

SECTION 09 48 33
SONEX® Acoustical Wall Treatment

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Patterned, sound-absorptive wall panels.
 2. Patterned, sound-absorptive baffles.
- B. Related Sections:

EDIT NOTE: ADD OR DELETE SECTIONS PER PROJECT REQUIREMENTS.

1. Section 03 38 00 – Post-Tensioned Concrete.
2. Section 03 41 00 – Plant-Precast Structural Concrete.
3. Section 03 41 13 – Precast Concrete Hollow Core Planks.
4. Section 05 21 00 – Steel Joist Framing.
5. Section 05 31 00 – Steel Decking.
6. Section 06 15 00 – Wood Decking.
7. Section 06 17 53 – Shop-Fabricated Wood Trusses
8. Section 06 17 33 – Wood I-Joists.
9. Section 06 17 36 – Metal-Web Wood Joists.
10. Section 09 21 16 – Gypsum Board Assemblies.

1.2 SYSTEM DESCRIPTION

- A. Acoustical Performance Requirements:
1. SONEX® Wall Panels. NRC (Noise Reduction Coefficient): Comply with ASTM C423-90a up to 1.0 depending on thickness. See specific products for ratings.
 2. SONEX® Baffle: Sabins per Baffle: Comply with ASTM C423-90a. See specific products for ratings.

1.3 SUBMITTALS

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data: Manufacturer's technical data for each type of panel and baffle including fire-resistive characteristics, finishes, details of installation, and the following:
1. Manufacturer's installation instructions.
 2. Certified test reports indicating compliance with Performance Requirements specified herein.
- C. Samples: 2 full size sets of Samples of the following specified units for color selection or verification.

EDIT NOTE: RETAIN PANEL OR BAFFLE SELECTION BELOW. RETAIN BOTH IF EACH IS USED ON PROJECT.

1. Panels.
 2. Baffles.
- D. Closeout Submittals: Comply with Section 01 77 00 – Closeout Procedures.
1. Operating and Maintenance Manual, including cleaning and maintenance instructions.
 2. Extra Material for Owner's stock.
 3. Material Safety Data Sheets (MSDS).

1.4 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain the following units for entire Project from a single manufacturer.

EDIT NOTE: RETAIN PANEL OR BAFFLE SELECTION BELOW. RETAIN BOTH IF EACH IS USED ON PROJECT.

1. Panels.
2. Baffles.

- B. Manufacturer's Qualifications: Firm with not less than Closeout Submittals: Comply with Section 5 years experience in manufacturing of products similar in complexity to those required for this Project.
- C. Installer's Qualifications: Firm with not less than 5 years experience in installation of products similar in complexity to those required for this Project, including specific requirements indicated.
1. Successfully completed not less than 5 comparable scale projects.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01 60 00 – Product Requirements.
- B. Deliver and store materials in manufacturer's original unopened containers with brands, names, and production lot numbers clearly marked on these containers.
- C. Storage and Protection: Comply with manufacturer's recommendations.
1. Store products in a cool, dry place out of direct sunlight.
 2. Protect from elements and from damage.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements within building:
1. Panels do not require special environmental conditions.
 2. Systems may be installed at any stage of construction.
 3. Systems may be installed in cool storage rooms and rooms with high humidity

1.7 WARRANTY

- A. Provide manufacturer's written warranty per Section 01 77 00 – Closeout Procedures.

1.8 MAINTENANCE

- A. Extra Materials:
1. Deliver not less than the following quantity of each type, color, and pattern of material, exclusive of material required to properly complete installation.

EDIT NOTE: RETAIN AMOUNT OF EXTRA MATERIALS USED ON PROJECT. DELETE THIS ARTICLE IF NO EXTRA MATERIALS REQUIRED OR ACCEPTABLE.

- a. 3 percent.
 - b. 5 percent.
 - c. 1 carton.
2. Furnish Extra Materials from same production run to verify run for color.
 3. Package replacement materials with protective covering, identified with appropriate labels.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products from the following manufacturer:

1. pinta acoustic, inc.
2601 49th Avenue North, Ste. 400
Minneapolis, Minnesota 55412
Telephone: 800-662-0032
612-355-4250
Fax: 612-355-4255
Website: www.pinta-acoustic.com
E-mail: sales@pinta-acoustic.com

B. Substitutions: Comply with Section 01 60 00 – Product Requirements.

2.2 MANUFACTURED UNITS

EDIT NOTE: FOR EACH PROJECT, SELECT THE DESIRED PANEL OR BAFFLE ALONG WITH THE REQUIRED THICKNESS, FINISH, AND IF APPLICABLE, THE EDGE.

A. Acoustical Wall Panels: Lightweight, open-cell willtec® foam panel meeting the following requirements:

1. SONEX One Panel:
 - a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - 2) HPC: 15.
 - e. Smoke Density:
 - 1) Natural: 50.
 - 2) HPC: 200.
 - f. Panel Size: 24 inch by 48 inch (610 mm by 1219 mm).
 - g. Panel Thickness: 2 inches (51 mm).

EDIT NOTE: SELECT PANEL THICKNESS ABOVE OR BELOW. DELETE THICKNESS NOT REQUIRED FOR PROJECT.

- h. Panel Thickness: 3 inches (76 mm).

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT. HPC IMPROVES STAIN RESISTANCE AND CLEANABILITY.

- i. Finish: Natural White.
- j. Finish: Natural Grey.
- k. Finish: Applied Black HPC coating.
- l. Finish: Applied White HPC coating.
- m. Finish: Applied Light Grey HPC coating.
- n. Finish: Applied Medium Grey HPC coating.
- o. Finish: Applied Light Blue HPC coating.
- p. Finish: Applied Ivory HPC coating.
- q. Finish: Applied Almond HPC coating.
- r. Finish: Applied custom color HPC coating.
- s. Sound Absorption Coefficients: Type B and A mountings, ASTM C423-90a.

Frequencies (Hz)	<u>125</u>	<u>250</u>	<u>500</u>	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>	<u>NRC</u>	<u>Mounting</u>
2 inch (51 mm) Natural:	0.11	0.33	0.85	1.05	1.09	1.06	0.85	B
2 inch (51 mm) HPC:	0.13	0.41	1.02	1.18	1.18	1.13	0.95	B
3 inch (76 mm) Natural:	0.09	0.68	1.20	1.18	1.12	1.05	1.05	A
3 inch (76 mm) HPC:	0.13	0.85	1.25	1.22	1.13	1.14	1.10	A

2. SONEX Classic Panel:
- a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - 2) colortec: 10.
 - e. Smoke Density:
 - 1) Natural: 50.
 - 2) colortec: 10.
 - f. Panel Size: 24 inch by 48 inch (610 mm by 1219 mm).
 - g. Panel Thickness: 2 inches (51 mm).

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT. COLORTEC IS A PROCESS ONLY AVAILABLE FROM PINTA. THE PANELS ARE IMPREGNATED WITH A DYE TO PRODUCE A COLOR CONSISTENCY THROUGHOUT THE ENTIRE THICKNESS OF THE PANEL.

- h. Finish: Natural White.
- i. Finish: Natural Grey.
- j. Finish: Charcoal colortec.
- k. Sound Absorption Coefficients: Type B and A mountings, ASTM C423-90a.

Frequencies (Hz)	125	250	500	1,000	2,000	4,000	NRC	Mounting
2 inch (51 mm) Natural:	0.05	0.31	0.81	1.01	0.99	0.95	0.80	A
2 inch (51 mm) colortec:	0.05	0.31	0.81	0.96	0.97	0.97	0.75	A

3. Product: SONEX Valueline Panel:
- a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - 2) HPC: 15.
 - e. Smoke Density:
 - 1) Natural: 50.
 - 2) HPC: 200.
 - f. Panel Size: 24 inch by 48 inch (610 mm by 1219 mm).
 - g. Panel Thickness: 1-1/2 inches (38 mm).

EDIT NOTE: SELECT PANEL THICKNESS ABOVE OR BELOW. DELETE THICKNESSES NOT REQUIRED FOR PROJECT.

- h. Panel Thickness: 1-7/8 inches (48 mm).
- i. Panel Thickness: 2-1/2 inches (64 mm).

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT. HPC IMPROVES STAIN RESISTANCE AND CLEANABILITY. HPC COATING OPTION IS ONLY AVAILABLE ON ORDERS OF 20 BOXES OR MORE.

- j. Finish: Natural White.
- k. Finish: Natural Grey.
- l. Finish: Applied Black HPC coating.
- m. Finish: Applied White HPC coating.
- n. Finish: Applied Light Grey HPC coating.
- o. Finish: Applied Medium Grey HPC coating.
- p. Finish: Applied Light Blue HPC coating.
- q. Finish: Applied Ivory HPC coating.
- r. Finish: Applied Almond HPC coating.

- s. Finish: Applied custom color HPC coating.
- t. Sound Absorption Coefficients: Type B mountings, ASTM C423-90a.

<u>Frequencies (Hz)</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>	<u>NRC</u>
1-1/2 inch (38 mm) Natural:	0.08	0.29	0.73	0.94	0.97	0.89	0.75
1-7/8 inch (48 mm) Natural:	0.17	0.55	1.07	1.15	1.08	1.10	0.95
2-1/2 inch (64 mm) Natural:	0.19	0.62	1.15	1.21	1.14	1.20	1.05

- 4. Product: SONEX Pyramid Panel:
 - a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - e. Smoke Density:
 - 1) Natural: 50.
 - f. Panel Size: 24 inch by 24 inch (610 mm by 610 mm).
 - g. Panel Thickness: 2 inches (51 mm).

EDIT NOTE: SELECT PANEL THICKNESS ABOVE OR BELOW. DELETE THICKNESSES NOT REQUIRED FOR PROJECT.

- h. Panel Thickness: 3 inches (76 mm).
- i. Panel Thickness: 4 inches (102 mm).

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT.

- j. Finish: Natural White.
- k. Finish: Natural Grey.
- l. Sound Absorption Coefficients: Type B mountings, ASTM C423-90a.

<u>Frequencies (Hz)</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>	<u>NRC</u>
2 inch (51 mm) pyramid:	0.07	0.25	0.60	0.94	0.97	1.08	0.70
3 inch (76 mm) pyramid:	0.09	0.37	0.81	1.01	1.03	1.07	0.80
4 inch (102 mm) pyramid:	0.18	0.44	0.96	1.14	1.18	1.19	0.95

EDIT NOTE: THE FOLLOWING BAFFLES WERE TESTED FREE HANGING AND PARALLEL TO EACH OTHER WITH 12" SEPARATING EACH BAFFLE. BAFFLES WERE HUNG WITH THE 24" LENGTH PARALLEL TO THE FLOOR.

- B. Acoustical Ceiling Baffles: lightweight, open-cell willtec® baffles. Baffles come complete with nylon webbing straps or metal eye hooks for hanging. Comply with the following requirements:
 - 1. Product: SONEX One Baffles with nylon webbing straps:
 - a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - 2) HPC: 15.
 - e. Smoke Density:
 - 1) Natural: 50.
 - 2) HPC: 200.
 - f. Baffle Size: 24 inch by 48 inch (610 mm by 1219 mm).
 - g. Baffle Thickness: 3 inches (76 mm).
 - h. Edge Design: beveled

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT. HPC IMPROVES STAIN RESISTANCE AND CLEANABILITY.

- i. Finish: Natural White.
- j. Finish: Natural Grey.
- k. Finish: Applied Black HPC coating.
- l. Finish: Applied White HPC coating.
- m. Finish: Applied Light Grey HPC coating.
- n. Finish: Applied Medium Grey HPC coating.
- o. Finish: Applied Light Blue HPC coating.
- p. Finish: Applied Ivory HPC coating.
- q. Finish: Applied Almond HPC coating.
- r. Finish: Applied custom color HPC coating.
- s. Sabins per baffle: ASTM C423-90a.

<u>Frequencies (Hz)</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>	<u>Average</u>
Natural willtec:	2.3	5.7	10.5	15.3	18.6	24.8	12.9
HPC coated:	0.76	3.96	10.92	18.2	18.45	18.05	12.9

- 2. Product: SONEX Valueline Baffle with field-installed corkscrew hangers:
 - a. Density: 0.5 to 0.7 pounds per cubic foot (0.23 to 0.32 kg per m³).
 - b. Tensile Strength: 8 psi (0.06 MPa).
 - c. Flammability: Class 1 per ASTM E84.
 - d. Flame Spread:
 - 1) Natural: 5.
 - e. Smoke Density:
 - 1) Natural: 50.
 - f. Baffle Size: 24 inch by 48 inch (610 mm by 1219 mm).
 - g. Baffle Thickness: 2 inches (51 mm).

EDIT NOTE: SELECT PANEL COLOR BELOW. DELETE PANEL COLORS NOT REQUIRED FOR PROJECT. HPC IMPROVES STAIN RESISTANCE AND CLEANABILITY. HPC COATING OPTION IS ONLY AVAILABLE ON ORDERS OF 20 BOXES OR MORE.

- h. Finish: Natural White.
- i. Finish: Natural Grey.
- j. Finish: Applied Black HPC coating.
- k. Finish: Applied White HPC coating.
- l. Finish: Applied Light Grey HPC coating.
- m. Finish: Applied Medium Grey HPC coating.
- n. Finish: Applied Light Blue HPC coating.
- o. Finish: Applied Ivory HPC coating.
- p. Finish: Applied Almond HPC coating.
- q. Finish: Applied custom color HPC coating.
- r. Sabins per baffle: ASTM C423-90a.

<u>Frequencies (Hz)</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1,000</u>	<u>2,000</u>	<u>4,000</u>	<u>Average</u>
Natural:	1.0	5.4	10.8	16.3	18.7	24.0	12.7

2.3 ACCESSORIES

- A. Adhesive: Non-toxic, water-based adhesive, for use with foam products.
 - 1. pinta acouSTIC foam adhesive or approved substitute.

EDIT NOTE: SELECT ADHESIVE ABOVE FOR USE WITH PANELS. SELECT CHAIN BELOW FOR USE WITH BAFFLES.

- B. Lightweight chain or 1/16 inch (1.6 mm) steel cable.
 - 1. Use steel cable for wall-to-wall installations with corkscrew hangers.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper and or timely completion.
1. Do not proceed until unsatisfactory conditions have been corrected.

EDIT NOTE: USE THE FOLLOWING PREPARATION ARTICLE FOR ADHESIVE APPLIED INSTALLATIONS ONLY.

3.2 PREPARATION

- A. Prior to installing acoustical panels, make certain that surfaces to which adhesive will be applied are clean and free of dust, dirt, and other residues that would inhibit a proper bond.

3.3 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations for installation of the following units.

EDIT NOTE: RETAIN PANEL OR BAFFLE SELECTION BELOW. RETAIN BOTH IF EACH IS USED ON PROJECT.

1. Panels.
2. Baffles.

EDIT NOTE: USE THE FOLLOWING PARAGRAPH AND SUBPARAGRAPHS FOR ADHESIVE APPLIED INSTALLATIONS ONLY.

- B. Acoustical Panels:
1. Cut adhesive tube end to produce a 1/4 inch (6.4 mm) bead.
 2. Apply adhesive to panels per manufacturer's recommended pattern and press panel firmly into place per manufacturer's installation requirements.
 3. Install panels true to lines and plane indicated.

EDIT NOTE: USE THE FOLLOWING PARAGRAPH AND SUBPARAGRAPHS FOR CHAIN APPLIED INSTALLATIONS ONLY.

- C. Acoustical Baffles: Do not fasten anchors of any type to steel deck without written approval from structural engineer of record.
1. Install mounting cable or chain by attaching to bottom chord of trusses or joists.
 2. Attach bottom end of cable or chain directly to baffle's integral web strapping or grommets directly or with "S" type hooks.
 3. Install baffle in configuration and elevations indicated, true to lines and plane indicated.
 - a. Do not install baffles more than 10 feet (3 m) below ceiling or roof structure from which it is hanging. This may cause excessive swaying of baffles by air movement.

EDIT NOTE: IF HANGING BAFFLES ON A WALL-TO-WALL CABLE SYSTEM, USE ONLY CORKSCREW HANGERS.

- D. Cable installation with corkscrew hangers: Follow manufacturer's installation instructions.

3.4 CLEANING

- A. Clean adjacent surfaces and remove unused product and debris from site.
- B. After installation is completed, clean soiled surfaces of materials.
- C. Remove and reinstall improperly installed material.
- D. Remove damaged or discolored material, or material that cannot be properly cleaned, and install new material.



END OF SECTION

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