

# Noise Control

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Commercial, Industrial, and Environmental  
Products and Solutions



[www.kineticsnoise.com](http://www.kineticsnoise.com)

# Commercial Duct Silencers

Kinetics Noise Control offers the design and engineering assistance to integrate our duct silencers into a system solution. As a result you may choose from a selection of standard or custom engineered duct silencers that will satisfy the requirements of the application.

Integration of noise control measures using silencers requires careful consideration of space constraints, fan selection and aerodynamic pressure losses.

## Applications

- Fan Inlet and Discharge
- RTU/AHR/Rooftop Curbs/Air Cooled Chillers
- Cooling Towers
- Generator Room Ventilation
- HVAC Duct Systems for Commercial, Institutional, Government and Industrial Buildings

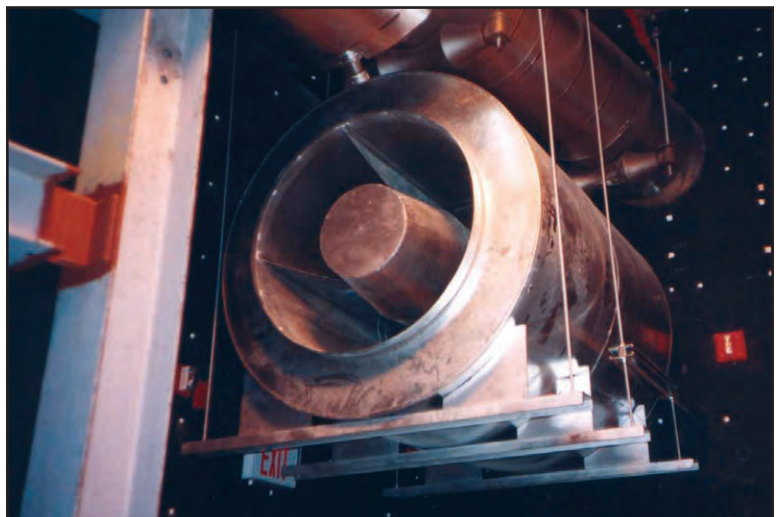
## Types: (Rectangular and Circular)

- Dissipative (Fill), Elbow and Straight
- Reactive (No-Fill), Elbow and Straight
- Cross-Talk
- Custom Designed
- Axial Cone
- Transitional
- Extended Body

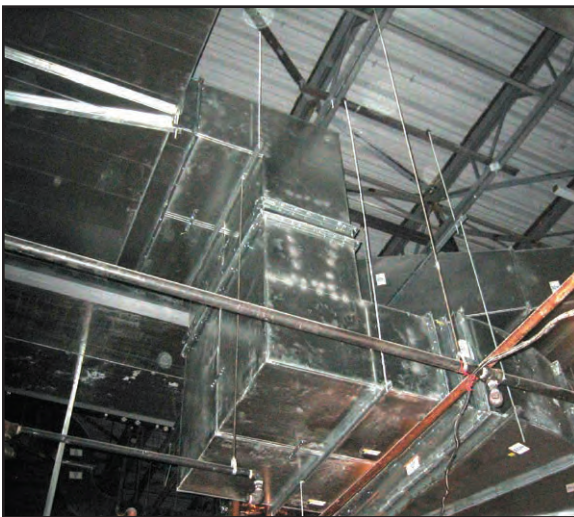
All Kinetics silencers are backed by independent testing in a NVLAP accredited laboratory in accordance with ASTM E477.



**Rectangular Duct Silencers Model KCRS-F/3**



**Return Air Circular Duct Silencer Model KCCS-F-B2**



**Z-Shaped "Offset" Duct Silencer**



**Generator Room Intake Silencer Bank**

# Web-Based Silencer Selection and Acoustical Duct System Analysis Program

Kinetics Noise Control, Inc. offers you, at no cost, our one-of-a-kind, Web-based, silencer selection program. The program incorporates the most up-to-date, design analysis algorithms presented by ASHRAE. It dramatically reduces your engineering time, while designing quiet duct systems.

The program provides you with a complete, eight-octave band, acoustical analysis. It takes into account natural attenuation of duct and fittings, sound power splits, end reflection, insertion loss of insulated duct and fittings, system component generated noise and critical space/room attenuation. It allows entry of fan sound power level data for any manufacturer's equipment. It is a true, "model-all" program. The program produces a complete acoustical report displaying whether your design meets the required critical space sound levels. If not, the program will automatically choose a Kinetics silencer based on the height, width, length and pressure loss restrictions. The program contains our complete line of rectangular, round, dissipative, reactive, straight and elbow silencers.

## KINETICS™ Silencers Online

**KINETICS Noise Control**

Login

**Additional Links**

- Kinetics Noise Control
- VRS Program
- Online Silencers (Prod)

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**Kinetics Silencers Online**



- Rectangular and Elbow Silencer Selection
- Circular Silencer Selection
- Louver Selection
- Submittals and Schedules
- HVAC Acoustic Analysis - End and Breakout Noise
- Ordering
- Production Release

**Web-based Silencer Selection & Duct System Analysis Software**

Kinetics Noise Control, Inc. can save you time and money by working with you to design economically quiet duct systems. We do this by offering you, at no cost, access to our one-of-a-kind on-line silencer database, selection and duct analysis program. The program incorporates the most up-to-date design analysis algorithms recognized by ASHRAE. It dramatically reduces your engineering time, while designing quiet duct systems.

The program provides you with a complete eight-octave band acoustical analysis. It takes into account natural attenuation of duct and fittings, sound power splits, end reflection, insertion loss of insulated duct and fittings and the critical space/room attenuation. It allows entry of any manufacturer's sound power level data as well as any manufacturer's equipment sound level used in the system. It is a true, model-all program. The program produces a report that displays whether or not your design meets your required noise level within the critical space. If the sound levels are not met, the program will automatically choose a duct silencer for you based on your allowable height, width, and length and pressure loss. A final analysis report is produced for you to place in your project file for future reference.

The program has been developed with you in mind. The features and benefits of this program for Acoustical Consultants, Mechanical Engineers and System Designers are:

## Silencer Schedule

| KNC Commercial Schedule                                                             |     |                    |                                                   |            |            |                                                     |                 |     |                                          |                                                                    |     |         |     |    |    |    |    |
|-------------------------------------------------------------------------------------|-----|--------------------|---------------------------------------------------|------------|------------|-----------------------------------------------------|-----------------|-----|------------------------------------------|--------------------------------------------------------------------|-----|---------|-----|----|----|----|----|
| Project Schedule                                                                    |     |                    | Project Name: Duct System 1<br>Customer: Engineer |            |            | Project Number: 1410385<br>Project Date: 10/13/2014 |                 |     | Revision: 1<br>Revision Date: 10/13/2014 |                                                                    |     | Project |     |    |    |    |    |
|  |     |                    |                                                   |            |            |                                                     |                 |     |                                          |                                                                    |     |         |     |    |    |    |    |
| SILENCER SCHEDULE DETAILS                                                           |     |                    |                                                   |            |            |                                                     |                 |     |                                          |                                                                    |     |         |     |    |    |    |    |
| Silencer Info                                                                       |     |                    | Performance Data                                  |            |            |                                                     | Total Size (in) |     |                                          | Silencer Dynamic Insertion Loss (dB)<br>per 100 ft. Reduction (dB) |     |         |     |    |    |    |    |
| Tag/Kinetics Model                                                                  | Qty | Fan or Area Served | Casing Thickness                                  | Flow (cfm) | PD (in wg) | Velocity (fpm)                                      | W               | H   | L                                        | 83                                                                 | 125 | 250     | 500 | 1K | 2K | 4K | 8K |
| SA-1 (Rectangular)<br>14130x94x12 = 60 x 128 x 72                                   | 1   | AHU-1              | 22 Gauge                                          | 62000      | 0.19       | 969                                                 | 128             | 72  | 60                                       | 3                                                                  | 9   | 21      | 32  | 26 | 14 | 8  |    |
| SA-2 (Elbow)<br>34830x147x19 = 68 x 88 x 24x12                                      | 1   | AHU-2              | 22 Gauge                                          | 10000      | 0.22       | 971                                                 | 68              | 24  | 86                                       | 13                                                                 | 19  | 28      | 39  | 45 | 23 | 24 |    |
| SA-3 (Circular)<br>18000x14x18 = 60                                                 | 1   | AHU-3              | 18 Gauge                                          | 15000      | 0.11       | 1006                                                | 238             | 246 | 76                                       | 6                                                                  | 11  | 22      | 33  | 44 | 24 | 13 | 15 |

## Project Specific Silencer Submittals

| Silencer Submittal Info              |                               | Printed on 10/13/2014                                                                                                                                        |                          |
|--------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>KINETICS Noise Control</b>        |                               | <b>Project Details</b>                                                                                                                                       |                          |
| Project Number:                      | 1410385                       | Project Name:                                                                                                                                                | Duct System 1            |
| Project Date:                        | October 13, 2014              | Customer:                                                                                                                                                    | Duct System 1            |
| Revision:                            |                               | Revision Date:                                                                                                                                               |                          |
| <b>Silencer Dimension (in)</b>       |                               | <b>Configuration</b>                                                                                                                                         |                          |
| Tag:                                 | SA-1                          | Face Velocity (fpm):                                                                                                                                         | 969                      |
| Quantity:                            | 1                             | Flow Volume (cfm):                                                                                                                                           | 62,000                   |
| System:                              | AHU-1                         | Pressure drop (in wg):                                                                                                                                       | 0.19                     |
| Width:                               | 128                           | <b>Silencer Module Dimension (in)</b>                                                                                                                        |                          |
| Height:                              | 72                            | Number of Pieces:                                                                                                                                            | 6                        |
| Length:                              | 60                            | M:                                                                                                                                                           | 42.925                   |
| Model:                               | 21.33KCRS-F-2 - 60 x 128 x 72 | N:                                                                                                                                                           | 36                       |
| RS Type:                             | 2                             | L:                                                                                                                                                           | 60                       |
| Unit Size:                           | 21.33                         | Weight each (lb):                                                                                                                                            | 208 (Total Weight=1,248) |
| <b>Dynamic Insertion Loss</b>        |                               | <b>Notes</b>                                                                                                                                                 |                          |
| Hz                                   | dB                            | 1. Silencer dimensions to be confirmed by customer prior to fabrication.                                                                                     |                          |
| 63                                   | 3                             | 2. The installed silencer pressure drop may be higher due to system effects caused by the location of duct elements upstream and downstream of the silencer. |                          |
| 125                                  | 9                             | 3. Tolerances are ±1/8" on all silencer units. If silencers are banded or painted the compound tolerance needs to be allotted by the contractor.             |                          |
| 250                                  | 21                            | 4. Silencer acoustic and aerodynamic performance data are in accordance with ASTM E 477-04a.                                                                 |                          |
| 500                                  | 32                            | 5. Flame spread/smoke developed indexes in accordance with ASTM E84, NFPA Standard 255, UL 723, or UL 5102.                                                  |                          |
| 1000                                 | 46                            | 6. Tested data tolerances are in accordance with AMCA 1011-03.                                                                                               |                          |
| 2000                                 | 55                            |                                                                                                                                                              |                          |
| 4000                                 | 57                            |                                                                                                                                                              |                          |
| 8000                                 | 55                            |                                                                                                                                                              |                          |
| <b>Silencer Construction Options</b> |                               |                                                                                                                                                              |                          |
| Casing Thickness:                    | 22 Gauge                      |                                                                                                                                                              |                          |
| Perforated Lining Thickness:         | 22 Gauge                      |                                                                                                                                                              |                          |
| Material:                            | Galvanized Steel              |                                                                                                                                                              |                          |
| Acoustic Media:                      | Fiberglass (standard)         |                                                                                                                                                              |                          |
| Media Covering:                      | None                          |                                                                                                                                                              |                          |
| Inlet Connection:                    | 2" Slip Connection (Std)      |                                                                                                                                                              |                          |
| Outlet Connection:                   | 2" Slip Connection (Std)      |                                                                                                                                                              |                          |

| Silencer Submittal Info              |                                | Printed on 10/13/2014                                                                                                                                        |               |     |    |             |     |
|--------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|----|-------------|-----|
| <b>KINETICS Noise Control</b>        |                                | <b>Project Details</b>                                                                                                                                       |               |     |    |             |     |
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| Project Date:                        | October 13, 2014               | Customer:                                                                                                                                                    | Duct System 1 |     |    |             |     |
| Revision:                            |                                | Revision Date:                                                                                                                                               |               |     |    |             |     |
| <b>Silencer Dimension (in)</b>       |                                | <b>Configuration</b>                                                                                                                                         |               |     |    |             |     |
| Tag:                                 | SA-2                           | Face Velocity (fpm):                                                                                                                                         | 973           |     |    |             |     |
| Quantity:                            | 1                              | Flow Volume (cfm):                                                                                                                                           | 11,000        |     |    |             |     |
| System:                              | AHU-2                          | Pressure drop (in wg):                                                                                                                                       | 0.22          |     |    |             |     |
| Width:                               | 68                             | Inlet Leg L1:                                                                                                                                                | 6             |     |    |             |     |
| Height:                              | 24                             | Outlet Leg L2:                                                                                                                                               | 12            |     |    |             |     |
| Length:                              | 86                             | Total Weight (lb):                                                                                                                                           | 345           |     |    |             |     |
| Model:                               | 34KCES-F-1 - 68 x 68 x 24-6/12 | <b>Silencer Module Dimension (in)</b>                                                                                                                        |               |     |    |             |     |
| RS Type:                             | 3                              | W                                                                                                                                                            | H             | L1  | L2 | Weight (lb) | Q   |
| Unit Size:                           | 34                             | 34                                                                                                                                                           | 24            | 6   | 12 | 104         | 1   |
| <b>Dynamic Insertion Loss</b>        |                                | 34                                                                                                                                                           | 24            | 122 | 40 | 46          | 241 |
| Hz                                   | dB                             |                                                                                                                                                              |               |     |    |             |     |
| 63                                   | 12                             |                                                                                                                                                              |               |     |    |             |     |
| 125                                  | 17                             |                                                                                                                                                              |               |     |    |             |     |
| 250                                  | 24                             |                                                                                                                                                              |               |     |    |             |     |
| 500                                  | 38                             |                                                                                                                                                              |               |     |    |             |     |
| 1000                                 | 44                             |                                                                                                                                                              |               |     |    |             |     |
| 2000                                 | 51                             |                                                                                                                                                              |               |     |    |             |     |
| 4000                                 | 53                             |                                                                                                                                                              |               |     |    |             |     |
| 8000                                 | 56                             |                                                                                                                                                              |               |     |    |             |     |
| <b>Silencer Construction Options</b> |                                |                                                                                                                                                              |               |     |    |             |     |
| Casing Thickness:                    | 22 Gauge                       |                                                                                                                                                              |               |     |    |             |     |
| Perforated Lining Thickness:         | 22 Gauge                       |                                                                                                                                                              |               |     |    |             |     |
| Material:                            | Galvanized Steel               |                                                                                                                                                              |               |     |    |             |     |
| Acoustic Media:                      | Fiberglass (standard)          |                                                                                                                                                              |               |     |    |             |     |
| Media Covering:                      | None                           |                                                                                                                                                              |               |     |    |             |     |
| Inlet Connection:                    | 2" Slip Connection (Std)       |                                                                                                                                                              |               |     |    |             |     |
| Outlet Connection:                   | 2" Slip Connection (Std)       |                                                                                                                                                              |               |     |    |             |     |
| <b>Notes</b>                         |                                |                                                                                                                                                              |               |     |    |             |     |
|                                      |                                | 1. Silencer dimensions to be confirmed by customer prior to fabrication.                                                                                     |               |     |    |             |     |
|                                      |                                | 2. The installed silencer pressure drop may be higher due to system effects caused by the location of duct elements upstream and downstream of the silencer. |               |     |    |             |     |
|                                      |                                | 3. Tolerances are ±1/8" on all silencer units. If silencers are banded or painted the compound tolerance needs to be allotted by the contractor.             |               |     |    |             |     |
|                                      |                                | 4. Silencer acoustic and aerodynamic performance data are in accordance with ASTM E 477-04a.                                                                 |               |     |    |             |     |
|                                      |                                | 5. Flame spread/smoke developed indexes in accordance with ASTM E84, NFPA Standard 255, UL 723, or UL 5102.                                                  |               |     |    |             |     |
|                                      |                                | 6. Tested data tolerances are in accordance with AMCA 1011-03.                                                                                               |               |     |    |             |     |

# Pressurized Plenums & Equipment Casings

## Pressurized Plenums

The control of noise in modern buildings due to air-conditioning is a normal procedure in most projects. Kinetics designs and manufactures a complete line of double-wall, pressurized plenum enclosures for heating, ventilating and air-conditioning systems. Designed to be assembled in the field, our panel enclosures provide thermal and optimum noise control through sound absorption and sound transmission loss.

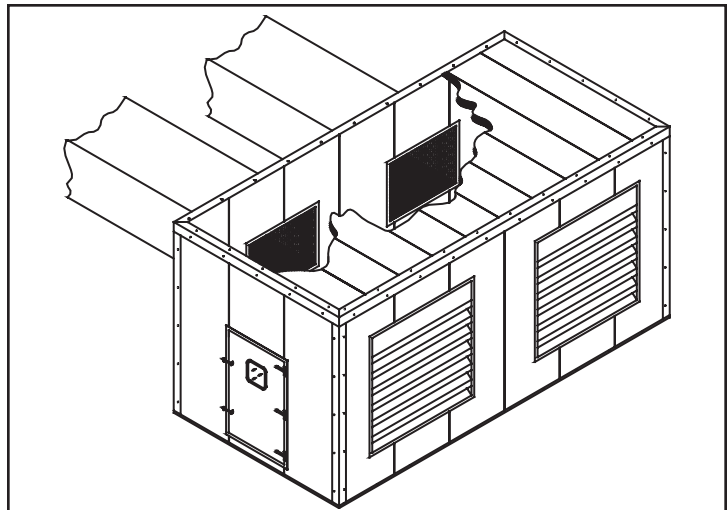
## Applications

- Built-up Air Handling Units
- Panel Duct Systems
- Outside and Exhaust Air Plenums
- Supply and Return Air Handling Systems

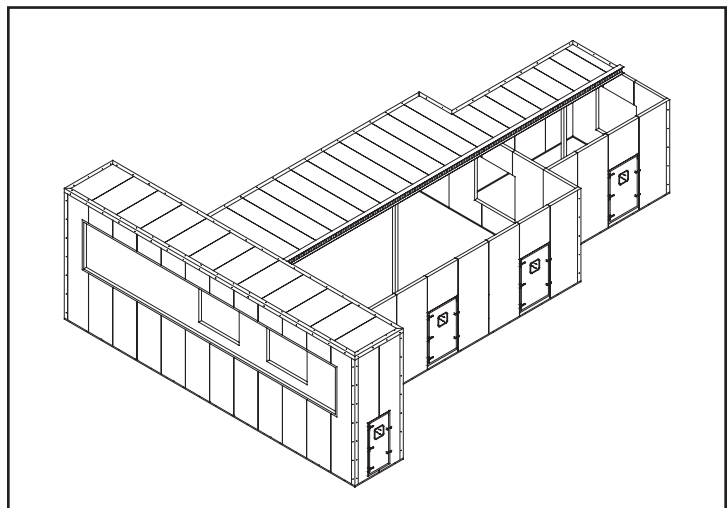
## Products Overview

- 2-, 4-, 6-inch thick
- 18/16 Gage Solid / 22 Gage Perforated Skins
- Galvanized/Stainless/Aluminum
- Tongue & Groove Panel Connections
- Access Doors with Airtight Seals
- Double-Glazed Wire Reinforced Door Windows
- Removable Panel Sections
- Factory Located Duct Penetrations
- Plenums are Structurally Designed Based on the Internal Positive or Negative Operating Static Pressure with a Maximum  $L/240$  Deflection
- AutoCAD Submittal and Piece-Marked Installation Drawings

**KINETICS** Noise Control offers complete design and engineering assistance including layout, as well as, providing acoustical and structural requirements.



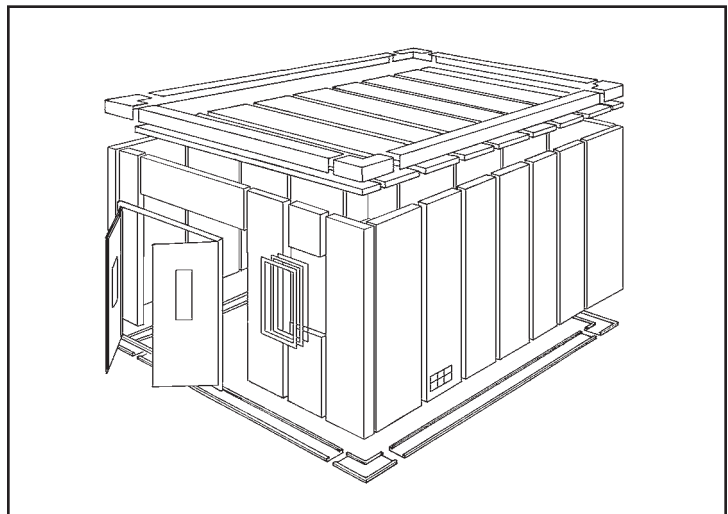
**Air Intake Plenum with Acoustic Louvers**



**Built-up Air Handling Unit Casing**



**AHU Plenum Interior**



**Control Room Equipment Casing**

# Industrial Ventilation Silencers



**Generator Enclosure Ventilation Silencers**



**Cleanable Baffle Silencer**



**Cooling Tower Inlet and Discharge Silencers**

## **Applications**

- Fan Inlet and Discharge
- Cooling Towers
- Stacks, Blow-offs, Vents
- Equipment/Process Enclosure Ventilation
- Chillers
- Dust Collectors
- Generators

## **Types: (Rectangular and Circular)**

- Dissipative (Fill), Elbow and Straight
- Reactive (No-Fill), Elbow and Straight
- Custom Designs as Required
- Industrial Grade Construction (Materials, Gages)
- Transitional
- Static Regain Designs



**Roof Top Factory Exhaust Silencer**



**Exhaust Air Silencer**

# NOISEBLOCK™ Enclosures and Buildings

**KINETICS Acoustical Enclosures** are designed and manufactured using our standard **NOISEBLOCK™** type “STL & HTL”, tongue and groove panels. The panels are fabricated of solid steel outer skin, and solid or perforated steel inner skin. Panels are stiffened with pre-formed internal steel channels. Acoustic grade fill is packed under compression. The enclosures are available with doors, access panels, removable panels, windows, and ventilation packages. Materials of construction include: galvanized steel, stainless steel, or aluminum.

Claims for hearing damage and safety requirements make a noise reduction program essential for many industries. In the past, many manufacturing facilities were regulated by a government agency such as OSHA, but today insurance companies who seek to keep claims for hearing damage to a minimum for the facilities they insure drive the vast majority of noise regulation.

Kinetics offers complete design and engineering assistance including layout as well as providing acoustical, structural and ventilation requirements.

## Applications

- Compressors and Pumps
- Constant Power Generator Sets
- Grinding, Pulverizer, Chipper Processes
- Punch Presses
- Vacuum Pump and Positive Displacement Blower Systems
- Outdoor Mechanical Equipment
- Paint Booths
- In-Plant Offices / Control Rooms
- Process Equipment
- Oil and Gas Midstream Compressors
- Extrusion Processes
- Flame Spray Booths



**Control Room and Testing Enclosures**



**Multiple Generator Enclosure**



**Generator and Cogen Enclosure**



**Skid Mounted Equipment**

# Systems for Equipment and Process



**Dual Midstream Compressor Building**

## Accessories

- Acoustical Doors are equipped with heavy-duty hinges, panic/passage hardware and seals to prevent noise leakage.
- Windows are double or single glazed, 1/4 in thick, laminated safety glass or wire reinforced including framing and sealing.
- Removable Panels for constant or intermittent access to equipment.
- Ventilation Systems include intake and exhaust silencers as well as supply or exhaust fans to meet the individual project's airflow requirements.
- Design & Engineering assistance including layout as well as determining acoustical, structural and ventilation requirements are included.
- AutoCAD submittal and piece-marked installation drawings are included.



**In-Plant Equipment Building**



**Air Compressor Enclosure**

**Industrial Fan Enclosure**



**Equipment Enclosure**



**Midstream Compressor Buildings**

# NOISEBLOCK™ Barrier Wall Systems

## for Utilities, Rooftop Equipment, Oil and Gas Operations, and Environmental Noise Compliance

The control of noise in everyday life is very important. Unwanted noise can cause stress related illnesses and severe noise can cause hearing damage. To meet these requirements and to help solve many noise problems, Kinetics manufactures a complete line of acoustical barrier panels called **NOISEBLOCK™ Barrier Panels**. These panels can be quickly and easily installed to provide complete or partial wall systems. The panels are designed to provide optimum noise control through sound absorption and sound transmission loss.

### Applications

- Utilities
- Rooftop / On-Grade Mechanical Equipment
- Equipment Yards
- Industrial Processes and Machinery
- Oil and Gas Midstream Compression/Operations



**Chiller Barrier Wall System, Before (right), After (above)**



**Utilities Barrier Wall**



**Roof Top Equipment Barrier**



**Four Sided Barrier Wall System**



**Chiller Barrier Wall**



**NOISEBLOCK™ Barrier Wall Midstream Compressor Station**



**Roof Top Barrier Wall**



**Roof Top Chiller Barrier Wall**



**Cooling Tower Barrier Wall System**

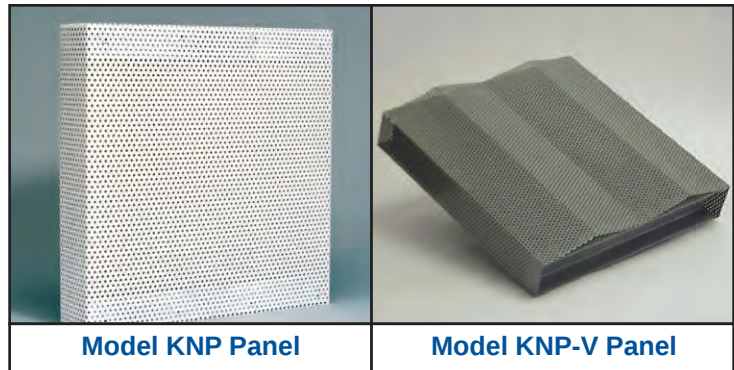
# Wall and Ceiling Panel Sound Absorbers

**KINETICS** KNP Panel Absorbers are functional durable and aesthetically pleasing perforated panels which are used to control background and reverberant noise. Although primarily intended as an absorber, the panels will act as a barrier when a solid sheet metal back is added. KNP Panels are also useful as additions to existing barriers to reduce reverberation time and to lower reflected sound levels.

Model KNP Panels are excellent sound absorbers over a wide frequency range. Their acoustic properties combined with their appearance and rugged durability make them a perfect choice for test chambers, class rooms, factories, auditoriums, mechanical equipment rooms, gymnasiums, theatres, garages, hallways and other spaces where reverberant noise is a problem. KNP panels are suitable for outdoor use and are ideal for installation over existing barrier walls.

Model KNP panels can be attached to walls, ceilings or other surfaces and can be located in a manner to achieve a pleasing appearance.

They are available with optional rear backing to increase their transmission loss and be used as a barrier. In addition, KNP Panels can be faced with perforated material on both sides and used as hanging absorptive baffles.



Model KNP Panel

Model KNP-V Panel



Test Room Model KNP Wall Panels



Equipment Yard Absorption



Chiller Yard Wall Absorption Panels

# Fixed Blade Acoustic Louvers

**KINETICS Fixed Blade Acoustic Louvers are economical, effective and attractive.**

They are designed for maximum attenuation when space is limited. They are aesthetically pleasing and available in various material types.

## Applications

- Building Vents
- Generator Room Vents
- Equipment Barrier Wall Systems
- Acoustical Enclosure Ventilation
- Commercial and Industrial Duct Systems

## Accessories

- Flanges
- Bird Screen
- Powder-Coat Finish
- Structural Design of Large Louver Banks

Acoustic Louvers are used as part of the intake/exhaust air system of buildings, structures, or equipment to help reduce noise produced by the system equipment. They have a relatively large surface area which compensates for their lack of depth.



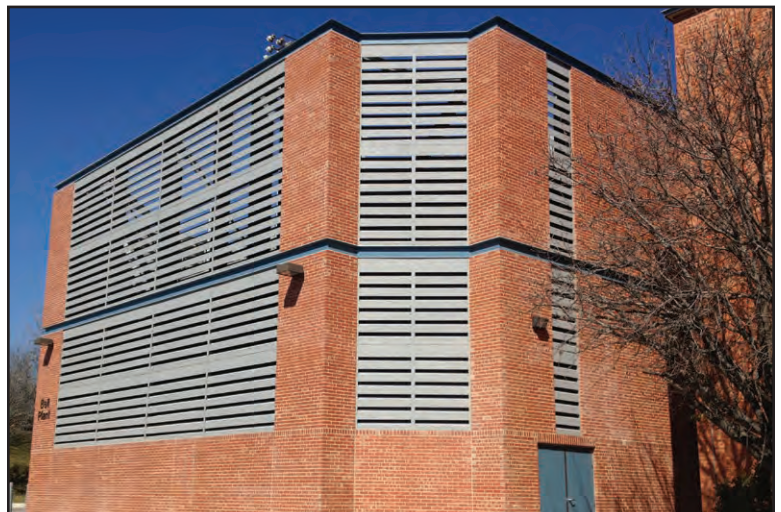
**Central Energy Plant Louvers**



**Data Center Backup Generators Room Louvers**



**Rooftop Louvered Equipment Barrier**



**Cooling Tower Yard Louvers**



**Custom Cooling Tower Ventilation Silencers**



**Outdoor Barrier Wall**



**In-Plant Equipment Enclosure**



**Equipment Yard Barrier Wall**

**KINETICS** Noise Control has been engineering and manufacturing vibration isolation and noise control products and systems for over 56 years. We pioneered the use of pre-compressed molded fiberglass for vibration isolation. Throughout the years, we have developed and refined a complete line of noise and vibration control products. In addition to the airborne noise control products illustrated in this brochure, we also offer complete designed pipe riser isolation systems, seismic restraint, engineered floating floor systems for control of airborne and impact noise, and a complete selection of barriers, absorbers and damping materials. Kinetics offers the engineering expertise, laboratory, and field-testing capabilities to work with you and your acoustical consultant to develop a solution to your specific noise control problem by applying independently tested **KINETICS** manufactured products.



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