

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Batt insulation where shown on drawings.
- B. Sound Attenuation Batt Insulation in all interior stud framed walls.

1.02 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Inspect the materials upon delivery to assure that specified products have been received. Report damaged material immediately to the delivering carrier and note such damage on the carrier's freight bill of lading.
- B. Keep insulation panels dry at all times and do not leave exposed or inadequately protected. Store indoors, if possible, on pallets or dunnage, elevated at least 4" above ground level.

1.04 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Batt Insulation:
 - 1. Owens Corning: www.owenscorning.com
 - 2. CertainTeed: www.certainteed.com.
 - 3. Board Insulation: www.building.dow.com
- B. Substitutions: See Section 01 60 00 - Product Requirements

2.02 APPLICATIONS

- A. Insulation in Exterior Metal Framed Walls and elsewhere where shown on drawings: Batt insulation with separate vapor retarder. (Basis of Design Owens Corning Unfaced Fiberglass).
- B. Sound Batt Insulation in all interior stud framed walls.(Basis of Design Owens Corning Unfaced Fiberglass).

2.03 BATT INSULATION MATERIALS

- A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
 - 4. Facing: Unfaced.
 - 5. Manufacturers:
 - a. CertainTeed Corporation: www.certainteed.com.
 - b. Johns Manville Corporation: www.jm.com.
 - c. Owens Corning Corp: www.owenscorning.com.
 - 6. Substitutions: See Section 01 60 00 - Product Requirements.

2.04 SOUND ATTENUATION BATT INSULATION

- A. Glass Fiber Sound Attenuation Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665, Type 1; Friction Fit; 3-1/2 inch thickness.

2.05 ACCESSORIES

- A. Sheet Vapor Retarder: clear polyethylene film for above grade application, 10 mil thick.
- B. Tape: Polyethylene self-adhering type, 2 inch wide.
- C. Adhesive for Board Insulation: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over member face.
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane. Tape seal in place.

3.03 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 53 00

ROOFING

PART 1 GENERAL

1.01 1.01 SECTION INCLUDES

- A. Existing Roof Warranties: The Owner has existing roof warranties on roofs of the existing buildings. The Contractor shall verify roofing manufacturers and warranty providers. The Contractor shall use a licensed applicator of existing roofing system to make any repairs to or to perform any work related to the roofing in order for the Owner's existing warranty to remain in full force and effect. Do not perform any work in a manner that would void the roofing system guarantee that is currently in effect.
- B. **Protection: Protect all roofs (Whether under warranty or not) in immediate area of work where construction activity, where foot traffic is anticipated and where shown on drawings with a minimum of 1/2 inch plywood laid over 1-1/2 inch polystyrene insulation.** On ballasted roofs, remove ballast in area where roof is to be protected. Inspect roof membrane and apply protection. After work is complete, remove protection, inspect roof and replace ballast. Coordinate all inspections with owners representative. Repair any damage caused by construction operations at no additional cost to Owner.

END OF SECTION

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SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including sheet metal drip edges, flashings, and other miscellaneous items designated on drawings.

1.02 SUBMITTALS

- A. See Division One for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with five years of documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Stainless Steel: ASTM A666, Type 304, soft temper, 0.025 inch thick (24 gage); smooth No. 4 finish.

2.02 ACCESSORIES

- A. Fasteners: Purpose designated of same metal being fastened; concealed.
- B. Underlayment: Self-adhering membrane flashing; Coordinate with Section 04 01 00, Maintenance of Masonry.
- C. Sealant: Type as specified for application in Section 07 92 00 Joint Sealants.

2.03 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate continuous cleats of same material as sheet, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Joints and seams: Use locks and seams recommended by appropriate SMACNA standard for item being joined. Set in compatible sealant as specified in Section 07 92 00. Allow joint to move.
- F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that masonry restoration work is complete and ready to receive sheet metal.

3.02 INSTALLATION

- A. Conform to drawing details.

- B. Secure flashings in place using concealed fasteners.
- C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Seal metal joints watertight.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for field inspection requirements.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

END OF SECTION

**SECTION 07 92 00
JOINT SEALANTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.

1.02 SUBMITTALS

- A. See Division One for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
 - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 8. Sample product warranty.
 - 9. Certification by manufacturer indicating that product complies with specification requirements.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.03 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

1.04 MOCK-UP

- A. Provide mock-up of sealant joints under provisions of Section 01 40 00, Quality Requirements. Coordinate with Section 04 01 00, Maintenance of Masonry.
- B. For silicone sealant joints, meet on-site with manufacturer's designated representative prior to and during installation of mock-up. Install as directed by manufacturer's designated representative. Coordinate further on-site meetings with manufacturer's designated representative as required for proper and complete installation of product, and as required to fulfill manufacturer's warranty requirements.
- C. Construct mock-up with specified sealant types and with other components noted.
- D. Locate where directed.
- E. Mock-up may remain as part of the Work.

1.05 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Silicone Sealants: Correct defective work within a twenty year period after Date of Substantial Completion.
- C. Butyl Sealants: Correct defective work within a two year period after Date of Substantial Completion.
- D. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. BASF Construction Chemicals-Building Systems: www.buildingsystems.basf.com.
 - 2. Dow Corning Corporation: www.dowcorning.com/construction/#sle.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. Sika Corporation: www.usa-sika.com/#sle.
 - 5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 - 6. ADFAST Corporation; www.adfastcorp.com/en.
 - 7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 NONSAG JOINT SEALANTS

- A. Type E-1 - General Purpose Exterior Sealant: Silicone Sealant: ASTM C920, Grade NS, Uses NT, M, G, A, O; single or multi-component, non-sagging, neutral-curing.
 - 1. Non-Staining to Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 - 2. Color: To be selected by Architect from manufacturer's standard range.
 - 3. Applications: Use for:
 - a. Control joints and other sealant joints in masonry and stone work.
 - b. Sealant joints at exterior perimeters of doors, windows, louvers, pipes, and other penetrations of exterior walls.
 - c. Exterior building sealant joints for which no other sealant is specified.
 - 4. Manufacturers:
 - a. ADFAST Corporation; ADSEAL DWS 4580 Series: www.adfastcorp.com/en.
 - b. Dow Corning Corporation; 790 Silicone Building Sealant: www.dowcorning.com/construction.
 - c. Tremco Commercial Sealants & Waterproofing; Spectrem 2: www.tremcosealants.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Type E-2 - Butyl Sealant: ASTM C920, Grade NS, Class 12-1/2, Uses NT, M, G, A, O; single component, solvent release, non-skinning, non-sagging.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Applications: Use for:
 - a. Concealed sealant bead in sheet metal work.
- C. Type E-3 - Concrete Paving Joint, Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Class 25, Uses T, I, M, A, O; multi- component, chemical curing, non staining, non bleeding, self-leveling type.
 - 1. Color: Color as selected.
 - 2. Applications: Use for:
 - a. Joints in sidewalks and vehicular paving.
- D. Type I-1 - General Purpose Interior Sealant, Acrylic Emulsion Latex: ASTM C834, Type OP, Grade NF, single component, non-staining, non-bleeding, non-sagging, capable of being painted.

1. Color: To be selected by Architect from manufacturer's standard range.
 2. Applications: Use for:
 - a. Interior wall and ceiling control joints.
 - b. Interior joints between door and window frames and wall surfaces.
 - c. Other interior joints for which no other type of sealant is indicated.
- E. Type I-2 - Bathroom/Tile Sealant: Silicone; ASTM C920, Uses I, M and A; single component, mildew resistant.
1. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bathroom countertops and wall surfaces.
- F. Type G-1 - Silicone Sealant: ASTM C920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.
1. Color: To be selected by Architect from manufacturer's standard range.
 2. Movement Capability: Plus and minus 25 percent.
 3. Service Temperature Range: -65 to 180 degrees F.
 4. Shore A Hardness Range: 15 to 35.
 5. Applications: Use for:
 - a. All glazing operations.

2.03 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
 3. Open Cell: 40 to 50 percent larger in diameter than joint width.
 4. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.
- F. Fine, smooth, clean, silica sand for sanded sealant joints.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints and substrates are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable. Protect all elements surrounding the work of this section from damage or disfigurement.

- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.
- I. Sand all sealant joints in brick and stone work using fine, smooth, clean silica sand "thrown" or "dusted" into sealant after it has been tooled and is still "tacky".

3.04 TESTING AND INSPECTION

- A. The Owner may hire an independent testing agency to cut out and remove installed sealant joints in six (6) locations per each side of building, each approximately one (1) linear foot. Locations will be randomly selected by the testing agency or Architect. The work will be checked by the testing agency for compliance with the contract documents in accordance with ASTM C1193. If defective work is found in any of the test locations, additional tests may be required of the Contractor at no additional cost to the Owner. If any test section removed reveals non-complying work, remove all adjacent sealant work to the point where work is found to be in compliance. Re-seal in accordance with the contract documents. If all tests fail to meet the contract document requirements, the Contractor shall be required to re-seal the entire section of the building at no additional cost to the Owner. Provide lifts or other acceptable means of access to the work.

3.05 CLEANING

- A. Clean adjacent soiled surfaces.

3.06 PROTECTION

- A. Protect sealants until cured.

3.07 POST-SUBSTANTIAL COMPLETION INSPECTION

- A. Post-Substantial Completion Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at the low temperature in the thermal cycle. Report failures immediately and repair.

3.07 SCHEDULE

- A. See Drawings for designated sealant joints.
- B. Exterior Joints for Which No Other Sealant Type is Indicated: Type E-1.
- C. Control and Expansion Joints in Paving: Type E-3.
- D. Exterior Wall Expansion Joints: Type E-1.
- E. Joints Between Concrete Panels and Between Panels and Adjacent Work: Type E-1.

- F. Control, Expansion, and Soft Joints in Masonry, and Between Masonry and Adjacent Work: Type E-1.
- G. Lap Joints in Exterior Sheet Metal Work: Type E-2.
- H. Joints Between Exterior Metal Frames and Adjacent Work: Type E-1.
- I. Under Exterior Door Thresholds: Type E-1.
- J. Interior Joints for Which No Other Sealant is Indicated: Type I-1;.
- K. Control and Expansion Joints in Interior Concrete Slabs and Floors: Type E-3.
- L. Joints Between Plumbing Fixtures and Walls and Floors, and Between Countertops and Walls: Type I-2.
- M. All Glazing Joints: Type G-1.

END OF SECTION

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