

SECTION 07200

INSULATION

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 06100 - Carpentry:
- B. Section 07500 - Membrane Roofing:
- C. Division 15 - Mechanical Insulation:

1.02 QUALITY ASSURANCE

- A. Acceptable manufacturers: Certainteed, Owens-Corning, Schuller; or approved equal.

1.03 SUBMITTALS

- A. Shop drawings: Submit manufacturer's literature to the Architect for approval. Clearly mark type and thickness of insulation to be used.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and storage: Deliver materials to the job site and store in a safe dry place with all labels intact and legible at time of installation. Wet or moist insulation will be rejected and shall be removed from the job.
- B. Handling: Use all means necessary to protect building insulation materials before, during, and after installation and to protect the installed work and materials of all other trades.

1.05 JOB CONDITIONS

- A. Environmental requirements: Do not install insulation until the construction has progressed to the point that inclement weather will not damage or wet the insulation material.

PART 2 - PRODUCTS

2.01 THERMAL INSULATION

- A. Mineral or glass wool in roll form with foil facing one side.
- B. Use facing material with a smoke developed rating of less than 450 and a flame spread rating less than 25 when tested in accordance with UBC

Standard # 42-1 if the facing will not be in contact with ceiling, wall or floor surface.

- C. Minimum R values for insulation only, installed.
 - 1. Underside of roof throughout the building(s): R-19.
 - 2. Exterior walls throughout the building(s): R-4.
- D. Insulation thickness shall be such that it will fit in the available space without compressing.

2.02 SOUND INSULATION

- A. Single stud construction: 3-1/2" thick mineral or glass wool in roll form.

2.03 OTHER MATERIALS

- A. Provide and install all other materials such as fasteners and retainers not specifically described but required for a complete and proper installation of building insulation.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. Verify that building insulation may be installed in accordance with the original design and the manufacturer's recommendations.
- C. Upon completion of the installation, visually inspect each insulated area and verify that all insulation is complete and properly installed.

3.02 APPLICATION

- A. Install insulation between framing members with insulation fitting snugly between framing members.
- B. At wood studs or joists, securely fasten flanges of insulation to the sides of studs, continuously tight against framing members, using staples or nails spaced 6" on center.
- C. At metal stud partitions, install string wire spaced 24 inches on center, across, or threaded through, the studs to retain the insulation in place.
- D. At areas of suspended ceilings, take care to lap all side and end

joints to provide for complete coverage by insulation material.

3.03 WORKMANSHIP

- A. Exercise extreme care where an integral vapor barrier is specified to maintain the vapor barrier continuous over entire wall, ceiling, or floor surfaces. Patch all tears in vapor barrier.
- B. Fully insulate all small areas between closely spaced framing members.
- C. Do all end matching neatly with all ends fitting snugly or overlapped.
- D. Cut and fit insulation material around pipes, conduits, and outlet boxes, as necessary to maintain the integrity of the insulation.
- E. Where reflective type insulation is specified, maintain proper, unobstructed air space between insulation and wall materials.
- F. Where pipes are located in stud spaces to receive insulation, place insulation between exterior wall and the pipe, compressing insulation if necessary.

END OF SECTION

SECTION 07500

MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 05805 - Expansion Joint Assemblies
- B. Section 07200 - Insulation:
- C. Section 07600 - Flashing and Sheetmetal:

1.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers: Schuller; Flintkote; or approved equal.
- B. Applicator Qualifications: Applicator must have applied roofing system on two or more projects which have been completed for at least five years.
- C. Requirements of Regulatory Agencies:
 - 1. Comply with requirements of the Chapter 15, UBC and Underwriter's Laboratory for Class C rating.

1.03 SUBMITTALS

- A. Shop Drawings: Submit prior to fabrication, delivery or installation:
 - 1. Latest edition of acceptable manufacturer's roofing specification selected.
 - 2. List of materials proposed for use.
- B. Samples: Submit samples of mineral surfaced cap sheet and gravel or slag to the Architect for review and color selection.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver all materials free from damage in original packages bearing manufacturer's label.
- B. Storage: Store all roofing materials on a clean level surface in a dry place protected from sun and weather such that the temperature stays between 40 degrees F. and 90 degrees F. Stand roll goods on end in such a way to prevent damage to the ends. Store all materials containing solvents in a dry cool storage with proper fire and safety precautions. Cover with vapor permeable tarpaulin, not polyethylene.
- C. Equipment:
 - 1. Equip kettles for heating bitumen with thermostats as well as thermometers.

2. In addition, check with portable thermometer at intervals to be sure that correct kettle temperatures are maintained.

1.05 JOB CONDITIONS

A. Environmental Requirements:

1. Locate kettle so as to minimize impact on workers and neighbors. This may mean that the kettle may not be in the location nearest the roof work. Relocate kettle as directed to minimize impact as wind direction changes.
2. Do not apply bituminous roofing materials when air temperature is below 40 degrees F. or is expected to go below 40 degrees F. within 24 hours after application.
3. Do not apply bituminous roofing materials when it is raining or expected to rain within 24 hours after application.

B. Protection: Use all means necessary to protect membrane roofing materials and insulation before, during, and after installation and to protect the installed work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.06 GUARANTEE

A. Furnish an approved written unconditional guarantee to the Architect that the entire installation is watertight and that no buckling or other roofing defects will occur for two (2) years from the date of final acceptance of the building.

B. Furnish at no cost to the Owner a manufacturer's "No Dollar Limit" guarantee covering labor and materials of built-up roofings and flashings for a period of 20 years.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primer: As per manufacturer's recommendation

B. Base sheet: GlasBase Plus mechanically attached.

C. Insulation: 1-1/2" thick Expanded Perlite or Fesco Board or approved equal.

D. Asphalt for hot application: ASTM D 312-71, Type II for flat or Type III for steep. Asphalt must be specifically approved by the manufacturer of the roofing products for incorporation into their guaranteed roofing. Install at a rate of 23 lbs. Per square.

- E. Asphalt saturated woven-glass fabric: ASTM D 1668-73. Glas Ply IV by Manville or approved equal.
- F. Granulated Cap Sheet: ASTM D 371-58 (1970). GlasKap by Manville or approved equal.
- G. Embedded aggregates:
 - 1. Gravel: ASTM D 1863-77.
 - 2. Slag: ASTM D 1863-77.
- H. Roof Walkways: APOC "Dek-top", x 3'x4'x1/2"; "Carey-Tred", 3'x6'x1/2" or equal.

2.02 MANUFACTURER

- A. Provide complete and install JohnsManville 4GIC built-up roofing. Manufacturers' specifications listed above establish standards of quality required, but are not restrictive.
- B. Similar and equal roofing by other manufacturers having at least the same number of layers of felt and the same quantity and quality of asphalt may be substituted, subject to Architect's review.

2.03 NAILS:

- A. Nails or other fasteners are to be driven through tin caps unless the nail or fastener has an integral flat cap no less than 1" across and as recommended by the manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION OF SURFACES

- A. Verify that work of other trades which penetrate roof deck or requires men and equipment to traverse roof deck has been completed.
- B. Examine surfaces for inadequate anchorage, foreign materials, moisture, and unevenness which would prevent the execution and quality of application of built-up roofing system as specified.
- C. Do not proceed with application of built-up roofing system until defects are corrected.

3.02 PREPARATION

- A. Cover cracks, exceeding allowable tolerance, and knot holes with sheet metal nailed securely in place.
- B. Fill voids exceeding allowable tolerance with plastic cement and strike smooth.

- C. Notify Architect and secure approval of roof surface three (3) days prior to applying roof covering.
- D. Beginning work constitutes the Contractor's acceptance of the roofing surface.

3.03 INSTALLATION

- A. Details of installation are to conform to manufacturer's published recommendations.
- B. Provide shop drawing details of connections into existing roof systems and provide guarantee to extend to seam work provided.

3.04 PROTECTION AND CLEAN UP

- A. Protect exposed surfaces of adjacent materials from damage during installation.
- B. Before stopping work for the day, protect insulation with one or more plies of roofing and a glaze coat of bitumen. Protect unfinished roofing with a glaze coat.
- C. Sprinkling surfaces with water before applying glaze coat not permitted.

3.05 TESTS

- A. Make one 4" x 36" test cut for every three (3) squares of roof area as directed by the Architect. Test cuts will not be required unless the Architect has reason to believe that the installation is not in compliance.
- B. Make cuts after all felts are laid and before finish surface is applied.
- C. Weights shall be within 15% of the manufacturer's recommended finish weights, with bitumen well distributed between felts and all felts tightly bonded. Any deviations from this requirement shall be corrected at the Contractor's expense.
- D. Repair and replace cut areas with layers of felt and bitumen to match roof system.
- E. Cover repaired area with three (3) layers of felt:
 - 1. Solid mop each layer into place in hot bitumen.
 - 2. Overlap test cut 3" on all sides with first layer.
 - 3. Lap each succeeding layer 3" on all sides over layer below.

END OF SECTION

SECTION 07600

FLASHING & SHEET METAL

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 07500 - Membrane Roofing:
- B. Section 07900 - Sealants:
- C. Section 09221 - Lathing and plastering:
- D. Section 09900 - Painting:
- E. Division 15 - Mechanical
- F. Division 16 - Electrical

1.02 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies: In addition to complying with codes and regulations, comply with all pertinent recommendations contained in "Architectural Sheet Metal Manual," current edition, of the Sheet Metal and Air Contractors National Association, Inc., "SMACNA."

1.03 SUBMITTALS

- A. Submit shop drawings showing typical construction to the Architect for review.

1.04 JOB CONDITIONS

- A. Protection: Use all means necessary to protect flashing and sheet metal materials before, during, and after installation and to protect the installed work and materials of all other trades.
- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect.

1.05 GUARANTEES

- A. Furnish an approved written unconditional guarantee to the Architect that the entire installation is watertight and that no defects will occur for two years from the date of final acceptance of the building.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Best commercial quality, thickness not less than specified below.
- B. Use heavier gauges where called for in item specification or noted on drawings.

2.02 ALUMINUM

- A. Alloys best suited to conditions of installation, mill finish. Sheets 0.025 inch thick, extrusions as hereinafter specified or noted on drawings.

2.03 GALVANIZED STEEL

- A. 24-gauge copper-bearing base metal, commercial weight zinc coating, ASTM A 526-71 with G90-ASTM 525-76 coating.

2.04 NAILS

- A. Barbed type, heat-treated aluminum for aluminum work, copper for copper work, hot-dip galvanized steel for galvanized steel.

2.05 WATERPROOF PAPER FLASHING

- A. Fed. Spec. UU-B-790, Type I, Grade B. Six inches wide. Reinforced kraft paper face.

2.06 STAINLESS STEEL

- A. Type 302, 28-gauge, mill finish.

2.07 JOINT MATERIALS

- A. Flux materials: Equal parts of denatured alcohol and diluted muriatic acid, of J.S. Harris and Company's "Stay Clean", or L.B. Allen and Company's "G.I. Special Flux".
- B. Solder: 50% tin and 50% lead.
- C. Galvanizing compound: Cold galvanizing compound to meet or exceed Fed Spec DOD-P-21035A.

2.08 WIRE CLOTH

- A. For use with ferrous metals or wood surrounds: Steel wire galvanized after weaving of the following mesh:
 - 1. Insect screening: 18 x 14 or 16 x 16 mesh.
 - 2. Bird screening: 1/2" mesh.

3. Vent screening: 1/4" mesh.

2.09 MISCELLANEOUS FASTENINGS

- A. Size: As required to adequately support and eliminate warping of the metal being fastened.
- B. Material: Same metal and finish as the metal being fastened.

2.10 PLASTIC CEMENT

- A. Federal Specification SS-C-153, Type I. Henry's 208 or approved equal.

2.11 SEALANT

- A. Specified in Section 07900 of these specifications.

2.12 OTHER MATERIALS

- A. Provide all other materials, not specifically described but required for a complete and proper installation of flashing and sheet metal.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that substrates are smooth and clean to extent needed for sheet metal work.
- B. Verify that reglets, nails, cants, and blocking, to receive sheet metal are installed and free of concrete and soil.
- C. Do not start sheet metal work until conditions are satisfactory.

3.02 PREPARATION

- A. Before installing sheet metal verify shapes and dimensions of surface to be covered.

3.03 INSTALLATION

- A. General:
 - 1. Install work watertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction and shrinkage of wood construction.
 - 2. Hem exposed edges.
- B. Weatherproofing:
 - 1. Finish watertight and weathertight where so required.
 - 2. Make all lock seam work flat and true to line, and sweated full of

solder.

3. Make all lock seams and lap seams, when soldered, at least 1/2 inch wide.
4. Where lap seams are not soldered, lap according to pitch but in no case less than three inches.
5. Make all seams flat and lap in direction of flow.

C. Joints:

1. Join parts with rivets or sheet metal screws where necessary for strength or stiffness.
2. Lap a minimum of 4".
3. Provide suitable watertight expansion joints for all runs of more than 60 feet except where closer spacing is indicated on the Drawings or required for proper installation.

D. Nailing:

1. Whenever possible, secure metal by means of clips or cleats without nailing through the metal, especially at long runs where expansion joints will be required. Where concealed provide 1/2" long slots for expansion.
2. In general, space all nails, rivets, and screws not more than eight inches apart and, where exposed to the weather, use lead washers, or stainless steel screws with protected neoprene washers.
3. For nailing into wood, use barbed roofing nails 1-1/4 inches long by eleven gauge.
4. For nailing into concrete, use drilled plugholes and plugs, or power driven fasteners only as approved by the architect.

3.04 EMBEDMENT

- A. Embed all metal in connection with roofs in a solid bed of plastic cement.

3.05 SOLDERING

- A. Thoroughly clean and tin all joint materials prior to soldering.
- B. Perform all soldering slowly with a well heated copper in order to heat the seams thoroughly and to completely fill them with solder.
- C. Perform all soldering with a heavy soldering copper of blunt design, properly tinned for use.
- D. Make all exposed soldering on finished surfaces neat, full flowing and smooth.

3.06 CLEANING

- A. As work progresses, neutralize excess flux with 5 to 10 percent washing soda solution, and thoroughly rinse.

- B. Leave work clean and free of stains, scrap, and debris.

3.07 GALVANIC ISOLATION

- A. Between dissimilar metals install a strip of 40 mil thick adhesive tape conforming to Fed Spec L-T-1512A across the full width of the metals being isolated.
- B. Between dissimilar metals install a strip of adhesive backed

3.08 FLASHINGS

- A. Furnish and install roof base and cap flashing, vent collars, pitch pockets, gravel stops, splash pans, and leaders formed to details of the drawings. Standard length sheets of galvanized steel.
- B. Furnish and install all flashing, reglets, valleys, crickets, and counter flashings as required to obtain a thoroughly water-proof job.
- C. Roof jacks on tile roofs shall be metal at the level of the membrane and lead at the level of the tile. Shape the lead to fit the tile and shingle it into the tile.
- D. Provide for expansion and contraction. Lap all non-soldered seams 3" minimum and set in plastic cement.
- E. Back-prime underside or unexposed side of all flashing prior to installation, except copper and surfaces in contact with the roofing materials, with an approved rust inhibitive paint.
- F. Shop form all corners, extending 1-foot minimum around.

3.09 COPINGS, TYPE 1

- A. Fabricate in 10-ft. sections of 24 gauge galvanized steel.
- B. Cover wood plate with 30-pound roofing felt before installing coping.
- C. Lock exposed edges over continuous cleats of same material, securely nailed to plate.
- D. Join sheets flush using a 12 inch long back up coping at each joint to allow for expansion and contraction.
- E. Seal seams with sealant.
- F. Miter and seam corners, and seal.

3.10 CRICKETS

- A. Galvanized steel with flat locked and full soldered joints.

- B. Provide behind chimneys and other projections through roof where indicated, or required to divert water to drains.

3.11 DOWNSPOUTS

- A. Nominal size indicated, stock plain round type galvanized steel, end joints telescoped 1-1/2 inches in direction of flow and made watertight.
- B. Install clear of wall on hangers of same material but two gauges heavier spaced not greater than length of downspout sections with at least 2 per downspout.

3.12 DOWNSPOUT HEADS

- A. Fabricate in accordance with SMACNA standards or as detailed on the drawings of 24 gauge galvanized steel.

3.13 FASCIAS AND GRAVEL STOPS

- A. Form to profile indicated in 10-foot lengths of 24 gauge galvanized steel.
- B. Provide expansion joints between sections, as detailed.
- C. Extend back flange 4 inches into roofing; nails as recommended by roofing manufacturer.

3.14 GUTTERS

- A. Fabricate to profile matching existing of galvanized steel.
- B. Hangers, reinforcement and bracing of compatible metal, assembled as detailed or to SMACNA standards.
- C. Provide loose-locked expansion joints midway between outlets, 1/2 inch expansion space where gutters abut walls.
- D. Secure to adjacent construction with screws of proper type.

3.15 STRAINERS

- A. Removable basket type, same material as gutter, 1/4 inch mesh, No. 14 wire.
- B. Install in each drain outlet in gutters.

END OF SECTION

SECTION 07800

SKYLIGHTS

PART 1 - GENERAL

1.01 RELATED SECTIONS

- A. Section 06100 - Carpentry:
- B. Section 07500 - Membrane Roofing:

1.02 QUALITY ASSURANCE

- A. Acceptable manufacturers: Fisher Skylights, Bristolite Skylights; or approved equal.
- B. AAMA standards shall be adhered to throughout construction.

1.03 SUBMITTALS

- A. Shop drawings: Submit scaled drawings of actual application. Generic details are not sufficient. Include structural calculations completed by a California Registered Professional Engineer.
- B. Submit manufacturer's literature to the Architect for approval. Include test data and sealant compatibility statements. Clearly mark framing and glazing styles to be used.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and storage: Deliver materials to the job site and store in a safe dry place with all labels intact and legible at time of installation. Wet or moist insulation will be rejected and shall be removed from the job.
- B. Handling: Use all means necessary to protect building insulation materials before, during, and after installation and to protect the installed work and materials of all other trades.

1.05 JOB CONDITIONS

- A. Environmental requirements: Do not install insulation until the construction has progressed to the point that inclement weather will not damage or wet the insulation material.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Aluminum supporting members shall be constructed of aluminum alloy 6063-T5 or 6063-T6.
- B. Formed sheet aluminum shall conform to 5052-H32.
- C. Glazing shall be insulated solar bronze laminated safety glass.
- D. Glazing gaskets shall be silicone, santoprene, or neoprene with 50 durometer shore A hardness. Setting blocks shall have 80 durometer hardness.
- E. Fasteners used in construction shall be stainless steel. Fasteners to secure unit to curb shall be cadmium plated steel.

2.02 FABRICATION

- A. In so far as is practical, skylights shall be completely fabricated within the manufacturer's shop. Where impractical to ship fully assembled, unit shall be shop assembled and then dismantled for shipping.
- B. Rafters shall be designed to provide snap-in installation of glazing. And caps shall be fastened at a minimum of 12" on center.
- C. Weep holes shall be provided to drain condensation to the outside.
- D. Provide fastener strips to conceal screws in rafters and purlins.

2.03 OTHER MATERIALS

- A. Provide and install all other materials such as fasteners and retainers not specifically described but required for a complete and proper installation of skylights.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. Verify dimensions prior to fabrication.

- C. The installer shall verify that there is no deviation in substrate materials. If any deviations are found, installer shall bring them to the attention of the Architect for correction. Start of work indicates acceptance of substrate and existing conditions.
- D. Upon completion of the installation, visually inspect each insulated area and verify that all insulation is complete and properly installed.

3.02 APPLICATION

- A. Install skylights with no contact with any dissimilar materials.
- B. At curb, securely fasten flanges continuously against framing members, at 6" on center.

3.03 COORDINATION

- A. Coordinate with glazier on installation of all glazing materials. See Section 08850 for requirements.

END OF SECTION

SECTION 07900

SEALANTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included :
1. Sealant around frames at all openings.
 2. Sealant at joints of dissimilar materials.
 3. Waterproofing of exterior shell.
 4. Miscellaneous sealants as noted.
- B. The purpose of Sealants in this work is to provide a positive barrier against penetration of air and moisture at joints between items where sealants are essential to continued integrity of the barrier.
1. Such sealants will normally be applied under the work of various Sections of these Specifications but applied in strict accordance with the provisions of this Section.
 2. Design and construction of the joint to be compatible with the sealants proposed for use.
- C. Related Work Specified Elsewhere: Individual requirements for sealants are described in various other sections of these specifications.

1.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers :
1. 3M Fire Protection Products
 2. Dow Corning Corp.
 3. Flamadur Corporation of America, 800-753-FLAM.
 4. General Electric, Silicon Products Dept., 800-255-8886.
 5. Hilti Construction Chemicals Inc., 800-WE EXCEL.
 6. Pecora Corporation.
 7. Products Research and Chemical Corp. (PRC)
 8. The Tremco Manufacturing Co.
 9. Sika Corporation.
- B. Applicator Qualifications : Install sealants with workmen thoroughly skilled and specially trained in the techniques of caulking, and who are completely familiar with the published recommendations of the manufacturer.
- C. Reference standards:
1. ASTM C920-86 for Elastomeric Sealants.
 2. ASTM C834-81 for Latex Sealants.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original, tightly sealed containers or unopened

packages with manufacturer's name, labels, product identification, and lot numbers where appropriate.

- B. Store materials out of weather in original containers or unopened packages as recommended by manufacturer.

1.05 SUBMITTALS

- A. Submit product literature and manufacturer's installation instructions for each sealant used.
 - 1. Identify each sealant in the literature and which type of sealant it is being submitted for.
 - 2. Identify applicable ASTM Standard for each sealant.
 - 3. Identify the specific UL design that fire rated sealants will comply with. Each different condition in the building shall be identified and a specific UL design approval identified for it so that there is absolute certainty as to which detail covers each location.
 - 4. Identify requirements for primers for each type of sealant submitted.
- B. Submit color choices where selection is required.

1.06 WARRANTIES

- A. Provide material warranty.
- B. Guarantee workmanship against leakage or signs of failure for 2 years.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sealant Type 1: For general purpose exterior use where little movement is expected such as door and window frames. Joint size 1/4 inch square to 3/4 inch wide x recommended depth.
 - 1. Comply with ASTM C920, Type S, Grade NS, Class 12.5, UseNT.
 - 2. Tremco "Mono", one part Acrylic Terpolymer Sealant.
 - 3. PRC Permapol RC-1
 - 4. or approved equal.
- B. Sealant Type 2: For interior use where little movement is expected such as door and window frames. Joint size 1/4 inch square to 3/4 inch wide x recommended depth.
 - 1. Acrylic Latex, ASTM C834.
 - 2. Tremco Acrylic Latex 834.
 - 3. Pecora AC-20.
 - 4. or approved equal.
- C. Sealant Type 3: Interior or exterior, for sealing joints 1/8 to 1/4 inch wide. Verify and coordinate paintability requirements with all

- trades.
1. Silicone sealant, ASTM C920, Type S, Grade NS, Class 25, UseNT.
 2. Tremco Spectrum 1 or 2.
 3. Pecora 864 Low Modulus Architectural Silicone Sealant
 4. or approved equal.
- D. Sealant Type 4: For exterior use at expansion joints in masonry, stucco or precast concrete where substantial movement is expected. For joints to 1 inch wide.
1. Silicone sealant, ASTM C920, Type S, Grade NS, Class 25, UseNT.
Must accept $\pm 50\%$ movement.
 2. Tremco Spectrem 1.
 3. Pecora 864 Low Modulus Architectural Silicone Sealant
 4. or approved equal.
- E. Sealant Type 5: For acoustical sealant.
1. Non-hardening, non-drying, non-bleeding. Manufactured specifically for acoustical applications.
 2. Tremco Acoustical Sealant.
 3. Pecora Acoustical Sealant BA-98.
 4. or approved equal.
- F. Sealant Type 6: For exterior concrete slabs on grade.
1. Two part polyurethane sealant, ASTM C920, Type M, Grade P, Class 25, Use T.
 2. Tremco THC- 900.
 3. Pecora NR-200 Urexpan.
 4. or approved equal.
- G. Sealant Type 7: For penetrations at fire rated/ draft stops walls or floors.
1. UL listed for the rating of the wall or floor into which it is being installed.
 2. 3M CP25 or approved system.
 3. Flammadur A107 or E473 System.
 4. Hilti CS 240.
 5. or approved equal.
- H. Sealant Type 8: For concealed metal building and sheet metal joints.
1. Non-skinning and non-drying.
 2. Tremco JS 773 or JS 779.
 3. Pecora BC-158.
 4. or approved equal.

2.02 COLORS

- A. Sealants that are concealed in the final assembly may be any color.
- B. Sealants exposed to view in the final assembly are to match the color of the adjacent surfaces. If the adjacent surfaces are not the same

color as each other than the Architect shall be asked to select the sealant color. Sealant installed without such color selection is subject to removal and replacement at no additional cost to the owner.

2.03 JOINT BACKING

- A. Non-oily, non-staining backup filler such as polyethylene foam rod, expanded polyurethane, neoprene, or other filler completely compatible with the sealant material.

2.04 PRIMERS

- A. Use primers as recommended by manufacturer of the sealant for the surfaces onto which the sealant is being installed.

2.05 EQUIPMENT

- A. Use only such equipment as is specifically recommended by the manufacturer of the sealant material being installed.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Prior to all work in this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- B. Verify that sealant may be installed in accordance with the manufacturer's recommendations and UL listing.

3.02 PREPARATION

- A. Cleaning: Clean joint surfaces, using joint cleaner as necessary, free of dust, dirt, oil, grease, rust, lacquers, laitance, release agents, moisture, or other matter which might adversely affect adhesion of sealant.
- B. Prime joint as required by manufacturer's instructions.
- C. Install masking tape at each side of the joint if adjacent surfaces are not readily cleaned or if required to produce a neat installation.

3.03 APPLICATION

- A. Install backing material in joints using blunt instrument to avoid puncturing. Do not twist rod while installing. Install backing so that joint depth is 50% of joint width, but a minimum of 1/4 inch deep if the joint width exceeds 1/4 inch. Follow manufacturer's instructions if they differ from this after obtaining specific approval of the Architect.

- B. Apply sealant in joints using pressure gun with nozzle cut to fit joint width. Make sure sealant is deposited in uniform, continuous beads without gaps or air pockets.
- C. Tool joints to required configuration within 10 minutes of sealant installation. If masking materials are used, remove immediately after tooling.

3.04 APPLICATION OF FIRE RATED SYSTEMS

- A. Install in exact conformance to manufacturer's published instructions and listing agency approval.

3.05 CLEANING

- A. Remove excess materials adjacent to joints by mechanical means or with xylol (xylene) or mineral spirits as work progresses to eliminate evidence of spillage or damage to adjacent surfaces.
- B. Leave finished work in neat, clean condition with no evidence of spillovers onto adjacent surfaces.

END OF SECTION