
PART 1 GENERAL**1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes all labor, materials, equipment and services necessary to complete the seamless sound absorptive system as shown on the drawings, finish schedules, and / or defined and specified herein.
- B. The Acoustical Finish System shall reduce reverberation time making voice, music and other sound much more intelligible.
 - 1. The design is based on a fine porous surface that appears to be solid, applied onto a mineral wool panel.
 - 2. High frequency sound energy passes through the pores, into the mineral wool, and is converted into heat energy.
 - 3. Low frequency sound energy vibrates the porous surface diaphragmatically, and is converted into heat energy.
- C. The Seamless Sound Absorption System shall consist of pre-coated mineral wool supporting panels, which are adhered to a stable substrate.
 - 1. The seams between panels shall be filled with a fill.
 - 2. A base coat and a finish coat, are applied onto the supporting panels on site, per manufacturer's specifications.
 - 3. The Top Coat shall be troweled smooth to give the appearance of a smooth conventional plaster.
- D. The work described in this Section, as shown on Drawings, Finish Schedules or as specified herein, shall be in accordance with the requirements of the Contract Documents.
- E. Related Sections:
 - 1. Division 1 Section "Sustainable Design Requirements" for additional LEED requirements.

1.3 QUALITY ASSURANCE

- A. The work of this section shall be performed by a company which specializes in the type of seamless sound absorptive acoustical finish system work required for this Project, with a minimum of 5 years of documented successful experience and shall be performed by skilled workmen thoroughly experienced in the necessary crafts.
 - 1. Work shall be performed in compliance with Owner's insurance underwriters' requirements and UL approvals and testing for materials, assemblies and procedures.
- B. Manufacturer shall specialize in manufacturing the type of seamless sound absorptive acoustical finish system specified in this section, with a minimum of 5 years of documented successful experience, and have the facilities capable of meeting all requirements of Contract Documents as a single-source responsibility and warranty.
- C. Certified Installers:
 - 1. All Contractors shall be Certified to install the Seamless Acoustical Finish System and have at least 3 years experience installing the product, employing supervisors and mechanics certified and approved by the manufacturer.
- D. New Installers:
 - 1. New installers shall comply with all requirements of the manufacturer's Certified Training Program, including, but not limited to, the purchase of approved installation hand tools and equipment as well as contracting the services of at least one of the manufacturer's full time on-site Certified Technicians throughout the duration of the installation to ensure quality and compliance with all of the manufacturer's details and other installation requirements.
- E. Manufacturer's identification tags or marks are not acceptable on surfaces which will remain exposed to view after installation.
 - 1. Evidence of "patching" after removal of tags or marks is not acceptable.

1.4 SUBMITTALS

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Shop Drawings / Product Data:
1. Base Drawings, Approved Detail Drawings and Product Literature.
 2. Show dimensioned wall elevations or ceiling plans with control joint locations, mounting details, transition details to adjacent work, design, weight, thickness, color and other data necessary to install the work and coordinate work with other affected trades.
- C. Samples / Mock-Up:
1. Provide two 8-1/2" x 11" samples of the Acoustical Finish System.
 2. Job Site Mock-Up: Install a 4' x 4' mock-up of the sound absorptive finish system replicating relative details and conditions.
 - a. Obtain mock-up acceptance before any additional applications.
 - b. Accomplish work to equal, or exceed standard established by accepted job site mock-up.
- D. Acoustical Performance Data:
1. Certified Acoustical Performance Sound Absorption Test Report data, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements.
 - a. Sound absorption reports shall not be more than 3 years old.
 - b. Noise Reduction Coefficient (NRC) for the 1.18" (30mm) system shall be 0.75 per ASTM C 423-07 *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*.
 - c. Specific performance of the 1.18" seamless absorptive plaster system shall be as follows:

Frequency, Hz	Absorption Coefficient
100	0.16
200	0.26
400	0.69
800	1.05
1,000	1.01
1,250	1.01
1,600	0.96
2,000	0.87
2,500	0.86
4,000	0.71
5,000	0.76

- E. Fire Test Data:
1. Certified Reports on Surface Burning Characteristics Determined by ASTM E 84 *Twenty-Five Foot Tunnel Furnace Test Method*, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements:
 - a. Class A Flame Spread Classification:
 - 1) 0 – 25 Flame Spread.
 - 2) 0 – 450 Smoke Development.
- F. Light Reflectance Coefficient Test Data:
1. Certified Reports on Light Reflectance Coefficient Performance Determined by ASTM E 1477-98 *Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating Sphere Reflectometer*, conducted by a recognized, independent, testing agency, shall be submitted upon request and meet the following minimum requirements:
 - a. Light Reflectance Value
 - 1) D65 (Daylight) 0.78 or greater.
 - 2) CWF2 (Cool White Fluorescent) 0.79 or greater.
- G. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.

- H. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB), using format in Article 3 of General Conditions.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with General Conditions and Division 1 Section "Product Requirements".
- B. Allow materials to become acclimated to Project conditions before installation.
- C. Ship and deliver in protective packaging to prevent freight damage.
- D. Store materials in accordance with manufacturer's recommendations in a fully enclosed space where materials will be protected against damage from moisture, direct sunlight, surface contamination and other causes.
1. All wet work must be completed in area of storage.
- E. Protect base coat and finish coat from freezing.
1. Product that has frozen cannot be used and is not warranted.

1.6 PROJECT CONDITIONS

- A. Environmental Requirements: Comply with requirements of referenced plaster application standards and recommendations of product manufacturer for environmental conditions before, during and after installation.
- B. Cold Weather Requirements: When ambient outdoor temperatures are below 40 deg F, maintain a continuous uniform indoor temperature of at least 50 deg F for at least 3 days before beginning the material application, during its application and until material is dry, but for at least 7 days after application is complete.
1. Distribute heat evenly; prevent concentrated or uneven heat from contacting the materials.
- C. Ventilation: Ventilate building spaces as required to remove excess moisture to promote drying of the applied materials.
- D. Protect contiguous work from soiling, splattering, moisture deterioration and other harmful effects that may be caused by the application of the materials.

1.7 WARRANTY

- A. Comply with General Conditions and Division 1 Section "Product Requirements".

PART 2 PRODUCTS

2.1 UNAUTHORIZED MATERIALS

- A. Materials and products required for work of this section shall not contain asbestos, polychlorinated biphenyls (PCB) or other hazardous materials identified by the Owner.

2.2 ACCEPTABLE MANUFACTURERS

- A. Products of the manufacturers specified in this section establish the minimum functional, aesthetic and quality standards required for work of this section.
- B. Substitutions: Comply with General Conditions using form in Division 1 Section "Substitution Request Form".

2.3 MATERIALS

- A. Installation shall be based upon the BASWaphon Sound Absorptive Acoustical Finish System's performance; specifications, information and details as supplied by BASWA acoustic North America, LLC, 3900 Ben Hur Ave., Suite 10, Willoughby, Ohio 44094 www.baswaphon.com (440.951.6022 phone).
1. Other products and installers must meet the exact design and performance criteria described herein. Substitutions only considered by written approval prior to bid.
- B. BASWaphon shall be provided in a total system thickness (adhesive, Pre-Coated mineral wool panels, Base 407 Coat and Top Coat) of approximately 1.18".

- C. The Seamless Sound Absorption System shall consist of BASWAphon Pre-Coated mineral wool supporting panels, BASWAphon panel adhesive, BASWAphon Fill, a base coat of BASWAphon Base 407 and a finish coat of BASWAphon Top.
- D. Trim Pieces:
 - 1. All corner beads, reveals, terminations, control joints or other trim pieces shall be white vinyl, manufactured by Trim-Tex or Vinyl Corp. in profiles approved by BASWA acoustic North America, LLC.
 - 2. Trims shall be installed with Trim-Tex 847 Spray Adhesive.
- E. The Base 407 and Top coats shall be provided in the standard BASWAphon "natural white" color.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine areas where, and conditions under which, BASWAphon is to be installed.
 - 1. Correct any conditions detrimental to the proper and timely completion of the work.
 - 2. Do not proceed until unsatisfactory conditions have been corrected in order to permit the proper installation of the work.
- B. Verify that all mechanical and electrical services within the area of application have been roughed in at the appropriate depth relative to the thickness of the system; tested and approved, prior to commencement of application.
 - 1. Review approved details provided by BASWA acoustic North America, LLC for verification.

3.2 ACCEPTABLE SUBSTRATE

- A. General:
 - 1. All BASWAphon systems must be installed over a "sealed air tight" substrate.
 - a. All penetrations shall be "closed off" to prevent air from passing through the BASWAphon, thereafter through the substrate and then into the plenum above, or vice versa.
 - 2. All HVAC, electrical, fire sprinkler and other penetrations of the substrate shall be sealed with traditional drywall tape or a self-adhesive fire tape to prevent air movement between the plenum and finished space or vice versa.
 - 3. Adhesive Strength required for bonding to the substrate surface for the application of the BASWAphon system is a minimum of 17 N/psf.
 - 4. Plywood substrates are not acceptable due to the potential of excessive expansion and contraction movement.
 - 5. All substrates for the application shall not vary from plumb, level, or a "smooth consistent curvature" by more than 1/4 inch in 12 feet.
- B. Substrate Material:
 - 1. New drywall substrates receiving BASWAphon Base 407 and Top Coats only, *located in a different plane than those areas receiving the full BASWAphon system*, shall be a Level Four finish; taped, coated and sanded. Substrate shall be primed with latex primer tinted to match Sherwin Williams SW7043 "Worldly Grey" prior to application of Base 407 and Top Coats.
 - 2. New drywall substrates receiving BASWAphon Pre-Fill, Base 407 and Top Coats only, *located in the same plane as areas receiving the full BASWAphon system*, shall be a Level Four finish; taped, coated and sanded. Substrate shall be primed with latex primer tinted to match Sherwin Williams SW7043 "Worldly Grey" prior to application of Base 407 and Top Coats.

3.3 INSTALLATION

- A. General Information and Requirements:
 - 1. Hand Tools:
 - a. All application of BASWAphon Pre-Coated mineral wool panels, Fill, Base 407 and Top Coats must be facilitated by using the proper BASWAphon stainless steel flat or notched hand trowels supplied by BASWA acoustic North America, LLC.
 - b. The proper notched gauging trowels and smoothing trowels shall be used at each step noted below in order to control material thickness.
 - 2. BASWAjet Pump (Optional):

- a. The BASWAphon Base 407 and Top Coats may be applied onto the stable substrate using traditional hawk and trowel methods; however, use of the BASWAjet pump, which is specifically designed for the BASWAphon product, dramatically increases production and greatly reduces product waste.
 - b. The proper notched gauging trowels and smoothing trowels shall be used at each step noted below in order to control material thickness.
 - c. BASWAjet pump is supplied by BASWA acoustic North America, LLC.
 3. Lighting:
 - a. Inherent in all hand troweled product applications, minor acceptable trowel marks in the finished surface may occur and become exposed or "exaggerated" under critical lighting.
 - b. Ensure that the lighting used during the entire installation process replicates the actual finished lighting.
 - c. All skylights, clearstory windows and other openings which naturally light the area of the installation shall be uncovered during the entire installation in order to represent finished conditions.
 4. Drying Times:
 - a. Drying times when installing the BASWAphon panel adhesive, Fill, Base 407 and Top Coats are typically overnight, however, drying times may be longer due to unusual on-site conditions.
 - b. Prior to proceeding with any additional work, ensure BASWAphon panel adhesive, Fill, Base 407 or Top Coat is completely and thoroughly dry.
 5. Finished Coat Installation:
 - a. Application of the BASWAphon Top coat shall be facilitated in one operation at each area of installation; "cold joints" in the Top coat are not acceptable.
 6. Staging:
 - a. Generally, the BASWAphon system is installed using full "tiered scaffolding with outriggers" on wall applications and / or a full "dance floor scaffolding" on ceiling applications in order to achieve an acceptable finish without "cold joints".
 - b. Rolling tower scaffolds which can be moved across an installation area may also be acceptable.
 7. Access Doors in BASWAphon:
 - a. Access Doors used in the BASWAphon system shall be "trimless" and have a 1" recessed door.
 - b. Access Door model number 5020, sized as required, manufactured by Acudor Products, Inc. (800.722.0501 phone).
 - c. Install per detail approved by BASWA acoustics North America, LLC.
 8. Securing to BASWAphon:
 - a. Light fixtures, ornamentation, speakers, cover plates or any other items cannot be attached to the BASWAphon system.
 - b. Ensure items are secured to proper blocking or other attachment system independent of the BASWAphon system per details approved by BASWA acoustic North America, LLC.
- B. Installation Procedures:
1. Install BASWAphon Acoustical Finish System materials in accordance with BASWA acoustic North America, LLC's installation instructions and details.
 - a. Installation shall start only after all other work in the area of the installation has been completed.
 - b. Pre-Coated Mineral Wool Panels:
 - 1) A field applied 2mm thick layer of BASWAphon adhesive is applied to the mineral wool back face of the BASWAphon 25mm thick Pre-Coated panel.
 - 2) Panel is pressed firmly onto and fully adhered to the stable substrate.
 - 3) Ensure that panels are set as level and as smooth to each other as practicable.
 - 4) Stagger joints between panels.
 - c. Trim:
 - 1) Install white vinyl trim pieces with approved adhesives.
 - d. Fill:
 - 1) Fill seams between BASWAphon Pre-Coated panels with BASWAphon Fill, and cover all white vinyl trim with BASWAphon Fill.
 - 2) Sand Fill smooth when completely dry.
 - e. Fill at Domed, Vaulted and Curved Areas:
 - 1) Apply a 2.0 – 3.0mm thick layer of BASWAphon Fill over entire surface of domed, vaulted or curved area and over all white vinyl trim.
 - 2) Trowel smooth.
 - 3) Sand smooth when completely dry prior to applying Base 407.
 - f. Base 407 (Natural White):
 - 1) Prior to applying the layer of BASWAphon Base 407, ensure product is thoroughly mixed and several pails are continuously batched together in order to provide even consistent coloring. Apply a 2.0 – 3.0mm thick layer and trowel smooth. Sand smooth when completely dry.
 - g. Base 407 (Color):

- 1) If color is specified, prior to applying the layer of BASWAphon Base 407, add one vial of pigment per pail. Ensure product is thoroughly mixed and several pails are continuously batched together in order to provide even consistent coloring. Apply a 2.0 – 3.0mm thick layer and trowel smooth. Sand smooth when completely dry.
- h. Top (Natural White):
- 1) Prior to applying the layer of BASWAphon Top, ensure product is thoroughly mixed and several pails are continuously batched together in order to provide even consistent coloring.
 - 2) Apply a 0.5 – 1.0mm thick layer of BASWAphon Top and trowel smooth to a quality level consistent with accepted samples or mock-up.
 - 3) Note that BASWAphon is a hand troweled finished product.
 - 4) Inherent in all hand troweled product applications, minor acceptable trowel marks and other imperfections in the finished surface may occur which are only visible at certain times of day or under certain critical lighting conditions.
 - 5) The finish should be critically viewed only under end-use lighting conditions.
- i. Top (Color):
- 1) If color is specified, prior to applying the layer of BASWAphon Top, add one vial of pigment per pail. Ensure product is thoroughly mixed and several pails are continuously batched together in order to provide even consistent coloring. Apply a 0.5 – 1.0mm thick layer of BASWAphon Top and trowel smooth to a quality level consistent with accepted samples or mock-up. Note that BASWAphon is a hand troweled finished product. Inherent in all hand troweled product applications, minor acceptable trowel marks and other imperfections in the finished surface may occur which are only visible at certain times of day or under certain critical lighting conditions. The finish should be critically viewed only under end-use lighting conditions.

END OF SECTION