Modular Environmental Sound Barrier Walls To Control Community Noise Emissions

**Advantages:**
- Best solution for property line noise ordinance compliance
- Turnkey design including modular panels, structural steel, flashing, fasteners, doors
- Designed to meet site wind load requirements as per building codes
- Engineering services include footer/foundation designs, PE stamped drawings, and wind load calculations
- Optional polycarbonate construction
- Installation and erection services available
- Optional factory or field painting
- Standard designs utilize 2", 4" and 5" thick HUSH GUARD™ acoustic panels rated at up to STC-48 and NRC 1.15
- Can incorporate lift-out sections, acoustical ventilation louvers, and other customized features
- Able to accommodate column spans of up to 16’.

**Applications:**
- Utilities and substations
- Mass transportation
- Highway barriers
- Cooling Towers
- Airports and military bases
- Race tracks and open recreational areas
- Industrial, commercial, and residential
- Process fans, blowers and compressors
- Construction barriers (portable designs available for purchase or rent)
- Chillers and condensing units
- Rooftop or grade-mounted bldg HVAC equipment
- Scrubbers, Incinerators, and Thermal Oxidators
- Dust collectors and cyclones
- Material handling, transfer conveyors, and classifiers
- Industrial/Manufacturing facilities located in residential areas.
- Any outdoor equipment or noise source

Power utility transformer HUSH WALL™ barrier.

HUSH WALL™ barrier surrounds condensing units.

HUSH WALL™ Outdoor Sound Barrier Systems

Product Data Sheet

Absorbers
Barriers
Composites
Damping & Diffusion
Electronic
Flow Control

Source/Airborne
Source/Structure
Path/Direct
Path/Indirect
Receiver

Industrial
Architectural
HVAC
OEM
Environmental

Noise and Vibration Control, Inc.

1-610-863-6300
About BRD HUSH WALL™ Products:

BRD HUSH WALL™ acoustical barriers are free standing, self-supporting modular composite systems providing both sound blocking (sound transmission loss) and sound reflection control (sound absorption). Panelized walls tie into a structural steel framework of vertical columns with diagonal, corner, and knee bracing as needed to meet the project requirements for wind loading. Basic HUSH WALL™ configurations are either external or internal mounting. Classic internal mounting is illustrated in the details below. Here the acoustic panels are stacked horizontally inside the web of the vertical column flanges and secured with backer angles. For the external mounting configuration, panels are usually attached in a vertical orientation to steel angles or channels that span across the vertical columns. This mounting option is illustrated in the detail on the next page.

Typical HUSH WALL™ Internal Mounting

Grade-mounted HUSH WALL™ reduces scroll chiller noise to achieve 52 dBA at 5'.

Standard Wall Section

Optional Wall Section

Wide flanged beam detail for high wind loads, tall walls, and post spacing applications.
Typical HUSH WALL™ External Mounting

Structural Steel Specifications

- Wide flange sections per ASTM A992 or A572 Grade 5D
- Angles/Channels per ASTM A36
- Hollow structural sections per ASTM A500 Grade B
- Plate per ASTM A3
- Design and fabrication to latest AISC standard
- Welding in accordance with latest ANSI/AWS D1.1
- Design loads per local building code requirements
- Shop coated paint primer finish with option for finish paint or hot dip galvanized
- Sand blasting prep is optional
Grade-Mounted Single Support Footers

The most common method of grade support for HUSH WALL™ vertical columns is individual footers. The sonotube footer installation procedure is illustrated at left and below. Circular footers of this nature do have some limitations depending on soil conditions, wind load requirements, exposure, and HUSH WALL™ overall height, size, and configuration. They are also the most economical to install.

Grade-Mounted Continuous Curb Foundations

Anchorage Selection Requirements

The contractor whose scope includes the footers/foundation should select and supply the anchors for the support columns. Typically for new construction, an “L” or “J” type anchor is recommended and should be positioned during the concrete pour. For installation on existing concrete, drop-in type epoxy grout fasteners should be used.
Acoustic Performance Data:

<table>
<thead>
<tr>
<th>Product</th>
<th>Sound Transmission Loss (dB) Frequency (Hz)</th>
<th>STC</th>
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<tbody>
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<td></td>
<td>125</td>
<td>250</td>
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<tr>
<td>HG-200</td>
<td>17</td>
<td>23</td>
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<tr>
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<tr>
<td>HG-500</td>
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Sound Absorption Coefficients Per Frequency (Hz)

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<tr>
<td></td>
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<td>250</td>
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<tr>
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<td>0.66</td>
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<tr>
<td>HG-400</td>
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<td>HG-420</td>
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<td>HG-500</td>
<td>0.92</td>
<td>1.15</td>
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Panel Constructions:

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<tr>
<th>Panel</th>
<th>Thickness</th>
<th>Solid Skin</th>
<th>Perf. Skin</th>
<th>Weight per sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG-200</td>
<td>2&quot;</td>
<td>18 ga.</td>
<td>22 ga.</td>
<td>4.0 lbs.</td>
</tr>
<tr>
<td>HG-210</td>
<td>2&quot;</td>
<td>16 ga.</td>
<td>22 ga.</td>
<td>4.7 lbs.</td>
</tr>
<tr>
<td>HG-400</td>
<td>4&quot;</td>
<td>18 ga.</td>
<td>22 ga.</td>
<td>5.0 lbs.</td>
</tr>
<tr>
<td>HG-410</td>
<td>4&quot;</td>
<td>16 ga.</td>
<td>22 ga.</td>
<td>5.7 lbs.</td>
</tr>
<tr>
<td>HG-420</td>
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<td>22 ga.</td>
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<td>HG-500</td>
<td>5&quot;</td>
<td>16 ga.</td>
<td>22 ga.</td>
<td>6.0 lbs.</td>
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</tbody>
</table>

Panel Finishes:
1. Galvanized steel (std.)
2. Galvanneal “Paint Ready” A-60 steel (optional)
3. Air dried shop applied
4. Thermosetting TGIC Polyester Powder Coating in color selected by Architect
5. Custom as specified

Steel Finishes:
1. Prime Painted (standard)
2. Primer with air dried shop applied finish paint
3. Hot dip galvanized (availability dependent on final steel member sizing)
4. Colors available to match panels
5. Sand blasting prep only as specified by contractor
6. Custom as specified

1. Panel skins are all galvanized cold rolled steel.
2. Perf. skins have 3/32” holes on 3/16” staggered centers
3. Optional aluminum and high density polyethylene constructions.
4. All stiffeners and panel channel framing is minimum 18 ga. steel with face sheets spot welded in place.
5. Panels are designed to withstand wind loads of 25 to 40 lbs/sq. ft., both negative and positive.
6. Panel fill is non-combustible high density semi-rigid non-hygroscopic HUSH BATT™ packed under 5% compression.
Traditional Internal Mounting Panel
Stacking Options With Fasteners

Tongue & Groove HUSH WALL™ Sound Barrier reduces emergency generator noise.

Partially erected 30’ high HUSH WALL™ encloses multi-stage compressor at air separation plant.

Tongue and Groove Panel Connection

“H” Joiner Panel Connection
Advantages:

- Does not require fasteners for panel joining
- Clean aesthetic appearance
- Reduces installation labor costs
- Best suited for horizontal internal mounting
- Increases panel rigidity and strength to allow long panel spans between columns
- Self-sealing and self-draining
- Best architectural solution
Self Sealing Panel Stacking Options (cont’d)

Available for panel spans between columns of up to 16’ long!
Shed roof HUSH WALL™ design protects upper floor building occupants.

HUSH WALL™ with top mounted sound baffles quiets chiller condenser fan exhaust.

HUSH WALL™ sound barrier constructed using HUSH CRETE™ acoustical CMU.

Integrates HUSH DUCT™ acoustical louvers allow HUSH WALL™ systems to “breathe”

HUSH WALL™ equipment mounted sound barrier Unitary™ System.

Optional HUSH CLAD™ absorption panels reduce building reflected noise.
HUSH WALL™ Remedial/Retrofit Designs

Side Mounted Cantilevered Framing

Top Mounted Cantilevered Framing

Bottom Mounted Cantilevered Framing
Rooftop Mounted Support Options

DUNNAGE PLATFORM DESIGN
Advanced planning during the design phase of new construction projects allows the equipment support structure to be oversized to provide adequate operational and maintenance clearance around the equipment in accordance with the unit OEM guidelines. This is particularly important for rooftop HVAC units such as condensing units, cooling towers, and chillers where proper airflow to the equipment is essential to maintain efficiencies and to avoid derating of the performance. HUSH WALL™ sound barrier heights need to be increased as the panels move further away from the noise source.

POST AND RAIL DESIGN
Where it is advantageous or necessary to distribute the static (dead load) and/or dynamic (overturning moment from wind loading) forces transmitted to the building steel, the post and rail design may be preferred. This results in a greater number of roof penetrations, especially where diagonal knee bracing is necessary. When combined with an external mounted system, panel installation will be simplified and it is easy to bring the panel wall base elevation down close to the roof for a more uniform look and improved acoustics on critical applications.
HUSH WALL™ Temporary/Construction Sound Barrier Systems

Features:
- Grade beams require no footers or foundation work
- Available up to 20’ high
- Outriggers to stabilize vertical columns supporting the panels
- Rated at STC-40 and NRC .95
- Standard finishes are galvanized steel for panels and prime painted mild steel for structural
- Optional powder coat or other surface finishes
- Single or multiple wall configurations are available.

Applications:
- Highway/road construction
- Soil remediation projects
- Power rental equipment
- HVAC/Refrigeration rental equipment
- Events and recreation

FOR ADDITIONAL INFORMATION ON TEMPORARY SOUND BARRIER OPTIONS, PLEASE REFER TO THE HUSH FLEX™ PRODUCT DATA SECTION

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