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Why SoftDucts?

1. Technical Support
2. Shorts Lead Times
3. Specialized 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

www.softducks.com
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.
Calculation of velocity, diameters and pressure drop

Circular ducts

Pressure drop (in wg), considered only for straight ducts of 100 ft

Diameters

Acceptable Optimal Risk

26"
30"
34"
38"
42"
46"
50"
54"
58"
62"

Flow rate (CFM x 1000)

800 1200 1600 2000 2400 2800

Velocity (ft/min)

0.04 0.04 0.05 0.02 0.02 0.06 0.05 0.03 0.03 0.02

0.08 0.03 0.03 0.13 0.19 0.27 0.11 0.16 0.22 0.09

0.14 0.19 0.27 0.11 0.16 0.22 0.09 0.14 0.19 0.08

0.12 0.2 0.3 0.42 0.27 0.41 0.57

Half round ducts

Acceptable Optimal Risk

500 700 1000

A) Length
B) Radius

Velocity (ft/min)

Pressure drop (in wg), considered only for straight ducts of 100 ft

Diameters

Flow rate (CFM x 1000)
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.

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.
The engineering department will select the appropriate fabric for each application.

**Lightweight line**
- Weight: 2.51 oz/yd²
- Durability: Polyester fibers
- Washability: 100% washable
- Hygiene: Anti-bacterial properties

**Heavy line**
- Weight: 10.03 to 10.47 oz/yd²
- Durability: Polyester fibers, highly resistant
- Washability: 100% washable
- Hygiene: Anti-bacterial properties

**Ecological line**
- Weight: 2.27 oz/yd²
- Durability: Manufactured with recycled material, highly resistant
- Washability: 100% washable
- Hygiene: Anti-bacterial properties

**Reinforced line**
- Weight: 10 to 18 oz/yd²
- Durability: Polyester fibers coated with PVC, weft knitted
- Washability: Weldable
- Hygiene: Mechanical strength
SoftDucts offers several types of diffusers:

**Perma flow**
- Utilized in areas where only a comfortable space is desired and not a direct airflow.
- The air diffuses through a perforated mesh.
- Through laser microperforation, we can achieve the permeability desired on the textile fiber.

**Uni flow**

**Multi flow**
- Standard design pressure of 1/2 inch wc

<table>
<thead>
<tr>
<th>Diameter orifices in</th>
<th>Throw in ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
</tr>
</tbody>
</table>

**Iner Jet**
- Standard design pressure of 1/2 inch wc

<table>
<thead>
<tr>
<th>Larger diameter nozzle in</th>
<th>Throw in ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>30</td>
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<tr>
<td>7</td>
<td>33</td>
</tr>
<tr>
<td>9</td>
<td>40</td>
</tr>
<tr>
<td>11</td>
<td>46</td>
</tr>
</tbody>
</table>

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

**Internal Structure**
Keeps its spherical shape even when the AHU is not on.

**Range**
Heights above 32 feet at a perimeter of 53 feet

**Advantages**
- Lightweight
- Quick installation
- Easy maintenance

**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.

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

The thermal conductivity of this complement is 0.19 (BTU-IN/HP-FT²-°F).
Spiralflex by SoftDucts is a textile duct composed of an internal galvanized steel structure which helps maintain 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.
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.

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).