SECTION 09820

ACOUSTICAL INSULATION AND SEALANT

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing acoustical insulation and acoustical sealant.

B. Related Sections:

1. Thermal insulation is specified in Section 07210.
2. Firestopping insulation is specified in Section 07840.
3. Non-acoustical joint sealants are specified in Section 07920.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. MSDS or manufacturer's data indicating VOC content of sealant.

1.04 QUALITY ASSURANCE

A. Fire Ratings: Comply with fire-resistance and flammability ratings specified.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Acoustical insulation shall have a minimum recycled content of 20-percent.

B. Acoustical joint sealants shall have a maximum VOC content of 250 g/L.

C. Applicable LEED Credits: Refer to Section 01352.

1. Credit MRc4 – Recycled Content.
2. Credit EQc4.1 – Adhesives and Sealants.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Protect insulation from physical damage and from becoming wet or soiled. Comply with manufacturer's recommendations for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.01 ACOUSTICAL INSULATION

A. Unfaced Glass Fiber Blanket/Batt Acoustical Insulation: Formaldehyde-free acoustical insulation produced by combining glass fibers with formaldehyde-free thermosetting resins to comply with ASTM C665, Type I.

1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 when tested in accordance with ASTM E84.

2. Approved Manufacturers: Johns Manville "Formaldehyde-Free Sound Control Batts" or approved equal.

3. Thickness: 3-inches unless otherwise indicated.

2.02 ACOUSTICAL JOINT SEALANT

A. Acoustical Sealant for Concealed Joints: Non-drying, non-hardening, non-skinning, non-staining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound; Pecora Corp. "BA-98", Tremco Inc. "Tremco Acoustical Sealant" or approved equal.

B. Acoustical Sealant for Exposed Joints: Non-oxidizing, skinnable, paintable, gunnable sealant recommended for sealing interior exposed joints to reduce transmission of airborne sound; Pecora Corp. "AC-20 FTR Acoustical and Insulation Sealant", USG "Sheetrock Acoustical Sealant" or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with manufacturer's instructions for installation conditions.

B. Do not install insulation until building is sufficiently enclosed or protected against absorption of moisture by the insulation, and do not install insulation unless supporting framing and construction is in a thoroughly dry condition.

C. Install snugly between framing members with ends snugly fitted between units and against adjacent construction.

D. Carefully cut and fit insulation around pipes, conduit, and other obstructions and penetrations.

E. Where door and window frames occur in framing, cut additional strips of insulation and hand-pack as required to fill voids in and around such frames.

F. Acoustical Sealant Application Standard: Comply with recommendations of ASTM C919 for use of joint sealant in acoustical applications as applicable to materials, applications and conditions indicated. Install sealant in accordance with manufacturer's instructions.

3.02 PROTECTION

A. Protect installed insulation from harmful exposures and from physical damage.

3.03 WASTE MANAGEMENT

A. Plan and coordinate the insulation work to minimize the generation of offcuts and waste. Reuse insulation scraps to the maximum extent feasible.

B. Separate and recycle waste materials to the maximum extent possible.

END OF SECTION

SECTION 09900

PAINTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for painting and finishing of interior and exterior exposed items and surfaces.

1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatments specified in other Sections.

2. Work includes painting exposed pipes and ducts, hangers, exposed steel and iron, and primed metal surfaces of Mechanical and Electrical equipment, except in mechanical and electrical rooms, except as otherwise indicated or specified.

3. Work includes painting hardware specified as primed (USP or 600).

4. Work includes sanding shop-primed surfaces and applying specified primer and finish coats.

5. Work includes painting insulation facing specified in Section 07210.

6. Work includes painting ceiling surfaces above open grid suspension system.

7. Work includes anti-corrosive industrial epoxy coating to lower 18-inches of all interior hollow metal door frames.

8. "Paint" means coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

B. Surfaces Not to Be Painted:

1. Pre-finished items, including but not limited to acoustic materials, casework, and finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets.

2. Concealed surfaces such as walls or ceilings in concealed areas and inaccessible areas, furred areas, pipe spaces, and duct shafts.

3. Finished metal surfaces such as anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials.

4. Decorative concrete unit masonry.

5. Board formed cast-in-place exposed concrete.

6. Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts.

C. Following categories of work are included under other Sections:

1. Shop priming ferrous metal items including structural steel, metal fabrications, hollow metal work and similar items. The work of this Section includes sanding and applying specified primer on all shop-primed surfaces exposed to view in the completed work.

2. Shop priming of fabricated components such as architectural woodwork, wood casework and shop-fabricated or factory-built mechanical and electrical equipment or accessories.

3. Piping identification is specified in Division 15.

4. Epoxy wall coatings (ERC-2) are specified in Section 09965.

5. Graffiti-resistant coatings are specified in Section 09968.

D. Do not paint over code-required labels, equipment identification, performance rating, name, or nomenclature plates.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. Certification: Furnish certification by the paint manufacturer that products supplied comply with local regulations controlling the use of volatile organic compounds (VOCs).

C. Samples: Furnish samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.

1. Provide stepped samples, defining each separate coat, including primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

D. Product Data: Specified paint systems are those of Dunn Edwards. If other paint manufacturers are proposed and accepted by the Architect, furnish product comparison charts showing that proposed paint systems are equal to the specified materials in number of coats, type of paint, and sheen.

1. Regional Materials: Furnish product data or letter stating the location (closest city, state) where product was manufactured (final processing or assembly) and, if available, the location where raw materials were harvested, extracted or recovered (mine, quarry, plantation, forest, recycling recovery center, etc.).

2. Furnish MSDS or manufacturer's data indicating VOC content of paint.

1.04 QUALITY ASSURANCE

A. Applicators Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent.

B. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use thinners approved by paint manufacturer, and use within recommended limits.

C. Coordination of Work: Review other Sections in which prime paints are to be provided to ensure compatibility of coatings system for various substrates. Upon request, furnish information or characteristics of finish materials to be used.

D. Requirements of Regulatory Agencies: Comply with applicable rules and regulations of governing agencies for air quality control.

1. Regulatory changes may affect the formulation, availability, or use of specified coatings. Confirm availability of coatings to be used prior to start of painting.

E. Field Samples: On interior wall surfaces provide full-coat finish samples, on at least 100-sq. ft. of surface, as directed, until required sheen, color and texture is obtained. For interior samples, simulate finished lighting conditions for review of in-place work. Approved samples will be used as a standard for the Project.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Opaque paint and coatings shall comply with the VOC limits of Green Seal GS-11 as follows:

1. Flat Paint: Maximum 50 g/L.

2. Non-Flat Paint: Maximum 150 g/L.

B. Anti-corrosive paint and coatings shall comply with the VOC limits of Green Seal GC-03 as follows:

1. All Paint: Maximum 250 g/L.

C. Applicable LEED Credits – Refer to Section 01352:

1. Credit EQc4.2 – Paints and Coatings.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name, batch number, color, and directions.

B. Store materials in tightly covered containers. Maintain containers in a clean condition, free of foreign materials and residue.

C. Keep storage area neat and orderly. Remove oily rags and waste daily. Ensure that workers and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.07 JOB CONDITIONS

A. Apply water-base paints when temperature of surfaces to be painted and surrounding air temperatures are between 50-deg. F. and 90-deg. F., unless otherwise permitted by paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45-deg. F. and 90-deg. F., unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in rain, fog or mist, or when relative humidity exceeds 85-percent, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

D. Provide adequate ventilation during interior painting using as close to 100-percent outside air as possible.

1.08 INDOOR AIR QUALITY

A. Applicators shall wear protective clothing and respirators when applying paints.

B. Maximize ventilation during application and drying.

C. Isolate area of application from rest of building.

1.09 EXTRA MATERIALS

A. In addition to materials for completion of the work, furnish 5-percent of each color with a minimum of 1-gallon and a maximum of 5-gallons of additional materials for each type and color of opaque paint used.

B. Furnish extra materials from same production lots or color runs used in the work. Furnish in containers factory sealed and labeled. Identify each container with Project name and type of material.

C. Deliver materials and an inventory list just prior to Acceptance of Work and store where directed by Owner.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

A. Paint and Stain: Dunn Edwards, Sherwin Williams, Benjamin Moore or approved equal.

1. Dunn Edwards products are specified as a standard of quality against which the equivalency of other products will be determined by the Architect.

B. Anti-Corrosive Industrial Epoxy Coating: Interseal as specified or approved equal.

2.02 MATERIALS

A. Material Compatibility: Provide primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application.

B. Material Quality: Provide best quality grade of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

2.03 COLORS

A. Paint colors not scheduled will be selected by the Architect. A maximum of 40-percent of selected colors may be deep tone colors.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions under which painting is to be applied. Surfaces receiving paint shall be thoroughly dry before paint is applied.

1. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect prior to applying barrier coats.

2. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning.

3. Start of painting will be construed as the applicator's acceptance of surfaces and conditions within a particular area.

3.02 PROTECTION

A. Protect work of other Sections against damage by painting and finishing work. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

2. Remove or protect hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting. Following completion of painting, reinstall removed items.

3. At completion of work of other Sections, touch-up and restore damaged or defaced painted surfaces.

3.03 SURFACE PREPARATION

A. Concrete and Masonry:

1. Prepare surfaces to be painted by removing surface contaminates.

a. Remove efflorescence with stiff bristle brush, wire brushing, wiping, sandblasting or acid washing and rinsing. Allow to dry.

b. Remove chalk, dust, dirt, asphalt, tar or excessive mortar by scraping or wire brushing.

c. Remove rust, grease or oil by solvent cleaning or sandblasting.

d. Treat concrete surfaces which are highly glazed or where traces of form release agents are present with a preparation of one-part concentrated muriatic acid, 4-parts water and one-part detergent or as recommended by parting compound manufacturer. Remove acid with water. Allow to dry.

e. Remove stains on concrete resulting from weathering or corroded metals, with a solution of 2-oz. sodium methasilicate in one-gallon water. Wet stained areas with water before application of solution. Allow to dry.

B. Plaster:

1. Clean surfaces free from grit, loose plaster and surface irregularities.

2. Determine alkalinity and moisture content by performing appropriate tests. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's literature or where pH exceeds 10.

C. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

1. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dry.

2. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets and counters.

D. Ferrous Metal: Clean ungalvanized ferrous metal surfaces that have not been shop-coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council (SSPC).

1. Blast surfaces clean as recommended by the paint system manufacturer and according to requirements of SSPC specification SSPC-SP 10.

2. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

3. Sand shop-applied prime coats to a smooth surface, ready to receive specified primer and finish coats.

E. Galvanized Metals: Clean with non-petroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

F. Gypsum Wallboard: Clean surfaces of dust, dirt, grease, oil and other foreign matter and dust clean.

G. Insulation Facing: Check for proper paint adhesion and flexibility before painting.

1. Adhesion: Apply 2 coats of the test paint to several 12-inch square pieces of the facing and allow to dry for 2-days at room temperature. When dry, apply masking tape over the painted surface and rub well to insure full contact. Check adhesion by removing the masking tape at both slow and fast speeds. If the paint film cannot be removed with the masking tape, adhesion is adequate. Adhesion is not satisfactory if the paint film is easily removed, with little or no resistant.

2. Flexibility: Apply test paint and allow to dry as specified for adhesion test. When dry, crumble the painted facing into t tight round ball. Immediately unroll to its original shape. The paint shall be flexible and not crack or flake off during the test.

3.04 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and strain material before using.

D. Use thinners approved by paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.05 APPLICATION

A. General: Apply materials in accordance with manufacturer's directions, except as otherwise specified. Use applicators and techniques best suited for substrate and type of material being applied.

1. Provide finish coats that are compatible with prime coats.

2. The number of coats required is the same regardless of the application method. Do not apply following coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where required to produce a smooth even surface.

3. Apply additional coats when undercoats, stains or other conditions show through final coat, until paint film is of uniform finish, color and appearance. Edges, corners, crevices, welds, and exposed fasteners shall receive a dry film thickness equivalent to that of flat surfaces.

4. Paint surfaces behind movable equipment and furniture.

5. Paint surfaces behind permanently-fixed equipment or furniture with prime coat before final installation of equipment.

6. Paint visible surfaces of ducts where visible through registers or grilles and surfaces above open grid suspension system with a flat, non-specular black paint.

7. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

8. Finish doors on top, bottom and side edges same as faces. Where openings into rooms have different finishes, finish door edges as directed by the Architect.

9. Omit primer on metal surfaces that have been shop-primed and touch-up painted, unless otherwise indicated.

B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation.

1. Allow sufficient time between successive coatings to permit proper drying.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's instructions. All metal surfaces in finished spaces shall be finished by spray application.

1. Brushes: Use brushes best suited for the material applied.

2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

D. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate.

E. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces. Finish to match adjoining wall or ceiling surfaces.

1. Mechanical items to be painted include, but are not limited to, piping, hangers, and supports; heat exchangers; tanks; ductwork; insulation; supports; motors and mechanical equipment; air grilles and diffusers; and accessory items.

2. Electrical items to be painted include, but are not limited to conduit and fittings, panels, and switchgear.

F. Prime Coats: Before applying finish coats, apply a prime coat. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas to assure a finish coat with no burn-through or other defects.

G. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness and other surface imperfections will not be acceptable.

H. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

I. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.06 CLEANING

A. Clean-Up: During progress of work, remove discarded paint materials, rubbish, cans and rags at end of each work day.

B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by washing and scraping; do not scratch or damage finished surfaces.

3.07 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal, Acrylic Semigloss:
First Coat: Corrobar 43-5
Second and Third Coats: Permasheen W901

B. Galvanized and Aluminum, Acrylic Semigloss:
First Coat: Versaprime 42-44
Second and Third Coats: Permasheen W901

C. Concrete, Plaster, Acrylic Flat:
First Coat: Eff-Stop W709
Second and Third Coats: Evershield W701

3.08 INTERIOR PAINT SCHEDULE

A. Wood, Low Odor/Zero VOC Acrylic Semigloss:
First Coat: Ecoshield W600
Second and Third Coats: Ecoshield W603

B. Wood, Clear Satin Lacquer Finish:
First Coat: 550 Crystaclear Sanding Sealer (LQX 150-0)
Second and Third Coats: 550 Crystaclear Satin (LQX 154-0)

C. Wood, Stain and Satin Lacquer Varnish:
First Coat: Decolac II Lacquer Stain (LQ 122)
Second Coat: 550 Crystaclear Sanding Sealer (LQX 150-0)
Third and Fourth Coats: 550 Crystaclear Satin (LQX 154-0)

D. Gypsum Board, Low Odor/Zero VOC Acrylic Lo Sheen:
First Coat: Ecoshield W600
Second Coat: Ecoshield W602

E. Gypsum Board, Low Odor/Zero VOC Acrylic Semigloss:
First Coat: Ecoshield W600
Second and Third Coats: Ecoshield W603

F. Gypsum Board, Epoxy Gloss:
First Coat: Integard 270 I 2701
Second and Third Coats: Integard 740 I 7401

G. Concrete Block, Low Odor/Zero VOC Acrylic Semigloss:
First Coat: Blocfil Smooth W305
Second and Third Coats: Ecoshield W603

H. Concrete Block, Epoxy Gloss:
First Coat: Blocfil Smooth W305
Second and Third Coats: Intergard 740 I 7401

I. Ferrous Metal, Low Odor/Zero VOC Acrylic Semigloss:
First Coat: GALV-ALUM 43-7
Second and Third Coats: Ecoshield W603

J. Galvanized Steel and Aluminum, Low Odor/Zero VOC Acrylic Semigloss:
First Coat: GALV-ALUM 43-7
Second and Third Coats: Ecoshield W603

K. Insulation Facing, Low Odor/Zero VOC Acrylic Flat:
First and Second Coats: Ecoshield W601

L. Anti-Corrosive Industrial Epoxy Coating on Lower 18-inches of Interior Hollow Metal Door Frames:
First Coat: Interseal 670

3.09 WASTE MANAGEMENT

A. Set aside extra paint for future color matches or reuse. Where paint recycling is available, collect all waste paint by type and provide for delivery to recycling or collection facility.

B. Close and seal tightly all partly used paint and finish containers and store protected in well-ventilated fire-safe area at moderate temperature.

C. Place empty containers of solvent based paints in areas designated for hazardous materials.

D. Do not dispose of paints or solvents by pouring on the ground. Paint shall be disposed of in accordance with applicable laws and ordinances.

END OF SECTION