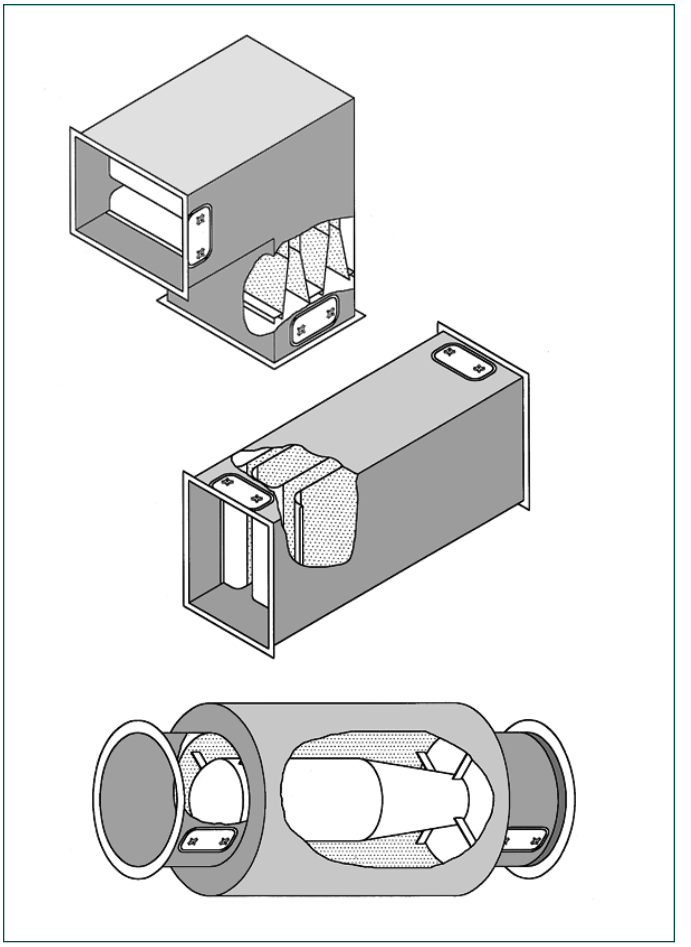
DESCRIPTION

More and more building owners are demanding the reduction or elimination of glass fiber duct liners from their duct and air handling unit systems. This can be done while still achieving the project sound criteria if the proper silencers are selected.

Vibro-Acoustics' IAQ Silencers range from Dissipative type when the objective is minimizing quality installation problems, to No-Media Silencers for the complete elimination of glass fiber within the duct system. This range is described below.



IAQ SILENCER TYPES

- **IAQ - 1: Replacing lined duct**
  - ◆ Standard dissipative silencers can be used to replace lined duct. This will drastically reduce the surface area of exposed glass fiber. They will also reduce the possibility for erosion because the silencer's glass fiber is contained in a quality manufactured product and protected by perforated metal. Silencers will also eliminate the need for lining complicated fittings which are both costly and more prone to erosion. (See SS1)
  - ◆ The unlined duct system can be more easily cleaned and special options can be provided to allow the silencer to be cleaned as well (See below)

- **IAQ - 2: Glass Fiber Cloth Liner**
  - ◆ Glass fiber cloth lining can be applied between the dissipative silencer's acoustical media and perforated metal to reduce particle erosion under high duct velocity applications (>2000 fpm). This is a standard feature in Vibro-Acoustics' AC (Axial Cone) silencers because they are normally installed in high velocity, highly turbulent regions when directly connected to axial fans.
  - ◆ Glass fiber cloth is a tight weave cloth which is not totally impervious to airflow. Therefore it reduces BUT DOES NOT ELIMINATE possible particle erosion. However it does allow the sound waves to enter the silencer's acoustical media, and thus not reducing its' acoustical performance.

- **IAQ - 3: Film Lined Silencers**
  - ◆ Vibro-Acoustics' Film Lined silencers have a film liner such as Tedlar (or Mylar) over the acoustical media and beneath the perforated metal. This further reduces the possibility of glass fiber erosion. The film also provides a barrier for moisture and dirt from entering the glass fiber, limiting the potential for microbial growth.
  - ◆ Film facings are impervious to airflow and provide a partial barrier to the sound waves entering the silencer's acoustical media. Acoustic performance is therefore reduced, especially in the mid frequency range. (See SS2)

- **IAQ - 4: Eliminating all fibrous materials: No-Media Silencers**
  - ◆ Vibro-Acoustics' No-Media silencers are void of any fibrous material. They operate on the principal of Helmholtz resonators. No glass fiber is present, thus none can erode, produce out-gassing or host microbial growth.
  - ◆ No-Media silencers, in comparison with dissipative silencers, generally have lower insertion loss performance for a given length and pressure drop. Thus longer lengths are usually required to achieve the similar acoustic performance. (See SS3)

continued next page...

SILENCER SHEETS

PERFORMANCE DATA / TESTING
See Performance Data section for applicable product.

Vibro-Acoustics' 4th generation aero-acoustic laboratory was the first laboratory to be NVLAP accredited for the ASTM E-477 silencer test code. NVLAP is administered by the U.S. Dept. of Commerce. See the Corporate/ Laboratory Section.

SILENCER SELECTION AND LOCATION
Vibro-Acoustics offers multiple selection methods, from Vibro-Acoustics Full-Service complete analysis to Do-It-Yourself quick selections. See the Selection/ Specification Section for details.

STANDARD CONSTRUCTION FEATURES
See Silencer Sheet of applicable product.

CONSTRUCTION OPTIONS
- heavier gauge casings and perforated metal
- continuously welded casings
- special materials e.g. stainless steel, aluminum
- flanges
- access ports for in-situ cleaning
- high transmission loss (HTL) casings to prevent break-out/break-in noise
- built in transitions
- removable splitters
- internal spray sterilization systems can be built into silencers
- drains to remove toxic or contaminated solutions
- special cleaning (e.g. degreased materials prior to and/or post fabrication)
- special packaging (e.g. shrink wrap and skidding, etc.)
- airflow measuring devices
- for details of above and more special options see Special Construction Options (pg. 3.33 to pg. 3.37).

TO SPECIFY
See example specification located in the Selection/ Specification section.