Noise Control Products

Rectangular Silencers

pottorff.com
Pottorff rectangular silencers are engineered to provide a highly configurable noise control solution tuned to meet project specific acoustic and aerodynamic requirements. By tailoring construction elements including the Unit Width, Pressure Class, Fill Materials and internal baffle geometries, Pottorff provides a robust product offering backed by data collected in our NVLAP (Lab Code 201006-0) accredited Acoustical Testing Laboratory.

### Pressure Class

Silencer selection involves maximizing noise control performance while minimizing pressure loss. Pottorff offers a range of Pressure Class options which describes the balance of acoustic and aerodynamic performance.

<table>
<thead>
<tr>
<th>Velocity Range</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
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</tbody>
</table>

1. Pressure classes within nominal velocity ranges yield approximate pressure drops of 0.2" to 0.35" w.g (50 Pa to 87 Pa)

### Unit Width

Pottorff rectangular silencers utilize parallel baffle configurations of varying sizes to offer a range of acoustic performance options. The silencer’s Unit Width corresponds to the physical width of the baffle and is selected based on the required frequency range of noise control.

1. Recommended Velocity Range

<table>
<thead>
<tr>
<th>Unit Width</th>
<th>12</th>
<th>18</th>
<th>24</th>
<th>30</th>
<th>36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid/High Frequency</td>
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<tr>
<td>Smaller Unit Widths have narrow baffle spacing and are optimized for control of mid/high frequency noise.</td>
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<table>
<thead>
<tr>
<th>Low Frequency</th>
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<tbody>
<tr>
<td>Larger Unit Widths have thicker baffles and wider spacing optimized for control of low frequency noise.</td>
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</tbody>
</table>

### Optimal Aerodynamic Performance

Lower pressure classes use baffle configurations to minimize pressure loss.

### Optimal Acoustic Performance

Higher pressure classes use baffle configurations to maximize insertion loss.

### Model Names

Model names define Silencer Shape, Fill Material Options, Unit Width and Pressure Class to configure unique product offerings and ensure accuracy with specifications.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SHAPE</th>
<th>FILL MATERIAL</th>
<th>FILL PROTECTION</th>
<th>UNIT WIDTH</th>
<th>PRESSURE CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFN 12G</td>
<td>RECTANGULAR</td>
<td>FIBERGLASS</td>
<td>NONE</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>ELBOW</td>
<td>RECYCLED COTTON</td>
<td>NO FILL</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>CIRCULAR</td>
<td>NO FILL</td>
<td>FIBERGLASS CLOTH</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

*Extended Width option denoted in the silencer shape as “X” (RX, EX, CX).
Rectangular Silencers

Baffle Shape
The shape and internal geometry of baffle assemblies influence the acoustic and aerodynamic performance characteristics of a silencer. Baffle assemblies are often determined based upon project-specific aero-acoustic performance requirements (dynamic insertion loss, pressure drop), but can also be indicative of silencer application. No-Fill silencers utilize specially tuned baffle assemblies that are optimized for noise control in healthcare or other clean room applications where the use of fill material is often prohibited. Potorf offers baffle configurations for a variety of applications to meet project requirements.

Multiple Sections
Rectangular silencers are fabricated to align with project ductwork dimensions. A range of Unit Widths are available for a given duct dimension. These are grouped in single sections that are limited in size for shipping and handling purposes. Multiple sections are field assembled in silencer banks as needed to align with project-specific requirements.

Extended Width
Noise control performance is related to baffle width with wider baffle widths providing greater control of low frequency energy. Extended Width silencers increase the width of the baffle outside of the airstream providing improved low frequency noise control without increasing pressure loss.

Baffle Configuration

Straight
- Straight baffle shape maximizes dynamic insertion loss performance.

Straight No-Fill
- Straight baffle shape with tuned resonant chambers to maximize insertion loss without the use of fill material.

Straight Extended Width
- Extended Width models increase baffle width for improved noise control performance.

Unit Width
- Select Unit Width based on required frequency range of noise control.

Section Width
- Individual units grouped in single sections up to 48"x48" (1219 x 1219) for shipping and handling.

Bank Width
- Multiple sections field assembled to meet project dimensional requirements.

NOTE: Dimensions in parentheses ( ) are millimeters.
Fill Materials
Noise control in duct silencers is achieved using baffle assemblies filled with a sound absorptive material or specially tuned chambers. Pottorff offers a range of fill materials suitable for indoor, outdoor and corrosive environments including Galvanized Steel, Paint Grip Steel, 304 Stainless Steel and 316 Stainless Steel. Weight of galvanized finishes can be provided to meet project specific requirements.

Materials
Materials of internal and external components are typically selected based on the installed condition of the silencer. Pottorff offers a range of material options suitable for indoor, outdoor and corrosive environments including Galvanized Steel, Paint Grip Steel, 304 Stainless Steel and 316 Stainless Steel. Weight of galvanized finishes can be provided to meet project specific requirements.

Outer Casing
Ductwork in close proximity to mechanical equipment can yield elevated levels of duct breakout noise, or noise that radiates through the duct walls and into occupied spaces. The Outer Casing of duct silencers can be selected with heavier gauge materials to control duct breakout noise. For the most critical applications, such as direct downblast rooftop units above noise sensitive spaces, High Transmission Loss (HTL) casings and double wall constructions offer the best control of duct breakout noise.

Perforated Materials
The Perforated Material is an acoustically transparent screen that allows sound to pass through silencer baffles where it can be absorbed, while also providing a layer of protection against air erosion of fill materials. Alternative perforation patterns are used to maximize performance of resonant chambers for No-Fill silencers.

Fill Protection
Project requirements often require fill materials to be protected from exposure to the airstream or erosion in high velocity applications. Pottorff offers a range of fill protection options for specific applications.

Polymer Film
Fill material encapsulated with polymeric film membrane (mylar, tedlar), preventing exposure to the airstream in healthcare applications.

Fiberglass Cloth
Fill material encased in fiberglass cloth to prevent erosion in high velocity applications.

Recycled Cotton
Post industrial natural cotton fibers treated with EPA registered fungal inhibitor to actively resist the growth of mold, fungi and bacteria.

No Fill
Void of fill materials of any kind.

NOTE: Dimensions in parentheses ( ) are millimeters.
About Us

Pottorff offers a comprehensive line of noise control products used extensively in projects across the globe. For over 35 years we have been dedicated to providing the commercial and industrial acoustic markets with excellence in both products and service. Continuously improving our manufacturing techniques and equipment allows a delivery schedule second to none. Creating innovative tools that predict noise levels and simplify product selection makes Pottorff the company to choose to get the right product for every application.

Pottorff’s in-house Acoustical Laboratory, outfitted with state-of-the-art hardware and software tools, allow us to conduct testing according to the latest ASTM standards. Our laboratory is NVLAP accredited (Lab Code 201006-0) to evaluate dynamic insertion loss, self-generated noise and pressure drop in strict accordance with ASTM E477-13.