - EN 12599	Class D
	Test performed on non-insulated SA10/ESP duct - EN 13180	Compliant



## INSTALLATION FEATURES

# T-Esp™



reduced curvature radius



assembly time -

materials cost -

easiness +

quick installation +

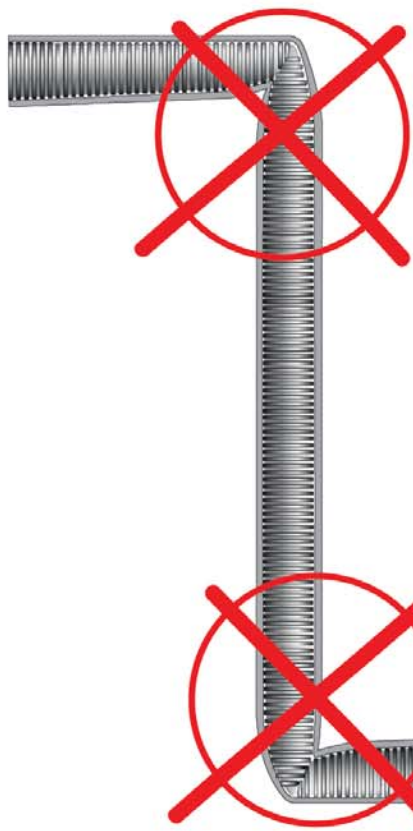
**No limitation** to degrees of curvature on the products

**Reduced pressure drop** as the internal section remains unchanged even in the points of curvature

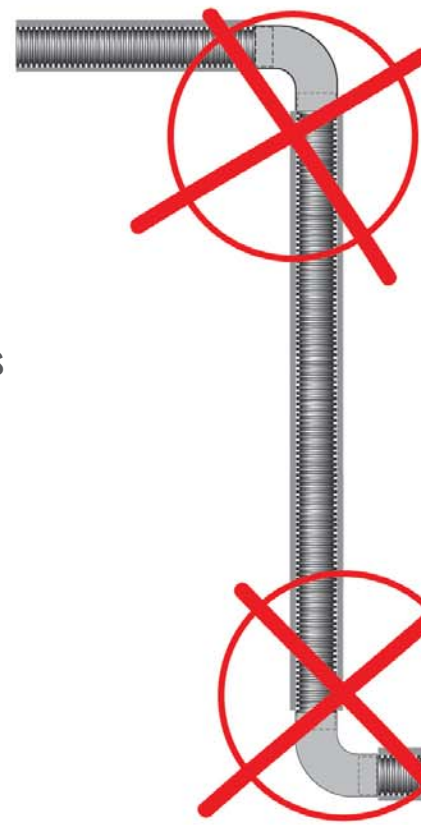
**Single wall** in netted closed cell of expanded polyethylene foam (R-value 0,12 m<sup>2</sup>K/W)

**Lightness and self-supporting** thanks to the reinforced structure with a spiral steel wire that also allows the internal section to remain unchanged at the points of curvature

**Prevents the formation of mold** and the proliferation of bacteria and viruses inside the air ducting systems thanks to the Tecnica™ polyolefin film with the addition of **Sanitized<sup>R</sup>** technology



no risk of crushing in curves with tight radius



no connection systems or special pieces are required in the curves

corrugated ducts