6. Noise control systems
6.1 Noise control systems, square

6.1.1 Splitter silencers

Product description

Splitter silencers are mainly used in ventilation systems. Other fields of application include noise reduction at building openings or their installation into sound enclosures. The enclosure consists of galvanised sheet steel with light-profile frames according to DIN 24192, which are available for pressure stages according to DIN 24190. The absorber material is covered in the splitter abrasion-proof material. It is fire-proof according to DIN 4102 and harmless to health (biologically soluble or > cl. 40) with a glass fibre covering. Noise control splitters allow for an air temperature of up to 100°C, with a perforated plate covering up to 150°C. The flow rate of air must be a maximum of 30 m/s. BerlinerLuft Komponenten und Systemtechnik GmbH, NL Mitte is a member of the RAL-Gutegemeinschaft-Schalldämpfer (quality association of noise control systems) (RAL-quality mark 595).

Within the dimension limits, all of the enclosure dimensions are available in gradings of 10 mm. Due to the variety of dimensions and technical data resulting from this, the PC software Akuswin is recommended for the design of noise control systems.

BerlinerLuft.
6.1 Noise control systems, square

6.1.1 Splitter silencers

Technical parameters

| Splitters - preferred dimensions: Actual size = nominal size-5 mm splitter thickness: 200 mm | Nominal sizes: splitters | mm |
|---|---|---|---|---|---|---|---|---|---|
| | splitter height | 300 | 450 | 600 | 900 | 1200 | 1500 | 1800 |
| | length of splitter | 500 | 700 | 1000 | 1250 | 1500 |

Delivery sizes

Note:
- Larger splitters are produced by attaching U and I caps.
  These are included in the scope of delivery.
- On request, splitters with the material grades 1.4301, 1.4571, or AlMg³
  are also available.
- Flat silencers
- Resonance silencers
6.2 Noise control products, round

6.2.1 Circular silencers, rigid

Circular silencer, rigid, without a core

Circular silencer, rigid, with a core

Circular silencers are used for reducing different sounds in round pipe systems without a significant pressure loss. The enclosure consists of a galvanised, welded tube. The inner tube is made of a perforated plate that is additionally provided with trickling protection.

It is optionally attached by a plug connector or flange. The absorbing material is fire-proof according to DIN 4102 and harmless to health (biologically soluble or > cl. 40). Air temperatures of up to 150°C, and flow rates of up to 30 m/s are permitted.

Delivery sizes

<table>
<thead>
<tr>
<th>Circular silencer, rigid, without a core</th>
<th>Circular silencer, rigid, with a core</th>
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</thead>
<tbody>
<tr>
<td>ND</td>
<td>80</td>
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<tr>
<td>PD</td>
<td>280</td>
</tr>
<tr>
<td>NL</td>
<td>500</td>
</tr>
</tbody>
</table>

*1 higher lengths are realised by stringing together

Application limits:
Gap flow rate = 30 m/s
Internal pressure = -1,600/+6,300 Pa
Temperature = 150°C

Application limits:
Gap flow rate = 30 m/s
Internal pressure = -1,600/+6,300 Pa
Temperature = 150°C
6.2 Noise control products, round

6.2.2 Circular silencers, flexible

Product description

Flexible circular silencers are preferably used as assembly-friendly and universally applicable silencers in the area of inserted ceilings of ventilation systems.

The enclosure consists of a flexible aluminium cladding tube, which is the inner jacket of a perforated aluminium tube. It is attached by a plug connector.

The absorbing material is fire-proof according to DIN 4102 and harmless to health (biologically soluble or > cl. 40). Air temperatures of up to 150°C and flow rates of up to 20m/s are permitted.

Legend:
- ND = nominal diameter
- PD = gasket thickness
- NL = nominal length
- DA = outer diameter

<table>
<thead>
<tr>
<th>mm</th>
<th>ND</th>
<th>80</th>
<th>100</th>
<th>125</th>
<th>140</th>
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<tbody>
<tr>
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<td>PD</td>
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</table>
6.5 Sound enclosures and special constructions

**Product description**

- sound enclosures
- noise screens
- coverings
- ducts lined with sound-absorbing components
- double-walled ducts and tubes
- flat telephony silencers
- circular silencers with a core or ring splitter
- disc silencers
- angled silencers
- resonance splitters
- splitters with special dimensions
- electroacoustic absorber
- tube components for structure-borne sound decoupling

**Special constructions**

Special construction - sound enclosure for an open pit large device

Schematic diagram (example)

Sound enclosures, sound insulating cabinets, and dividing walls

The dimensioning of the sound enclosures is determined by several factors, such as:
- the necessary incorporated insulation, depending on the range of the sound source
- cooling air demand, and if applicable air filtering, air conditioning, and control equipment
- accessibility and easy to (dis-)assemble
- structure-borne sound absorbing measures, sound absorption
- sealing of butt joints
- windows, doors, inspection openings, tube feed-throughs, etc.

As a rule, it is necessary for the noise control measure to be planned in consideration of the local conditions and to be specific to the respective case of application. Long-term experience in the field of casing noisy aggregates such as motors, blowers, re-cooling buildings, and turbines makes it possible for us to provide profound solutions even for extreme requirements.

**Design example: sound enclosure for blowers, simple wall construction**

(1 mm sheet steel, 50 mm mineral wool)
AKUSWIN®

System requirements

System requirements AKUSWIN
- WINDOWS version 95 and up
- 32 MB
- 10 MB hard disc storage unit
- VGA True Colour (also 256 colours)

Brief description of AKUSWIN
- technical design of splitter silencers, circular silencers, and flexible telephony silencers
- acoustic calculation of air conditioning plants in consideration of the component sound insulation of plant components, sound propagation outdoors, or simple room insulation models
- help assistant for frequent problems
- immediate aids and suggestions for inconsistent inputs
- print-out of quotation, order form, drawings, etc.

Software Download:
www.berlinerluft.de
› Noise Control Systems