SoftDucts, LLC.

AIR FLOW OPTIMIZERS

By DTI

Fabric ducts & diffusers

For more information, contact:

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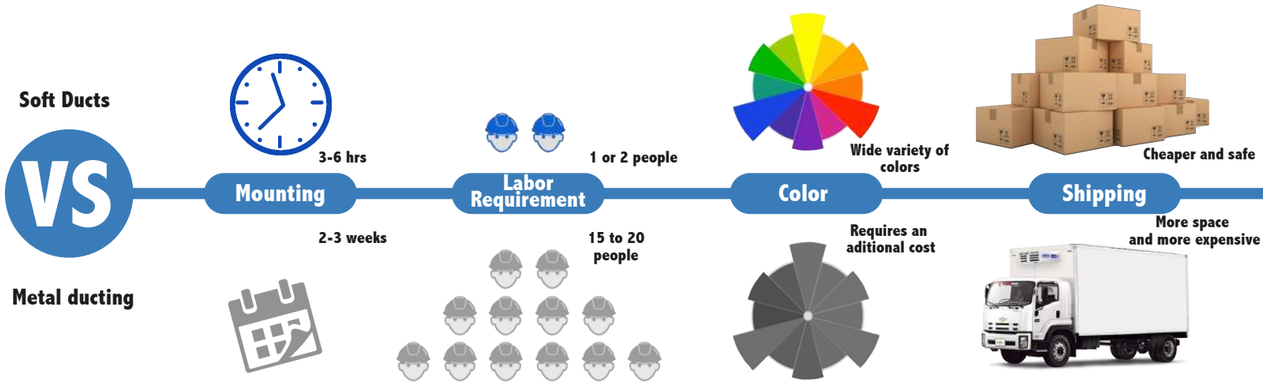
1.- Why SoftDucts?

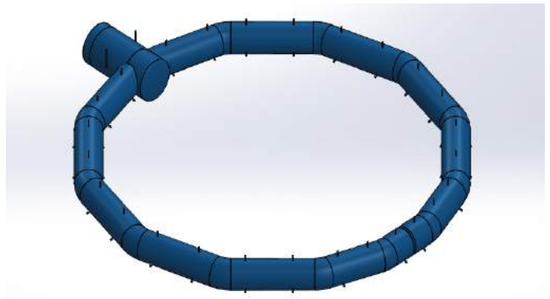
1. Technical Support
2. Shorts Lead Times
3. Spedialized Engineering
4. Technical Training
5. Technological Innovations
6. Prototype Testing Laboratory

1.1- Advantages

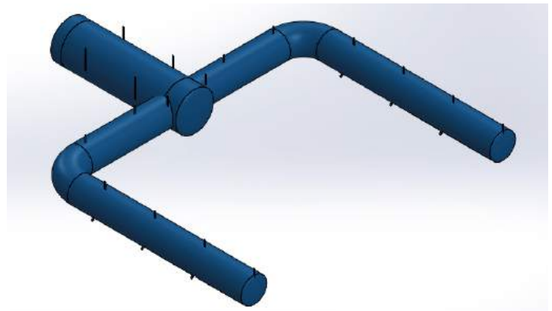
1. Customized and innovative design
2. Easy, fast and economical installation
3. Materials immune to contaminants and free to condensation processes
4. Light weight material
5. Fire resistant, highly hygienic
6. 100 % washable
7. Energetically efficient



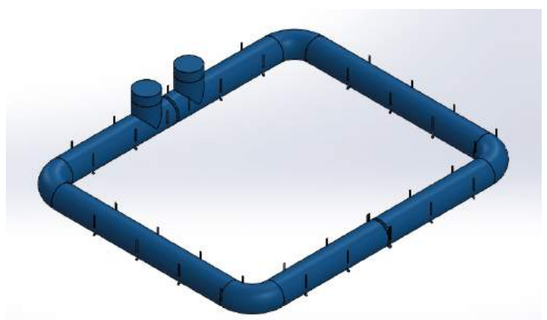
Every project developed by SoftDucts is custom designed and fabricated to meet the necessities and requirements in accordance with the type of industry, hygrothermic conditions, geometries and HVAC systems. Always in search of the desired comfort, backed up by an engineering analysis.



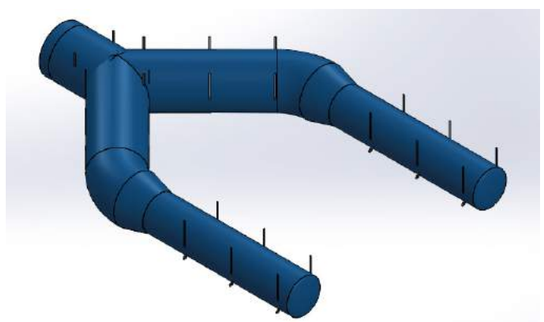
2.1 One air inlet .



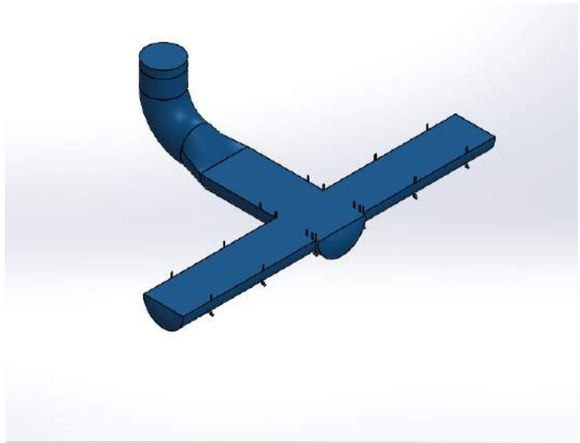
2.2 Grafts and 90º elbows.



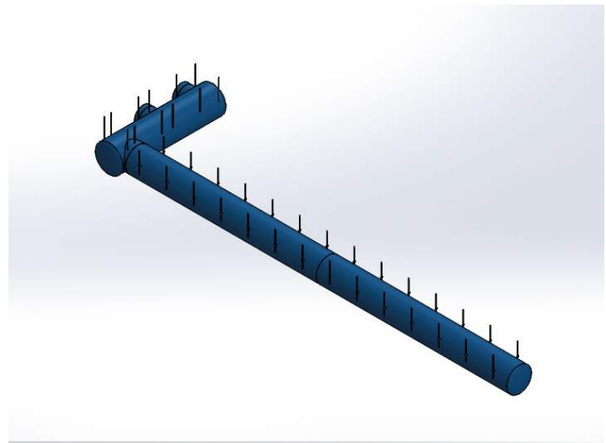
2.3 Square trajectory with two air inlets.



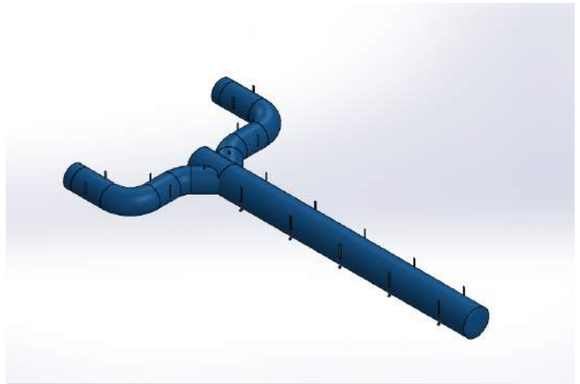
2.4 "Y" with one air inlet.



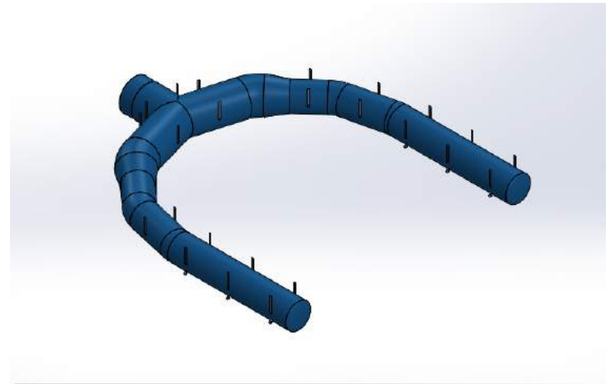
2.5 "T" half round with one air inlet.



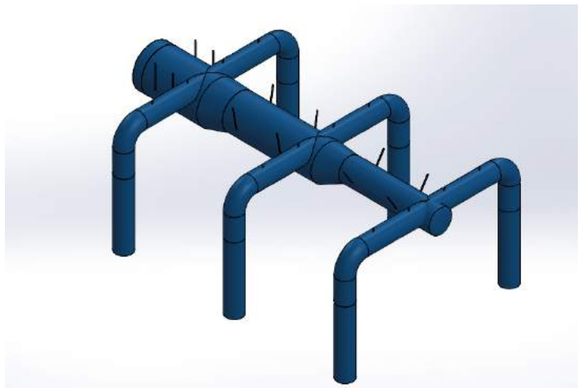
2.6 "L" with graft and two air inlets.



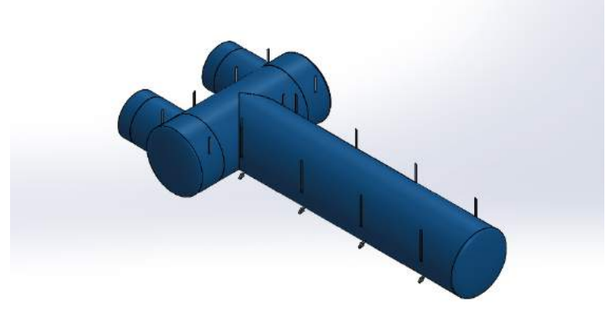
2.7 Two air inlets with 90º and 45º elbows.



2.8 "U" with reductions.



2.9 Main duct, with two reductions, six grafts and 90º elbows.



2.10 Two air inlets and a graft.

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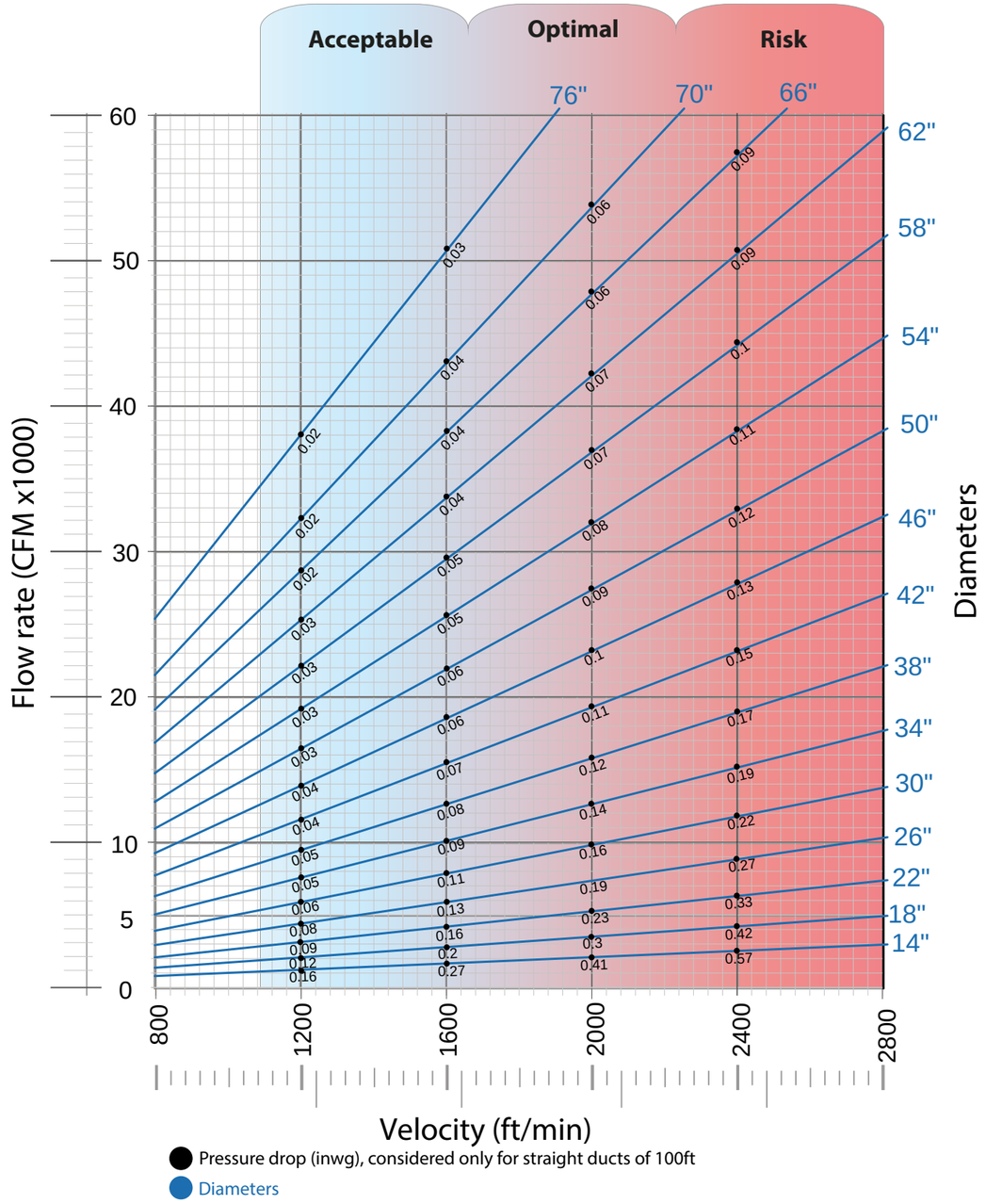
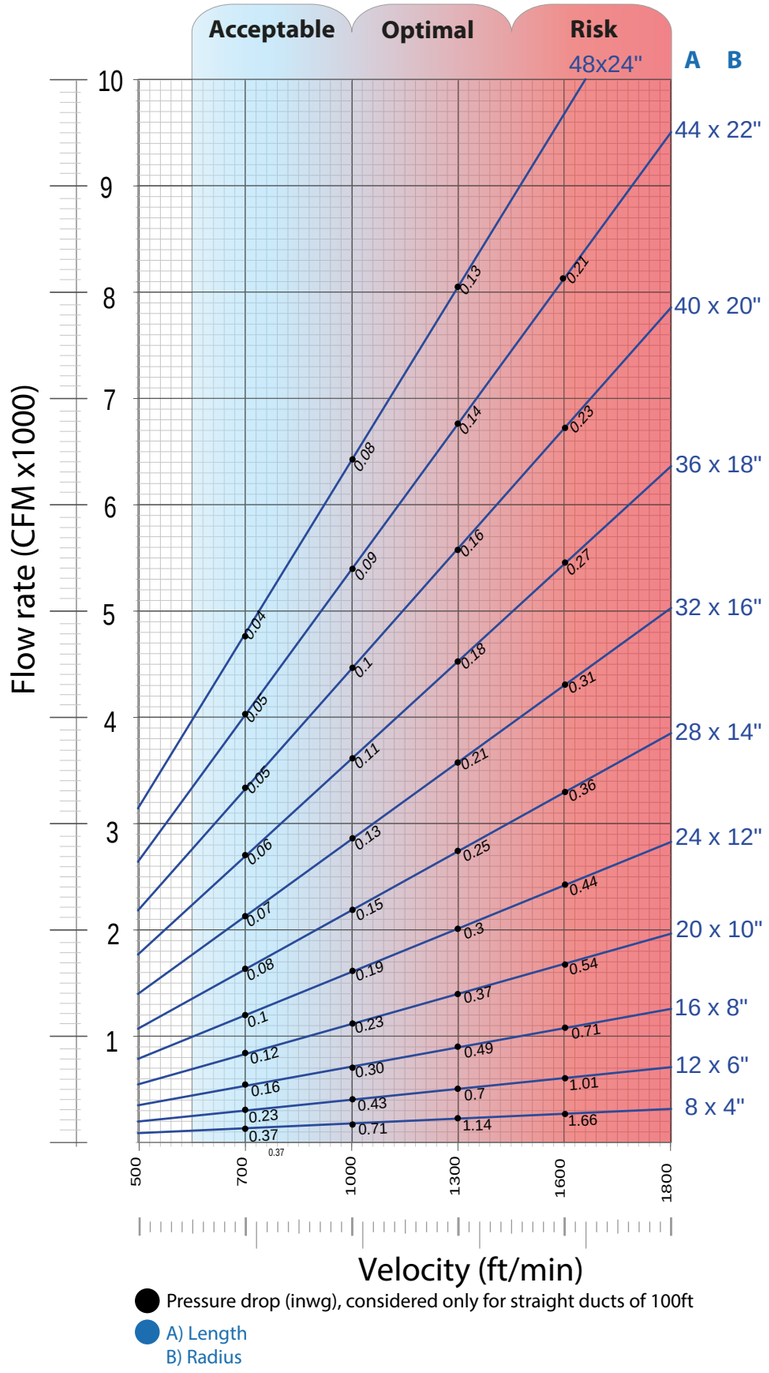
VELOCITY CHARTS

Calculation of velocity, diameters and pressure drop
Circular ducts

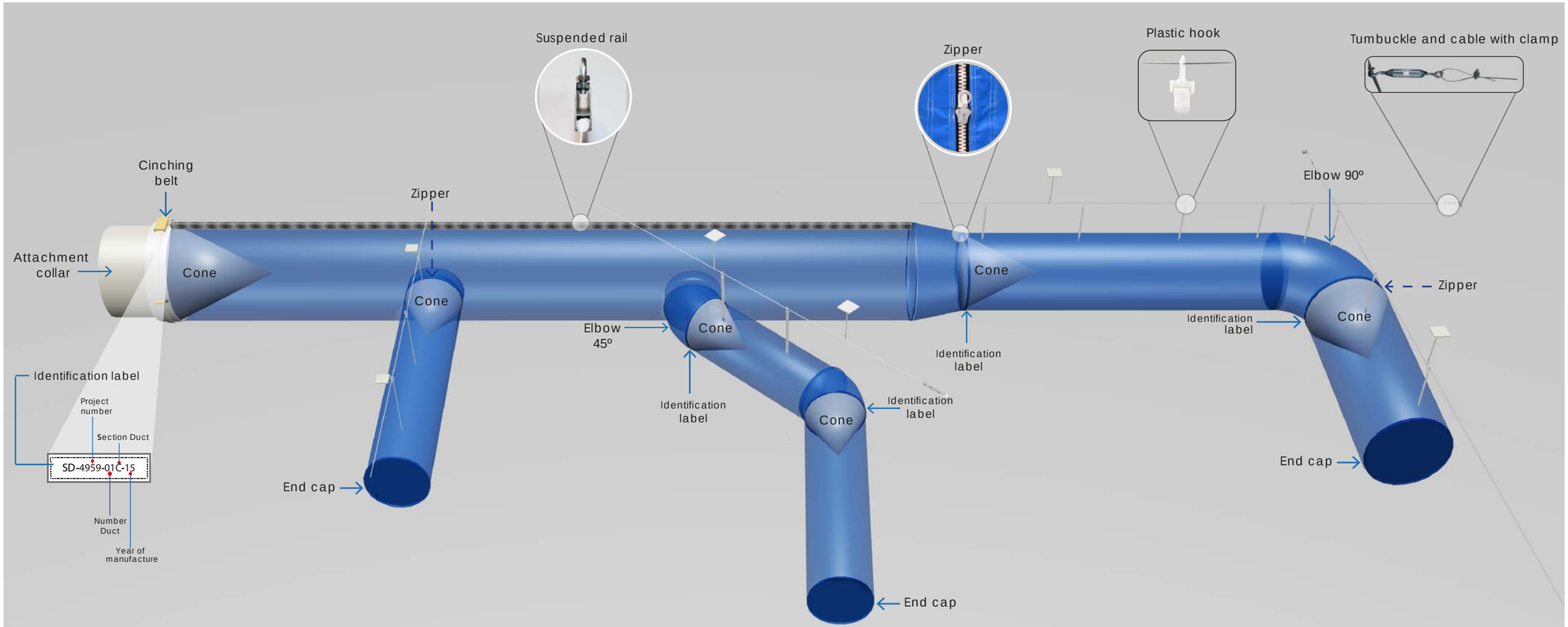


Calculation of velocity, diameters and pressure drop
Half round ducts

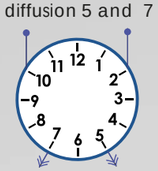


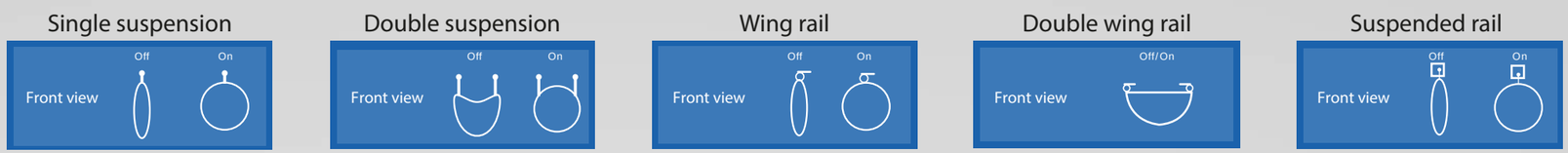
PARTS AND FITTINGS

The connection process is carried out by plastic zippers, which are concealed with an insulating cover to prevent leakage and maintain the aesthetics. The trajectory of each project is sectioned off into parts of predetermined length, so that the shipping process installation, maintenance and replacement of parts is facilitated.



Suspension 10 and 2, diffusion 5 and 7





Available sections

Circular
Recommended system with easy maintenance

Half round
Used in applications for flush mount.

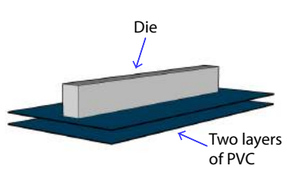
Ellipse
Used in areas of restricted height and space.

Each of the sections can be adapted to the requirements and limitations of space.

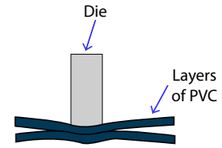
5.-

DIFFUSERS

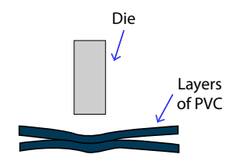
The engineering department will select the appropriate fabric for each application



Two layers are located below the die.



The die lowers and HF waves are generated by means of a current; Molecules inside the materials move, producing heat and then attach to each other. No external heat is supplied, it is generated within the material.



The die is raised, leaving the two PVC layers merged.

Lightweight line

Weight 2.51 oz/yd2
Durability
Polyester fibers
100% washable.
High hygienic standards
Anti-bacterials properties

Heavy line

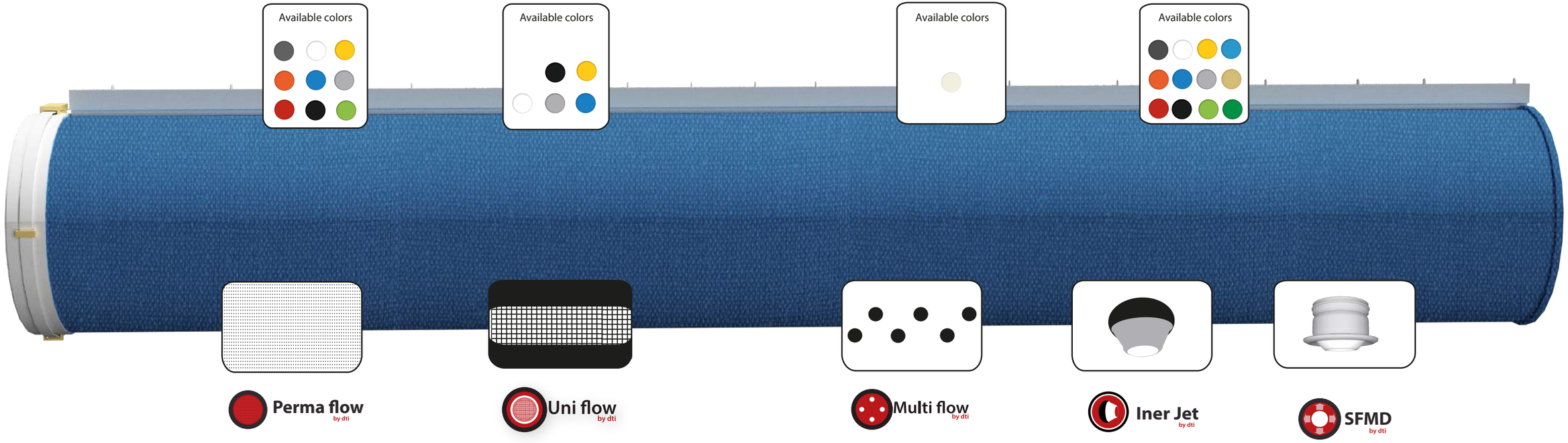
Weight 10.03 to 10.47 oz/yd2
Polyester fibers
highly resistant
100% washable
Anti-bacterial properties

Ecological line

Weight 2.27 oz/yd2
Manufactured with
recycled material.
100% washable
Highly resistence

Reinforced line

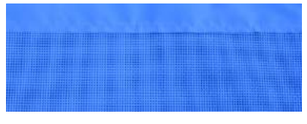
Weight 10 to 18 oz/yd2
Polyester fibers coated
with PVC.
Weft knit
Weldable
Mechanical strength



·Permeable fabric

Short range

·Mesh



Medium range

·Orificies

Medium range

·Textile nozzels

Long range

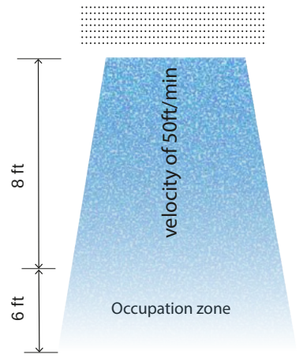
Long range

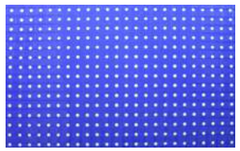
AIR DISPERSION

SoftDucts offers several types of diffusers:

Perma flow by dti

Utilized in areas where only a comfortable space is desired and not a direct airflow.

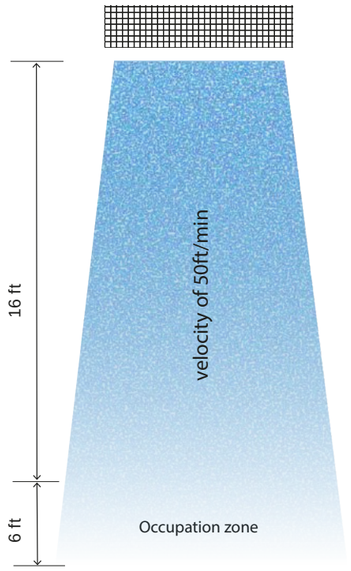




Through laser microperforation, we can achieve the permeability desired on the textile fiber.

Uni flow by dti

The air diffuses through a perforated mesh.



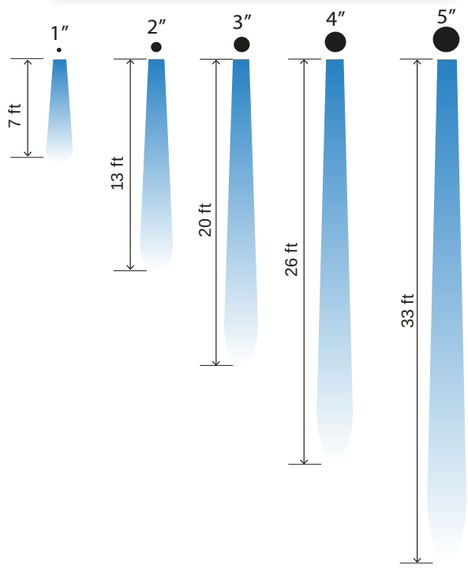
Note: Isothermal throws obtained at a velocity of 50 ft/min.

Multi flow Standard design pressure of 1/2 inch wc	
Diameter orifices in	Throw ft
1	7
2	13
3	20
4	26
5	33

Iner jet Standard design pressure of 1/2 inch wc	
Larger diameter nozzle in	Throw ft
5	26
6	30
7	33
9	40
11	46

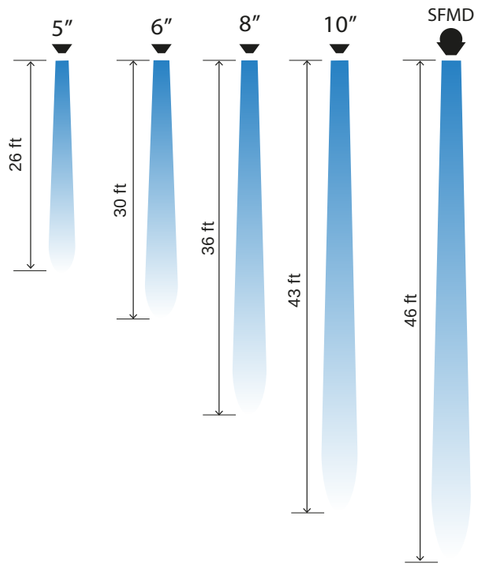
Multi flow by dti

The air diffuses through orifices. The diameter and the spacing between them are calculated according to the requirements of each project.

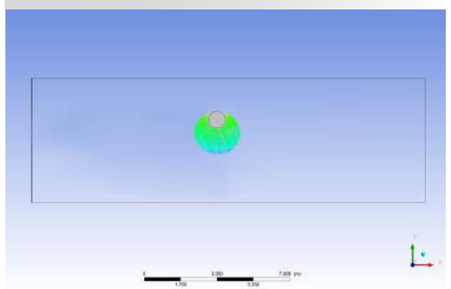


Iner Jet by dti

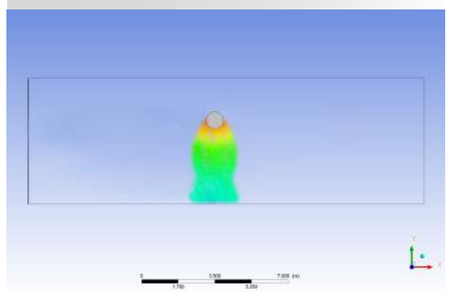
The air diffuses through fully textile nozzles that allow a greater air throw.



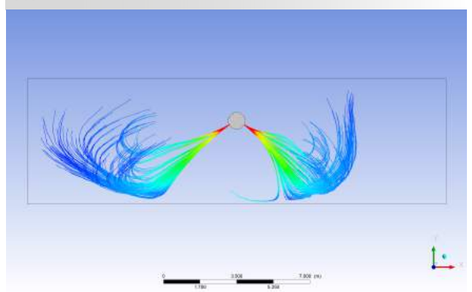
6.1



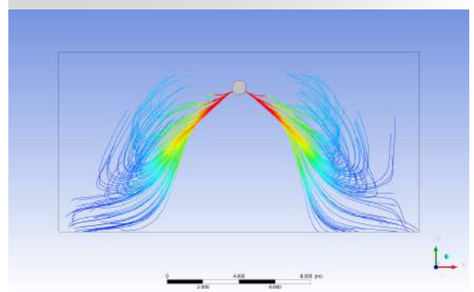
6.2



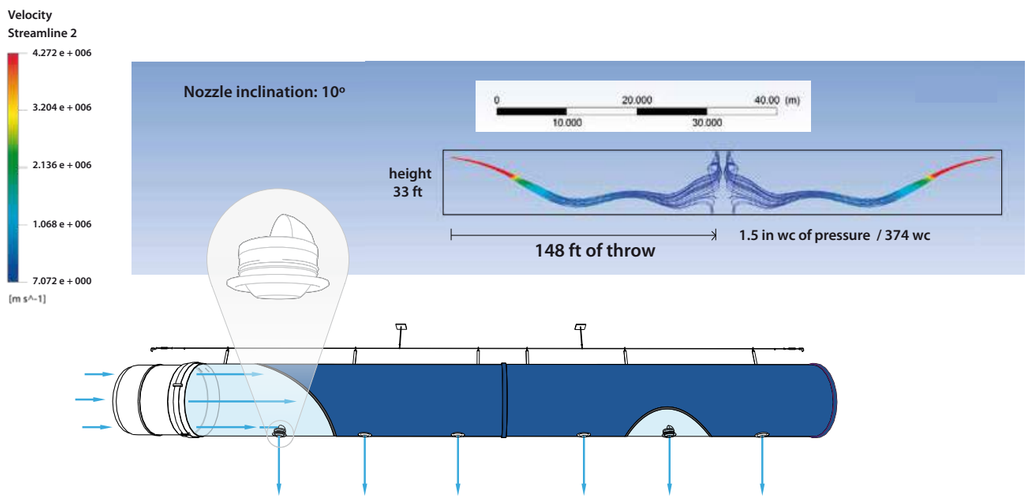
6.3



6.4



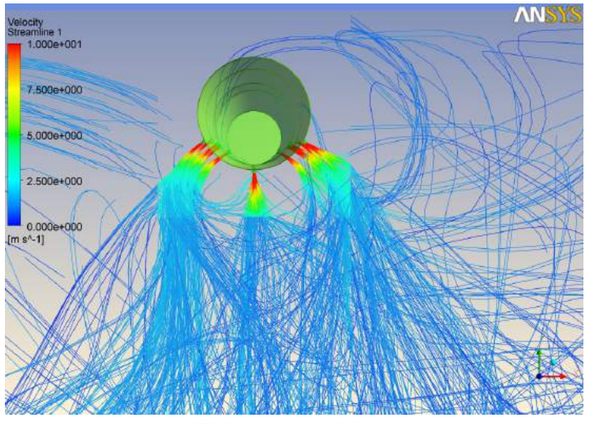
Used in ventilation and air conditioning systems where long throws, high entrainment and low noise levels are required. The air is diffused through nozzles that are inserted directly onto the fabric along the duct in a linear fashion. They are adjustable up to 30 degrees in any direction.



7.- DUCT SPHERE

Internal Structure
Keeps it's spherical shape even when the AHU is not on.

Range
Heights above 32 feet at a perimeter of 53 feet

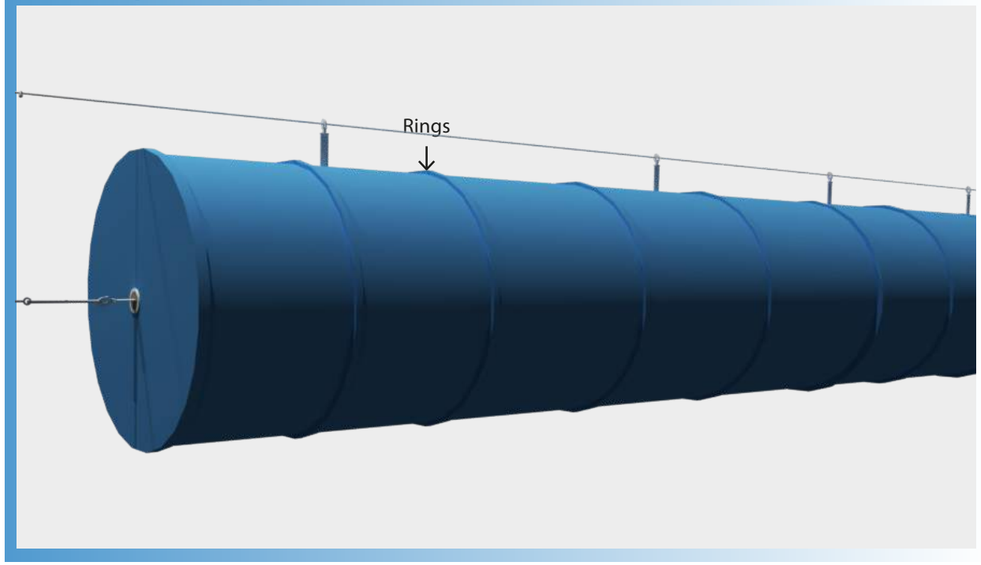


Trajectories of air flow

Advantages
·Lightweight ·Quick installation ·Easy maintenance

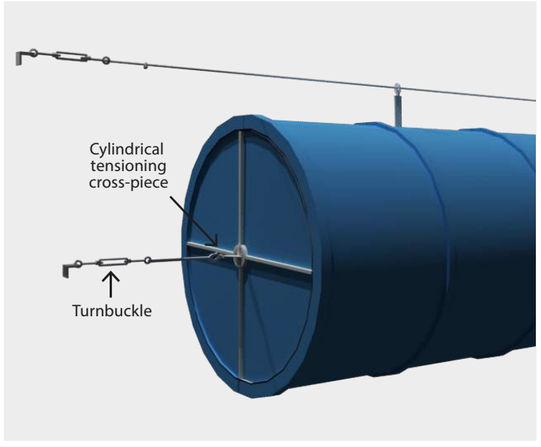
8.- SPECIAL APPLICATIONS

8.1 Keep the shape



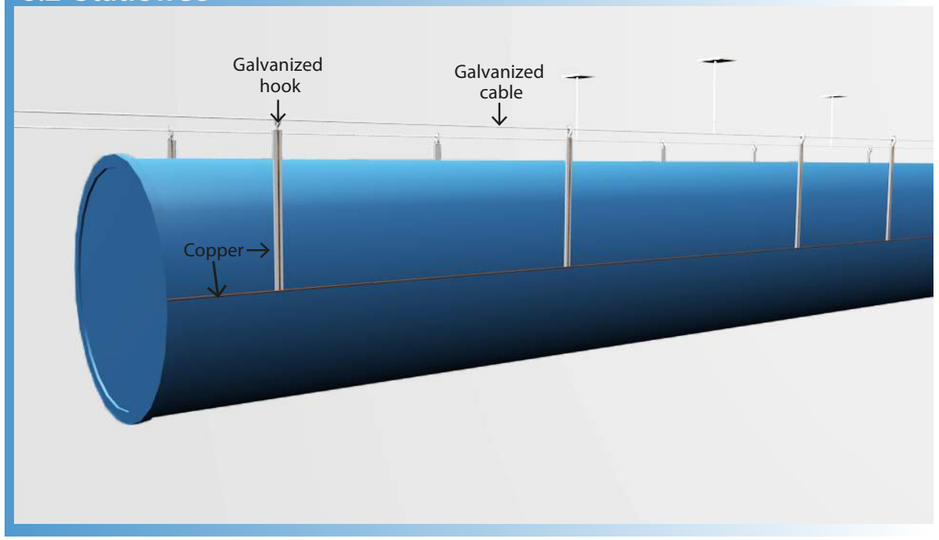
The main attribute of this application is to provide cylindrical tensioning to keep the shape and taut at all times with or without any air pressure in the duct. This is achieved using either plastic or metal rings that are distributed throughout the trajectory of the duct, also ideal to prevent the accumulation of dust on the surface of the duct.

Internal view



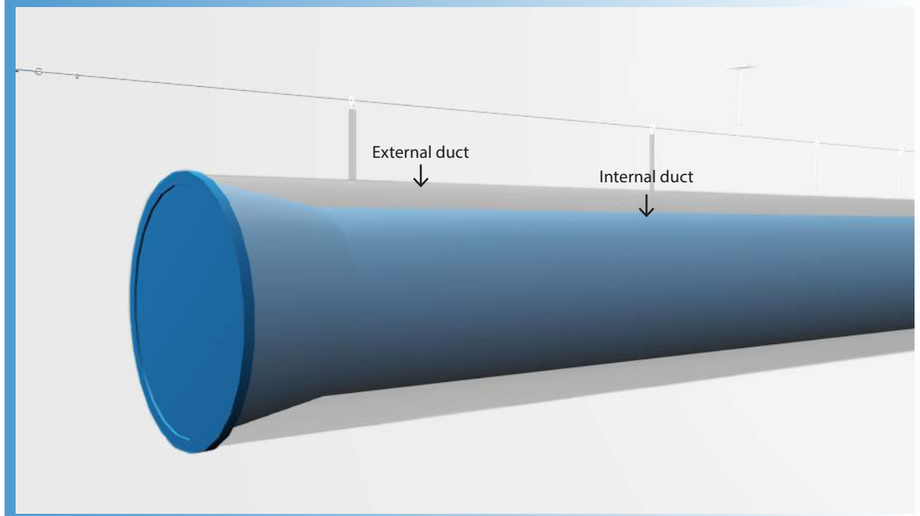
Each trajectory end is accompanied by a crosspiece that is attached to a vertical surface providing constant tension to the duct.

8.2 Static free



This application is made through a copper wire attachment on the duct as well as the supports, in order to avoid static charges generated in the air by grounding said charges to the floor and thus eliminating them. This type of application is commonly used in electronic industries.

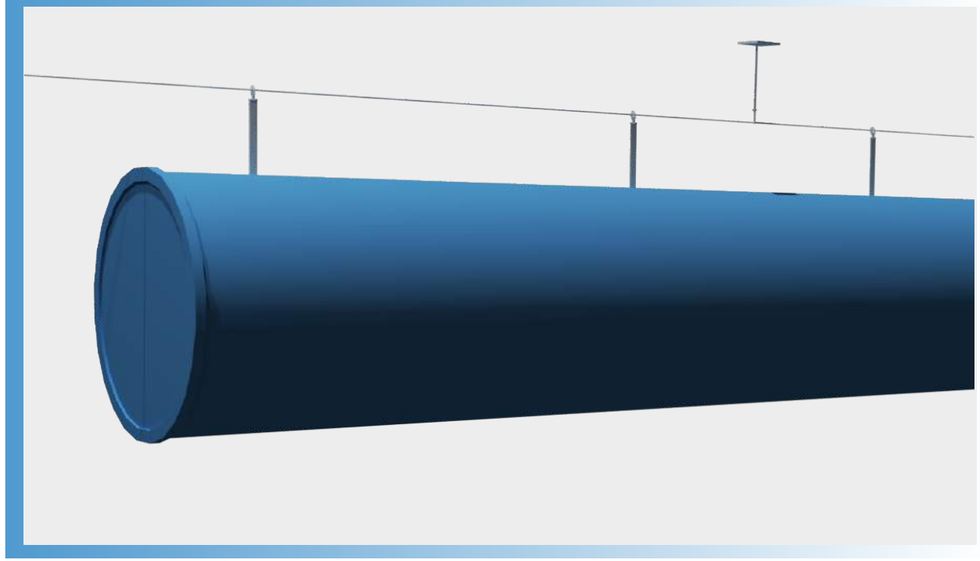
8.3 Air insulation



This application consists of producing isolation by means of an internal and external duct, which together form a layer of air to prevent condensation and heat transfer from the environment to the interior of the duct, in which the values of air temperature are maintained during the conduction and distribution of the system.

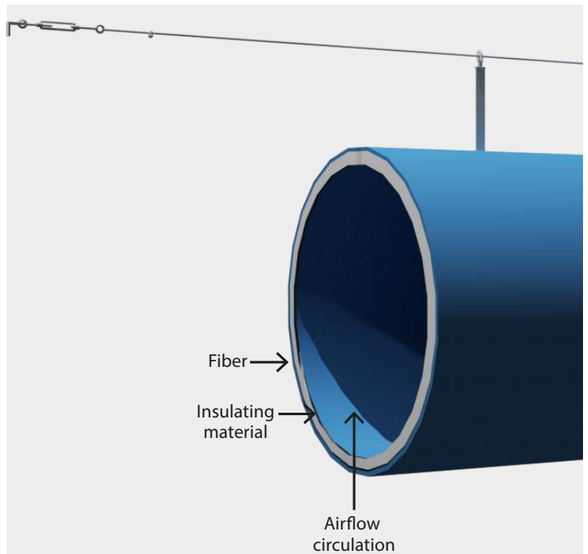
Note: Only available for straight runs.

8.4 Mechanical Insulation



This application has the main attribute of insulating through a polyethylene-based material and has a resistance to temperature changes between room temperature and the air conducted, preventing condensation.

Internal view

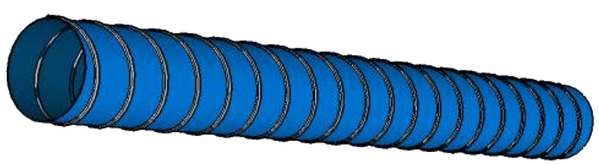


The thermal conductivity of this complement is 0.19 (BTU-IN/HP-FT2-ºF).

DROP CEILING APPLICATIONS

Typical application

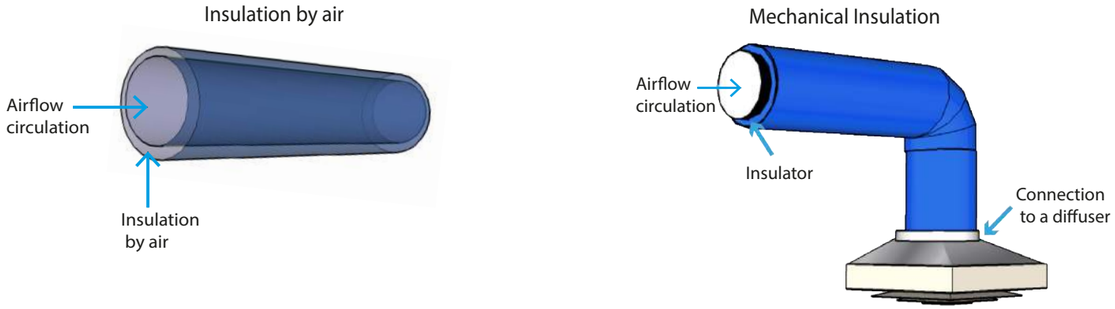
Spiral application



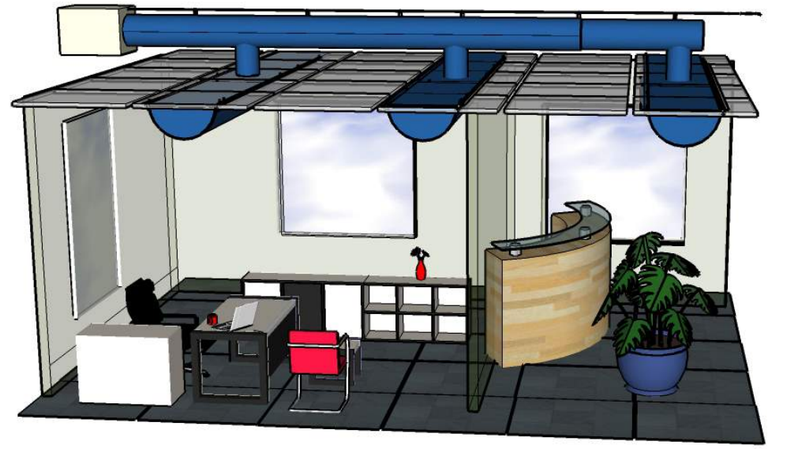
Spiralflex by SoftDucts is a textile duct composed of an internal galvanized steel structure whic helps mantain the shape and provides the necessary flexibility to direct the airflow.

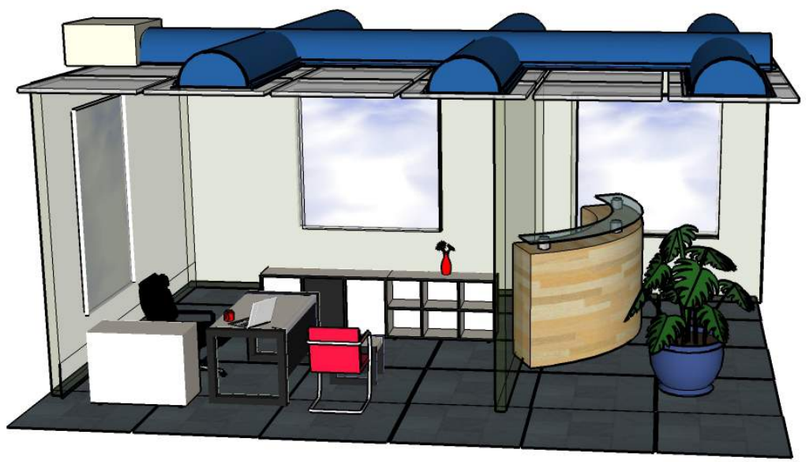
The fabric that composes it has a ripstop stretch yarn with high tensile strength,100% polyester, coated on both sides with PVC films, which provides optimum strength and durability.

Insulation application



Hybrid application



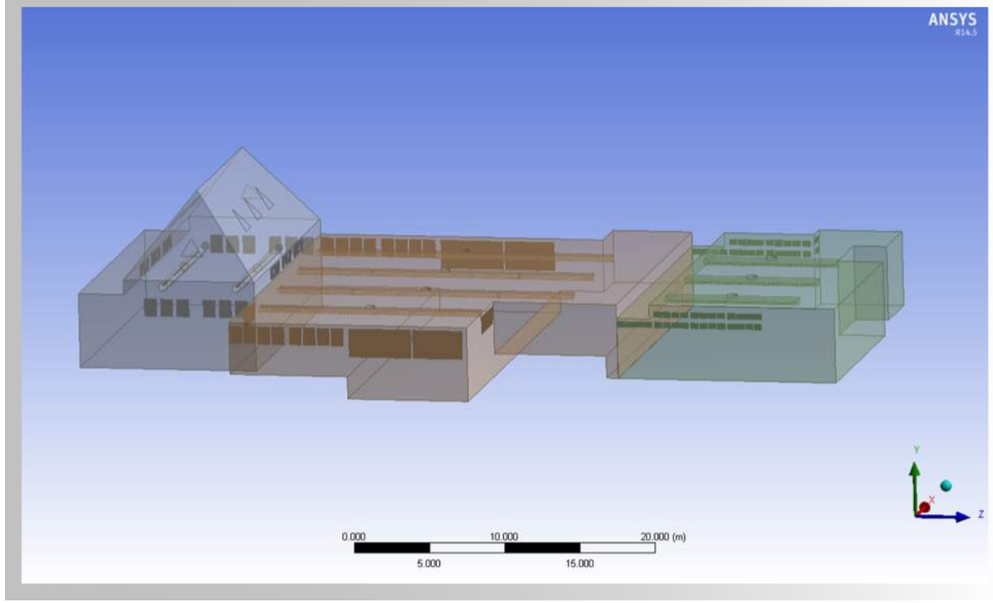


10.- SIMULATIONS

We have the technological tools necessary to offer and propose improvements in the integral fluid systems.

Ansys CFX is a computational software specialized in fluid dynamics that allows modeling in a virtual environment the behavior of air flow within the duct and the area to ventilate by mathematical simulation. It also allows the analysis at any point of the different variables involved in the behavior of the fluid such as velocity, pressure, temperature, viscosity, turbulence and isothermal throw.

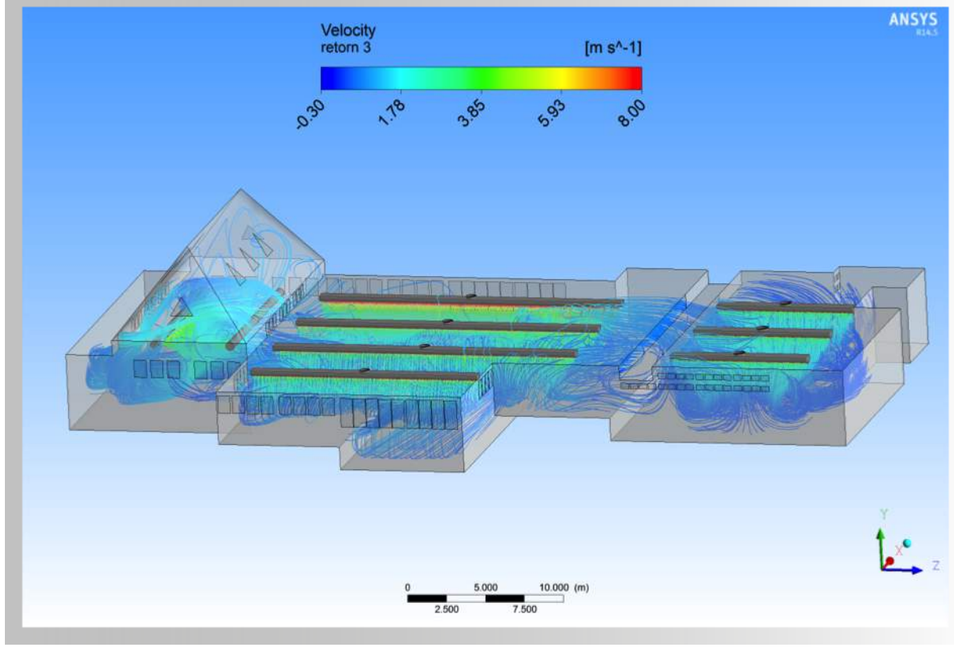
10.1 Volume of fluid (air) to be affected by the system is modeled



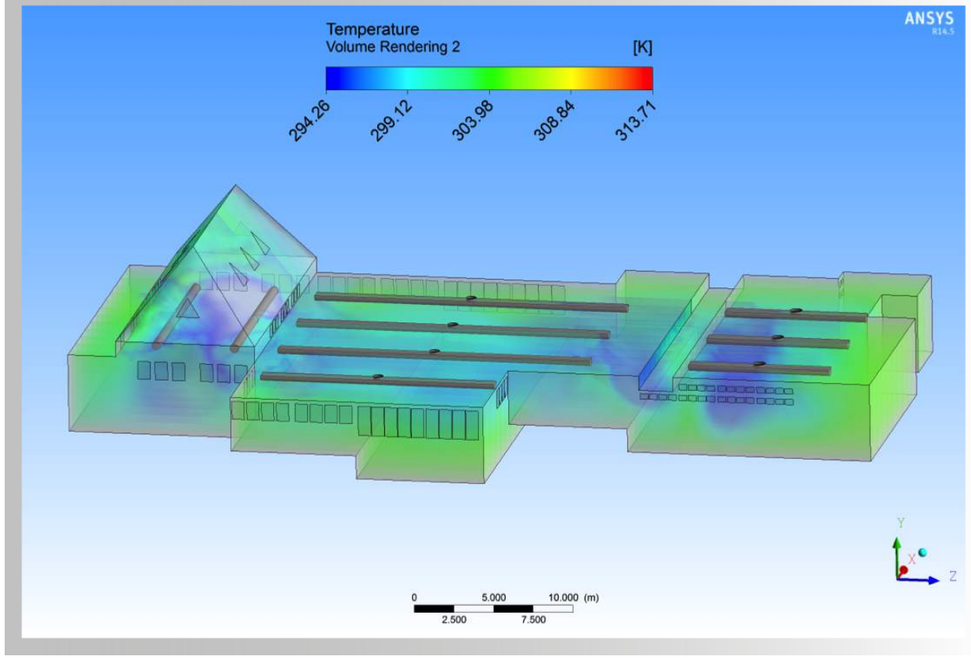
Advantages:

Support for regulations
Substantial reduction in time and costs in new designs.
Ability to simulate situations under very hazardous conditions or very difficult to experimentally simulate for example, very low or very high temperatures, hypersonic speeds, etc., (unlimited level of detail).

10.2 Velocity analysis



10.3 Temperature analysis



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