

## SECTION

### ACOUSTIC MODULAR ENCLOSURE PANELS

#### **PART 1 – GENERAL**

##### **1.1 SUMMARY**

- A. Acoustic enclosure assembled from 2” thick pre-manufactured components. Barrier is designed to meet performance criteria specified herein as a complete assembly.
- B. Provide labor, material, tools, equipment, scaffolding, transportation, inspection, certificates, and temporary protection necessary to:
  - 1. Provide Acoustical enclosure as shown on Drawings and as specified in these Specifications. Provide accessories and appurtenances required for complete working installation.
  - 2. Connectors and flashing shall make holes in walls acoustically tight in accordance with panel manufacturer’s instructions.
- C. Structural steel support frame as required.

##### **1.2 QUALITY ASSURANCE:**

- A. Regulatory Requirements:
  - 1. Acoustical performance: Minimum NRC (Noise Reduction Coefficient) rating of 0.90 and minimum STC (Sound Transmission Class) of 38 (refer to drawings for STC requirement) after panel fabrication.
  - 2. Structural requirements: design panels and attachment system for this installation to withstand wind load of \_\_\_\_ pounds per square foot, both positive and negative.
  - 3. Reference Standards:
    - a. ASTM E90-99 and E413-87 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
    - b. ASTM C423-90A and ASTM E795-00, Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

### **1.3 SUBMITTALS:**

- A. Product Data: Manufacturer's product specifications.
- B. Shop Drawings: Complete drawings showing components including mechanical and electrical requirements.
- C. Certificate of Compliance: Certify completed assembly meets requirements specified herein.
- D. Submit in accordance with Section 01300.
- E. Stamped (P.E.) calculations for all structural and panel components certifying compliance with 80-MPH wind load.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- A. Deliver products in sufficient quantity and time to maintain approved construction schedule.
- B. Materials shall be in original containers with seals unbroken and labels intact until time of use. Wrapped or bundled materials shall bear name of manufacturer and product. Damaged or otherwise unsuitable material, when so ascertained, shall be removed from Project site.
- C. Store products in secure, dry location, out of way of construction operations. Store products off ground and protect from elements. Wetting of elements not permitted.
- D. Prevent damage to materials, to other stored products, to existing construction, and project work.

### **1.5 WARRANTY**

Finish warranty: Furnish panel manufacturer's written warranty covering failure of the factory-applied finish on metal panels within the warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

**Warranty Period: 10 years**

## **PART 2 – PRODUCTS**

### **2.1 MATERIALS**

A. Acoustic Barrier wall shall be constructed of type QuietMod H/P 38 Panels manufactured by Noise Barriers, LLC., Schaumburg, IL.

**Manufacturer:**

Noise Barriers, LLC (NBL)  
1207 Remington Road, Suite E  
Schaumburg, IL 60173

Phone: (847) 843-0500  
Fax: (847) 843-0501  
www.noisebarriers.com

**Contact:**

John Finnegan

Phone: (315) 682-3821  
Fax: (315) 682-3868  
j.finnegan@noisebarriers.com

### **2.2 PANEL CONSTRUCTION**

- A. Except as shown on Drawings or at locations described below, use 2” thick. Exterior surfaces are solid sheet 16-ga. Galvanized steel. Interior surfaces are 22 ga. Perforated galvanized steel.
- B. Sound-retarding and absorbing fill material shall be noncombustible, inert mildew-resistant and vermin proof.
- C. Lateral panel reinforcement shall be minimum of 18 ga. Cold rolled steel and spaced so vertical span does not exceed 2 ft. – o in.
- D. Spot welds shall be no more than 2 in. apart.
- E. Prior to attaching face sheet, panel shall be dampened and filled with sound-retarding and absorbing elements. Fill shall be slightly larger and thicker than inside dimensions of panel. No voids will be tolerated.
- F. Weld and rivet face sheet to panel assembly to acoustically compress and hold fill materials in place. Panel assembly shall hold fill materials in place under severe conditions of vibration encountered in shipping, installation, and in operation of completed structure.
- G. Acoustic fill material shall be protected by means of a Tape-sealed bag. Bagged fill shall be held back from inside perforated surface by means of an open mesh spacer.
- H. Weep holes to permit water runoff shall be provided on all horizontal surfaces.

**2.3 PANEL JOINERS AND CONNECTORS**

- A. Construct connecting panel joiners of galvanized steel. Joiner design and fit shall prevent noise leakage while acoustically and structurally joining panels together. Joiners shall be roll formed sections independent of basic panel so there is no possibility of direct passage of noise.
- B. Joiners and connectors shall be detailed to support loads shown on Drawings.
- C. Weep holes to permit water runoff shall be provided on all horizontal surfaces that may trap water.

**2.4 PRIME AND FINISH PAINT**

- A. Metal surfaces to receive paint shall be degreased and cleaned in accordance with SSPC- 1, 1 with welds ground smooth and filled as needed. Exposed surfaces shall then be primed with one coat Modified Alkyd Baked enamel paint. Prime coats shall be applied by manufacturer.
- B. Finish paint to be one coat Alkyd Enamel applied by manufacturer. Color to be selected by purchaser.
- C. Provide sufficient paint to touch-up panels after installation of wall.

**2.5 INTERCHANGEABILITY AND REUSE**

- A. Acoustic structural components having same part numbers shall be completely interchangeable.
- B. Acoustic structure shall be such that no components will be damaged upon disassembly. Design shall allow structure to be assembled, disassembled and reassembled minimum of 3 times without detracting from acoustic performance.

**2.6 PANEL COMPONENT CHARACTERISTICS**

- A. Submit certified laboratory test including absorption and transmission loss values for specified panel type and construction of not less than following :

		<b>Sound Transmission Loss, dB</b>						
<b>OCTAVE BAND</b>								
<b>Center Frequencies, HZ</b>		125	250	500	1K	2K	4K	STC
<b>H/P 38</b>	<b>2" thick</b>	24	25	33	43	50	55	38

## Sound Absorption Coefficients

OCTAVE BAND							
Center Frequencies, HZ	125	250	500	1K	2K	4K	NRC
H/P 42 4" thick	0.26	0.53	1.00	1.03	0.97	1.02	0.90

### III. PART 3 - EXECUTION

#### 3.1 PANEL SUPPORTS AND ANCHORAGE

- A. Install girts, purlins, and other secondary structural panel support members and anchorage in accordance with AISC Manual of Steel Construction "Code of Standard Practice".
- B. Install panel support members on concrete parapet wall using methods and materials recommended by manufacturer of neoprene waterproofing to maintain integrity of waterproofing.

#### 3.2 PANEL INSTALLATION

- A. Install panels according to manufacturer's instructions and recommendations, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal and structural movement.
  - 1. Field cutting of exterior panels is not permitted.
  - 2. Install panels with exposed fasteners pre-finished to match panel finishes.
- B. Accessories: Install components required for a complete acoustical barrier panel system, including trim, coping, supports and attachments, connections between panels, seam covers, sealants, fillers, closures strips and similar items.

#### 3.3 CLEANING AND ADJUSTMENT

- A. Damaged units: Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by means of finish touch up or similar minor repair procedures.
- B. Cleaning: Remove temporary protective coverings and strippable films (if any) as soon as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended by panel manufacturer, and maintain in a clean condition during construction.

**END OF SECTION**