



**MIA DUCT**  
INDUSTRIAL COLD DUCT SOLUTIONS



# **MIA DUCT CATALOGUE**

\_ 2024 \_



### Quality Policy

Achieve customer satisfaction and the best quality.



### Environment Policy

Minimize the environment effect by eco-friendly products.



### Customer Policy

Create value that customers respect.



### Competition Policy

Achieve competitive advantage with accumulated technology and experience.

**MIA DUCT**  
INDUSTRIAL COLD DUCT SOLUTIONS

**With the best quality and seamless R&D, we will prioritize the customer satisfaction first.**

MIA Duct  
Industrial Cold Duct Solutions

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*Thanks for your continuous support and concerns.*

# TABLE OF CONTENTS

WHY FABRIC AIR DUCT?	01 / 02
TRADITIONAL GI DUCT & FABRIC DUCT	03 / 04
TRADITIONAL GI DUCT & FABRIC DUCT (continue)	05 / 06
APPLICATIONS	07 / 08
PRODUCT MODEL	09 / 10
TECHNICAL SPECIFICATIONS	11
SHAPE & COLOR OPTIONS	12
AIR SUPPLY MODEL	13
AIR SUPPLY DISTANCE	14
MANUFACTURING CAPACITY	15 / 16
DESIGN SOLUTIONS	17 / 18

## WHY USE?

### ECONOMICAL



The cost of whole project is 40-60% lower than traditional duct because of material and design. Normally 150PA static pressure is enough for air supply and resistance can be ignored; It also has long service life. In this way, it helps to save lots of running cost. It can distribute air to long distance and cover large area.

### LIGHTWEIGHT



Fabric duct system is a very light weight system which is only 1/40 the weight of a traditional metal air duct system. The system lends itself well to applications such as new construction and building renovation without the need of roof load requirement considerations.

### RELIABLE QUALITY



With large laser production line, fabric air duct system can achieve high pressure resistance, low resistance and low passive penetration. The whole system is made in factory and the quality is more reliable. If the factory is relocated, fabric duct system is easy to dismantle and carry.

### HYGIENIC & HEALTHY



Due to easy and convenient installation and dismantlement methods, fabric duct system is very easy to wash. After washing and sterilizing, the whole fabric air duct will be 100% clean without bacteria.

### QUICK INSTALLATION



The use of specialized cable or rail suspension systems makes installation simple and quick, requiring up to 10 times less installation time than metal duct systems. This significantly reduces construction time and ensures that virtually no material is wasted during installation.

## WHY FABRIC AIR DUCT ?

### CONDENSATION - FREE

Supply air is permeated through fabric forming an air layer around fabric duct; therefore, no temperature difference between inside and outside, so no condensation happens which avoids bacteria growth.



### NOISE ELIMINATION

Fabric duct system uses flexible material operating at lower velocities so it does not generate noise or transmit resonance. It is a tubular muffler itself, so there is no need to deaden sound.



### LONG SERVICE LIFE

The service life of fabric air duct can reach 15 years. The fabric of fabric air duct is made from high strength fire retardant polyester yarn. So it is solid, durable, flexible and non-deformable.



### FLEXIBILITY OF AIR SUPPLY

According to requirements of each project, we can design different methods of air supply (permeation, slot, vent holes and nozzle). With the flexibility of air supply methods , it can reach the best result of air supply.



### AESTHETIC

Multiple colors are available to match any indoor decor; meanwhile, the system as well as the color can be customized and individually designed.





## FABRIC DUCT

## GALVANIZED IRON DUCT

### AIR DISTRIBUTION

Air flows are evenly distributed throughout the room through the diffusers due to the ability to apply perforations of various diameters over the entire surface of the duct. The size and area of the perforations are calculated based on the characteristics of each specific room.

There isn't ability to manage the air velocity through standard diffusers in the steel ducts.

### AIR DISTRIBUTION

### USE AND MAINTENANCE

For the cleaning of the fabric ducts, just take off them and wash in a ordinary industrial washing machine. The fabric does not lose its features and characteristics after washing.

Metal systems are very difficult (and expensive) to uninstall and install for every cleaning, and also you have to be sanitize it when it hanged. For such work, you need to apply chemical to the inner walls of the duct under conditions of high pressure. This kind of work is doing by specially trained staff with using high-cost gear, which significantly increases the cost of servicing of the metal air duct.

### USE AND MAINTENANCE

### ASSEMBLY AND DISASSEMBLY

Light weight of the structure is the reason that fabric ducts are mounted on cables or guide profiles, which allows them to be fixed to various surfaces without changing the structural elements of the building.  
The fabric air duct is connected to a cable or guide with a special fabric suspension, which allows you to adjust the installation height of the system in any area. Special plastic holders allow you to move the system along the entire length of the room and carry out installation and dismantling of the structure from one point.

Due to their heavy weight, the metal air ducts are mounted only to load-bearing structures or to structures reinforced with metal reinforcement, that creates an additional load on the building. Before installation of the metal air ducts, you need to be sure that the surface, the system will be attached is reliable enough. The weight of the ventilation structure itself makes more difficult all the processes of delivery and installation.  
If metal air ducts are already installed, then removing them from the ventilation system will be an extremely time-consuming operation. Unlike fabric air ducts, metal ones cannot be removed from one convenient point.

### ASSEMBLY AND DISASSEMBLY

### CUSTOM DESIGN

MIA Duct is able to fit the interior design. This is another advantage of MIA Duct systems. Depending on the interests of the customer, we can provide various design options and a wide range of colors.

Metal air ducts are featured by a monotonous "lifeless" look, capable of awakening the emotions of melancholy and despondency. Any options for creative or even artistic visual design of such air ducts are close to zero.

### CUSTOM DESIGN

### NOISE

Fabric air ducts are primarily distinguished by the absence of hum and vibrations during work.

Metal air ducts are featured by vibration and their special hum during work, and it does not go in the best way for affect the condition of people in the close to ducts of the air ducts. And vibration damages buildings and reduces the reliability of the duct itself.

### NOISE

## FABRIC DUCT

### EXPENSES

Having fabric ducts, you don't need traditional grilles as system already includes custom air distribution elements without any unnecessary noise effects. Delivery of fabric air ducts to the installation area also requires significantly lower financial costs than in the case of metal ones.

### CONDENSATION PROBLEMS

Another advantage of fabric constructsures is that there is no risk of condensation. Due to the properties of the fabric and the perforation, moisture does not form on surfaces, which is a soil for the appearance of various microorganisms.

### CORROSION RESISTANCE

For the manufacture of its air ducts, MIA Duct uses materials that are chemically resistant and inert to most components in the air. And for use in aggressive environments, or in enterprises where increased requirements for the characteristics of materials are imposed on equipment, MIA Duct uses special fabrics.

### FIRE RESISTANCE

The air duct can be made of flexible fire-resistant material with a special silicone coating that can withstand temperatures up to 380 °C

### EASY-TO-REPAIR

Despite the strength of the fabric, mechanical damage may happen during work of the air duct. In this case, it will be enough to simply sew up the damaged area, and the system will continue to operate normally.

### LIFE TIME

The service life of fabric air ducts is about 10-15 years.

## GALVANIZED IRON DUCT

The work with metal ducts increases the costs relative to fabric options at the each stage of the work. It includes the cost of each component of the system, and the cost of installation, delivery and all other operations for the installation and maintenance of the duct.

Due to the nature of the structure, condensation forms on the surfaces of steel diffusers, which, over time, leads to corrosion and the appearance of microorganisms.

Despite the fact of trying to use alloys that are the least susceptible to corrosion in metal air ducts, this problem of corrosion has not been completely overcome.

Metal air ducts, despite the fact that they do not burn, can still deform under the influence of fire.

If a metal duct section is damaged, then it is necessary to disassembly the structure and repair the damage, and sometimes change the damaged section.

Metal air ducts begin to rust after 3-5 years of active use.

### EXPENSES

### CONDENSATION PROBLEMS

### CORROSION RESISTANCE

### FIRE RESISTANCE

### EASY-TO-REPAIR

### LIFE TIME



WHERE  
TO USE?

## APPLICATIONS



INDUSTRIAL AREA



WAREHOUSE



SUPERMARKET



LABORATORY



STADIUM



RESTAURANT



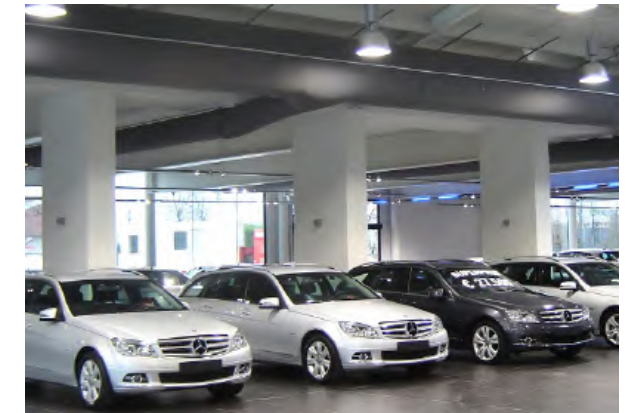
SWIMMING POOL



FOOD PROCESSING



FITNESS CLUB



AUTOMATIVE

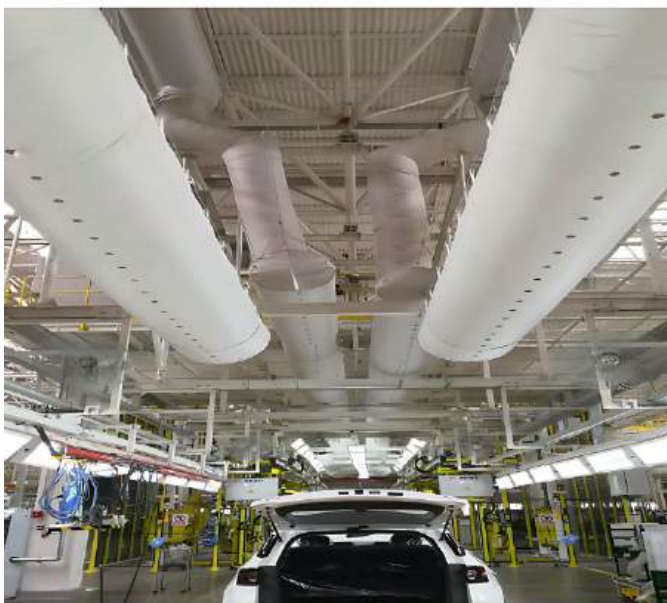


OFFICE AREA



GREEN HOUSE





## 01 STANDARD TYPE

This type is quiet normal and suitable for most of area because of its easy installation and seldom limits in condition, suspension could be wire ropes or rails, row of suspension could be single or double, flow model is by using laser holes/ orifices.



## 03 PURIFYING TYPE

Easy clean and excellent filtering effect, this type is able to achieve & create a level of 100 cleaning rooms, and also, this type is anti-bacterial, anti-static, anti-corrosion, oxidation resistant and fire resistant.



## 02 THERMAL INSULATION TYPE

This type is made of special material which has 3 layer, outside and inside layer are the same material to standard type. However, medium layer is a kind of rubber insulation material, thickness is 13, 20 or 25mm in total. This type is used for area which has suspended ceiling and air duct has to be installed above ceiling. This type is able to avoid unnecessary heat loss and improve our heat supply efficiency.



## 04 STRUCTURE KEEPING TYPE

The standard type duct is shriveled without air supply. This type could solve this problem perfectly by using brackets inside duct, it means this type has supports inside to keep its smooth shape and good look. This type is used for those areas which requires high level of aesthetics.



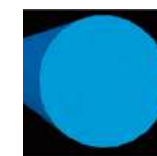
## TECHNICAL SPECIFICATIONS

Typer	Unit	Specification		Standard
		Basic Type	Non-flammable Type	
Weight	g/m <sup>2</sup>	220 (±5)	265 (±5)	EN-ISO 5077
Thickness	mm	0.3	0.5	EN-ISO 12127:1997
Permeability	mm/s	4.55	2.5	EN-ISO 9237:1995
Tensile strength	Warp/Weft N/50mm	1680/977	1790/1483	EN-ISO 13934-1
Resistance to tearing	Warp/Weft N	282/69	256/112	EN-ISO 13937:2
Dust retention filter class		G2	G2	EN-ISO 779:2012
Shrinkage in wash	(%) 40°C	0.5	0.5	EN-ISO 5077
Melting point	°C	200	250	
Operating temperature	°C	80/-35	80/-35	
Spontaneous ignition temp	°C	200	500	
Water absorption	(%) 90% RH	0.54	0.4	
Electrostatic resistance	Ohm/cm	2 x 10 <sup>10</sup>	2 x 10 <sup>10</sup>	DIN 54345
Clean room classification		Class 4	Class 4	ISO 14644-1
Fire resistance		B-S1, D0, T0	B-S1, D0, T0	

(\*) For other types, please contact us for more information.

## SHAPE & COLOR OPTIONS

### SHAPE OPTIONS



#### CIRCULAR

Standard shape, easy maintenance, low wind drag, preferred option for shape.



#### SEMICIRCLE

This shape are suitable for condition: low ceiling height, requires no visible drilling or installation marks on walls and ceiling to keep an perfect views, and never destroy the whole room decoration effect.



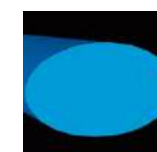
#### A QUARTER

This type is installed in area where round air duct can not be installed due to its space restrictions, such as corner of the wall and ceiling.



#### ARC

Application same to semicircle, but installation height is not enough even for semicircle.



#### ELLIPSE

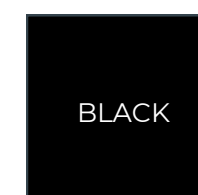
A best choice to combine advantage of circular and semicircle shape.

### COLOR OPTIONS

We can dye any color according to the Pantone Palettes for the big goods.



WHITE



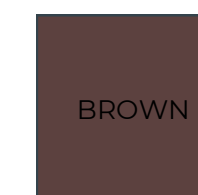
BLACK



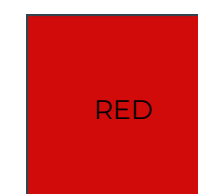
GRAY



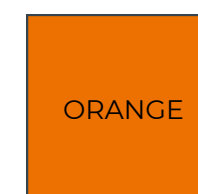
LIGHT  
GRAY



BROWN



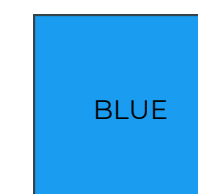
RED



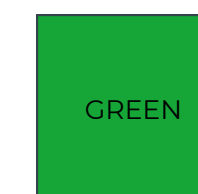
ORANGE



YELLOW



BLUE



GREEN

# AIR SUPPLY MODEL

## A FABRIC PENETRATION

The air exits the duct through the permeable fabric surface. The air is driven by thermodynamic forces preventing drafts in the occupied zone, which results in a high level of comfort.

## B MICRO FLOW

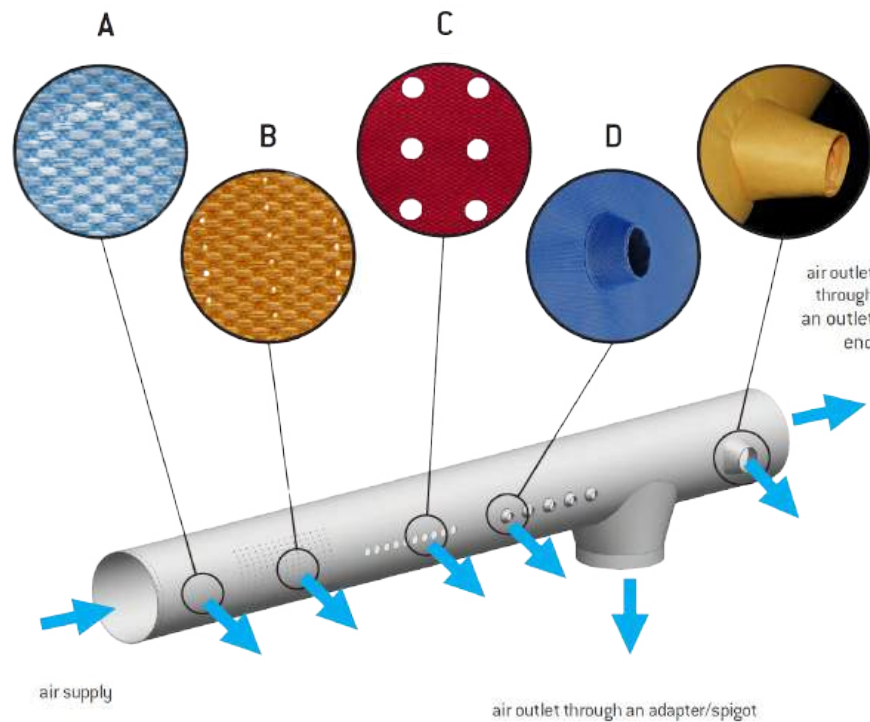
The air exits the duct via laser cut micro-perforations along the circumference of the duct. The micro-perforations can cover between 90 and 360 of the duct's circumference. Micro flow has the smallest near-zone of all of the perforated fabrics available. In most cases the near-zone will not extend beyond 300mm.

## C ORIFICE FLOW

Orifice flow is a directional flow model where the air exits the duct via rows of laser cut orifices. Multiple rows of Orifice flow can be specified for a duct. The throw depends on the static pressure inside the duct, the size, and spacing of the orifices.

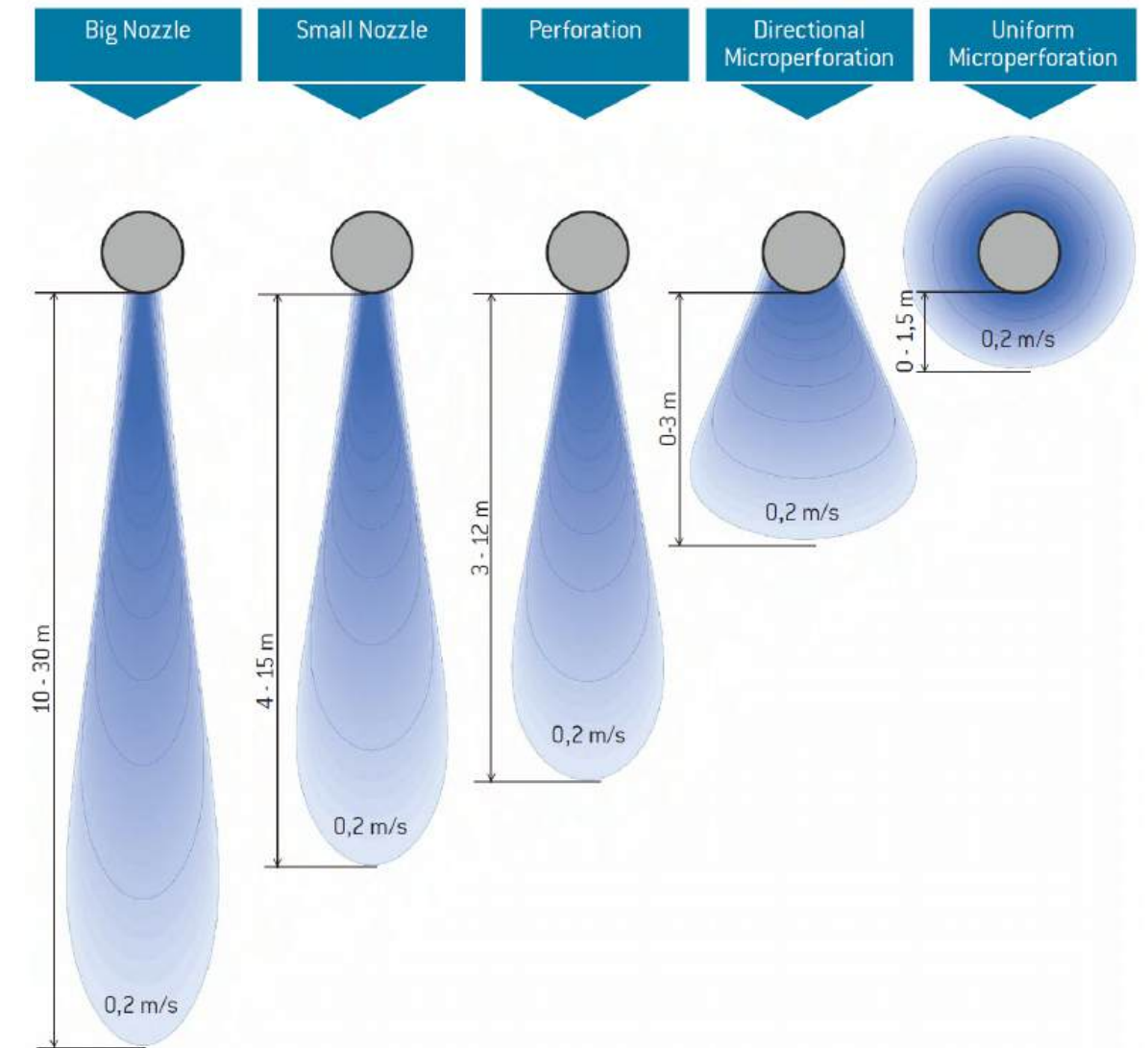
## D FABRIC JET FLOW

Fabric Jet flow is capable of generating exceptionally long throws through the use of conical jets in varying diameters. The jets have a very high discharge coefficient due to the conical shape. This results in higher discharge velocities than an equivalently sized orifice.

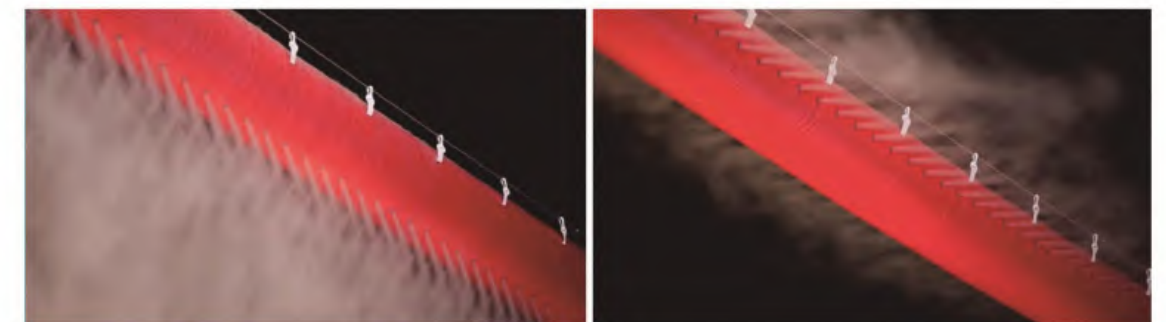


# AIR SUPPLY DISTANCE

## AIRFLOW TRAVEL DISTANCE FROM FABRIC DIFFUSERS



The air supply distance will change along with its static pressure and difference in temperature.

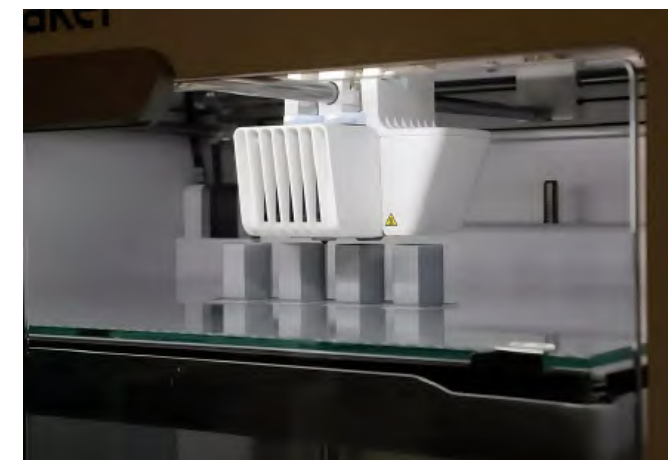






MIA's Factory located in China textile town of Suzhou City. Company relies on the advantage of textile base, and work with Donghua University and Hefei Poly-technic University together to build R&D center to create the leader of China's textile industry.

MIA Duct has rich experience in product design, research and development production construction and related products used successfully in the field of domestic industries, and is committed to promoting the development of the innovation of textile cleaning ventilation industry. MIA Duct has 20 professional weaving machines, 30 sewing machines, 4 large automation equipment, laser hole machine for textile duct, and high precision testing equipment. All textile duct in grade purification workshop production, each product has been tested by professional test instrument till qualified to ship out. The production capacity of factory is 200 million square meters per year.



MIA Duct	The wind speed in duct (m/s)			Wind pressure (Pa)		
	Proposed value	Inlet maximum value	Maximum value in duct	Minimum inlet static pressure	Minimum value in duct	Maximum terminal static pressure
Circle Permeate	6 ~ 10	<10	10	150 ~ 200	≥30	150
With seam	6 ~ 8	≤8	8	150 ~ 250	≥60	150
Nozzle	6 ~ 8	≤8	8	150 ~ 250	≥60	150
Spray orifice	4 ~ 7	6	≤7	150 ~ 250	≥60	150
1/2 & 1/4 Circle permeate	4 ~ 7	6	≤7	150 ~ 200	≥60	150
Circle with branch pipe	7 ~ 9	8	Main duct 8 Branch duct 6	150 ~ 250	≥60	150
Inlet air vertical and perpendicular to the length of the duct	4 ~ 7	8	≤7	150 ~ 250	≥30	150
Inlet air vertical with branch duct	4 ~ 10	4	Main duct 8 Branch duct 7	150 ~ 250	≥30	150

## CONCLUSION

- The wind speed of Mia Fabric Duct is general 8 m/s, and no more than 10 m/s
- The terminal wind pressure of Mia Fabric Duct need to be more than 50 Pa, and the wind pressure loss of straight duct is less than 2 Pa/m
- The total inlet pressure is general from 150 Pa to 250 Pa
- The excess pressure of AHU outlet and external fan blower is general from 300Pa to 400Pa .

## EXAMPLE

Specification	Unit	Symbol	Value
Model	Trane Packaged Air Conditioner: TWE240ED		
Inlet Static Pressure	(Pa)	P	200
Flow Rate	(m³/h)	Q	12.000
Fabric Air Duct Length	(m)	L	27
Wind Speed	(m/s)	V	8
Section of Fabric Air Duct	(m²)	$N = Q / (V \cdot 3600)$	0,4
Fabric Air Duct Diameter	(mm)	$D = 2000 \cdot \sqrt{(N/3,14)}$	750
Fabric Area	(m²)	$S = 3,14 \cdot D \cdot L$	63,6
Pressure Loss	(Pa/m)	$P_{loss} = f(V,D)$	1,8
Minium Pressure	(Pa)	$P_{min} = P - L \cdot P_{loss}$	150,3





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## HEADQUARTERS

📍 No 33/63 Giang Bien, Giang Bien Ward, Long Bien District, Ha Noi, Vietnam.

## REPRESENTATIVE OFFICE

📍 No 35A/102 Truong Chinh, Dong Da District, Ha Noi, Vietnam.

☎ 0989 81 2022

✉ [hotline@miavietnam.vn](mailto:hotline@miavietnam.vn)