



NOISEBLOCK™ Pressurized Plenums and Equipment Casings

RECOMMENDED SPECIFICATION

1.01 GENERAL-

- A. Double-wall (insulated) plenums shall be provided as specified on drawings. All panels and components shall be prefabricated and supplied by a nationally-recognized manufacturer with published standards of constructions, assembly, and technical performance. The manufacturer shall have produced a standardized, prefabricated panel system for at least 10 years. Construction and performance of the installed system and components shall conform to all specifications listed in this document. The system and components shall not be susceptible to damage from extended exposure to airflow, pressure differentials, vibrations, air temperature or humidity.

Acceptable product: Kinetics Noise Control, Inc., NOISEBLOCK™ Plenums and Equipment Casings.

2.01 JOINT CONSTRUCTION-

- A. Panels shall have a tongue-and-groove joint construction. Panels will be held together with self tapping sheet metal screws. Standard panel types should not require H-connectors, tape, or any other type of connector device.

3.01 PANEL CONSTRUCTION-

- A. Standard panels shall be 2 or 4 inches thick, as noted on the drawings, with a solid galvanized steel exterior skin, and a solid or perforated interior galvanized steel skin as noted on the drawings.
- B. The outer and inner skins shall be tack-or spot-welded to the perimeter and internal longitudinal steel channel frames in such a manner and spacing that the panel will not fail at the maximum specified operating internal static pressure.
- C. The outer skin shall be constructed of galvanized steel of a minimum 18 gauge thickness.
- D. The inner skin shall be constructed of galvanized steel (solid or perforated) with a minimum 22-gauge thickness.
- E. Perforated material shall have a 23 percent open area.
- F. All perimeter and internal longitudinal steel channel members shall be constructed of ASTM Type-A 653, commercial-quality, galvanized steel with a minimum 18-gauge thickness.
- G. All steel panel surfaces, internal channels, and trim items shall be fabricated from galvanized steel type G90 coating class as determined by ASTM A-924 and shall meet all requirements of ASTM A-653 for commercial-quality galvanized carbon steel.

- H. Each panel shall be completely filled with acoustical/thermal insulating material that is noncombustible, inert, mildew-resistant, and vermin-proof. Insulation shall not settle within the panel and shall be installed under proper compression. No insulating materials shall be used that have a flame spread greater than 25 or a smoke developed greater than 50, as specified per ANSI/NFPA-90A.
- I. Where specified, septum panels shall consist of a solid galvanized steel skin (minimum 22 gauge thickness), a gypsum septum, acoustic grade fill and perforated or solid, galvanized, steel skin (minimum 22-gauge thickness).

4.01 COMPONENTS and INSTALLATION-

- A. All base channels shall be installed on a level concrete curb, the dimensions of which shall be determined from plan-view shop drawings of the system provided by the system manufacturer. Spacing and attachment method of base channel attachment to curb shall be designed and supplied by installing contractor.
- B. All enclosure trim items shall be constructed of galvanized steel, type G90 (minimum 18-gauge thickness) and furnished in standard lengths to be field cut to the required dimensions. Spacing of sheet metal screws, application of duct sealant, and positioning of trim shall be in accordance with the manufacturer's published installation details.
- C. All mechanical joints and external trim items shall be sealed with a UL-Classified duct sealant suitable for the application (indoors/outdoors) supplied by the installing contractor.
- D. Access doors shall be provided where specified on drawings and shall be 24 inches wide by 60 inches high unless otherwise indicated. All doors shall be the same nominal thickness as the adjacent panels. All access door skins shall be constructed with an 18-gauge solid inner and outer shell. Each door shall have a minimum of two heavy duty strap hinges and two, wedge-lever, door latches. All levers shall be installed to open against the air pressure differential. Doors shall seat against neoprene gasket materials, installed around the entire perimeter of the doorframe in such a manner that door operation will provide direction compression with no sliding action between the door and gasket.
- E. Where shown on drawings, doors shall be furnished with windows, which are composed of wire-reinforced, double-pane glass separated by an air space, and sealed against acoustical and air leakage by interior and exterior rubber seals. Windows shall be 12 inches wide by 12 inches high unless otherwise indicated.
- F. Openings for pipe conduits shall be field cut by the installing contractor to ensure proper positioning. All framing members, collars, and bell mouth fittings shall be insulated, welded, and sealed according to the manufacturer's published installation details.

5.01 STRUCTURAL PERFORMANCE-

- A. The entire panel system shall be designed by the manufacturer to be self-supporting. Where roof spans and wall loading require additional structural strength, it shall be provided by heavier panel skins, additional internal longitudinal reinforcing members, or additional structural members and necessary supporting pipe, tube steel or W-shape columns and beams. The

installing contactor shall supply and install all structural members and pipe columns according to the drawings and published installation details provided by the manufacturer.

- B. The furnished enclosure shall be able to withstand a positive internal static pressure of () inches wg and a negative internal static pressure of () inches wg. Installations subjected to the effects of weather shall be able to withstand a wind loading of () pounds per square foot.
- C. The assembled structure shall not exhibit any panel joint deflections in excess of L/200, where L is the unsupported span length of any panel section within the completed system.

6.01 ACOUSTICAL PERFORMANCE-

- A. The manufacturer shall provide certified independent test data listing sound absorption and transmission loss of panels. When requested by the engineer, the manufacturer shall arrange to have a copy of all pertinent acoustical laboratory reports forwarded directly to the engineer.
- B. When tested according to ANSI/ASTM C423 or a subsequent version of the standard, the panel shall have minimum sound absorption coefficients, as shown in Table 1.

Table 1-NOISEBLOCK™ STL-2" & 4", HTL-4"
Sound absorption Coefficients per ASTM C-423-66

Octave Band Number	2	3	4	5	6	7	NRC
Center Frequency (HZ)	125	250	500	1000	2000	4000	-----
Absorption Coefficients							
NOISEBLOCK (STL)-2"	0.15	0.66	1.07	1.06	0.97	0.86	0.95
NOISEBLOCK (STL)-4"	0.60	1.13	1.12	1.09	1.03	0.91	1.00
NOISEBLOCK (HTL)-4"	0.60	1.13	1.12	1.09	1.03	0.91	1.00

- C. When tested according to ASTM E90-70 or a subsequent version of this standard, the panel shall have minimum airborne sound transmission losses as listed in Table 2.

Table 2-NOISEBLOCK™ STL-2" & 4", HTL-4"
Sound Transmission Loss per ASTM E90-70

Octave Band Number	2	3	4	5	6	7	STC
Center Frequency (HZ)	125	250	500	1000	2000	4000	-----
Absorption Coefficients							
NOISEBLOCK (STL)-2"	17	23	34	47	55	57	37
NOISEBLOCK (STL)-4"	21	28	39	48	56	58	40
NOISEBLOCK (HTL)-4"	27	34	48	61	66	70	48

7.01 THERMAL PERFORMANCE-

- A. Insulating materials used in all prefabricated panels shall have the following maximum thermal conductance at a mean temperature of 75°F: 0.06 BTU per hour per square foot °F (4-inch panels) and 0.12 BTU per hour per square foot per °F (2-inch panels).