

**DIVISION 7 THERMAL & MOISTURE PROTECTION**

<u>Section No.</u>	<u>Title</u>	<u>Comments</u>
07 13 00	SHEET WATERPROOFING	<ol style="list-style-type: none"> <li>1. Carlisle CCW MIRADRI 860/861 or approved equal.               <ol style="list-style-type: none"> <li>a. Application for use: Below grade concrete walls.</li> <li>b. Self-adhering waterproofing sheet membrane of rubberized asphalt. 60-mils, dark gray or black.</li> <li>c. Use with high-tack water-based contact adhesive applied by roller; Carlisle CCW-702 WB or approved equal.</li> <li>d. Liquid Mastic: Carlisle CCW LM-800XL, or approved equal.</li> <li>e. Drainage Composites: Carlisle CCW MIRADRIAN 6000, or approved equal.</li> <li>f. Use manufacturer's recommended termination bar.</li> <li>g. Above items shall all be installed by a manufacturer's authorized applicator.</li> <li>h. Other approved manufacturer's: W.R. Meadows, Grace Construction Products.</li> <li>i. Pre-installation conference required before product installation.</li> </ol> </li> <li>2. Fortifiber Moistop Ultra 15 and Stego Industries Stego Wrap 15-MIL.               <ol style="list-style-type: none"> <li>a. Application for use: Slab-on-grade.</li> <li>b. Pre-installation conference required before product installation.</li> </ol> </li> </ol>
07 19 00	WATER REPELLENTS	<ol style="list-style-type: none"> <li>1. Silane / Siloxane penetrating water repellent for exposed finished exterior concrete walls.               <ol style="list-style-type: none"> <li>a. Fabrikem Fabrishield 653 preferred.</li> <li>b. Other manufacturers approved: BASF, Evonic, Euclid Chemical Co., Vexcon Chemicals, Tnemic Co., and Prosoco.</li> <li>c. Use low-VOC product.</li> <li>d. Non-yellowing, non-glossy, colorless water-vapor permeable finish that is invisible once dried.</li> </ol> </li> </ol>
07 21 00	THERMAL INSULATION	<ol style="list-style-type: none"> <li>1. Spray foam insulation product with closed-cell polyurethane foam. ATSM C 1029.               <ol style="list-style-type: none"> <li>a. Preferred for cavity walls if the budget allows</li> <li>b. Use to fill voids in exterior metal door frames</li> </ol> </li> </ol>

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		<ol style="list-style-type: none"> <li>2. Glass and Mineral fiber blanket, are second choice in preference for cavity walls                             <ol style="list-style-type: none"> <li>a. Certain Teed, Knauf, Johns Manville, Owens-Corning, and Guardian.</li> <li>b. Friction fit.</li> <li>c. R-value as required</li> <li>d. Meets ASTM E 136 for combustibility.</li> <li>e. Fire Hazard Classification: ASTM E 84.</li> <li>f. Foil faced vapor retarder on interior side of insulated wall or ceiling with transmission rating of 1 perm or less. Install with galvanized or electroplated nails or staples at wood framing. Seal seams with 2” wide mesh reinforced aluminum tape. See 07 90 05 for vapor retarder sealant.</li> <li>g. No formaldehyde content.</li> <li>h. Flame Spread Index: 10/10</li> <li>i. Smoke Development Index: 10/10</li> <li>j. Non-combustible, except for facing</li> <li>k. Minimum K-value: 0.27</li> <li>l. Minimum density: 1.0 pound</li> <li>m. Support wire to be steel, electroplated or galvanized</li> </ol> </li> <li>3. Extruded Polystyrene Board Insulation at foundation walls.                             <ol style="list-style-type: none"> <li>a. Insulfoam R-Tech IV and Owens Corning Fomular 250.</li> <li>b. Minimum compressive strength of 25 PSI per ASTM D1621 test method.</li> </ol> </li> <li>4. No cellulose blow-in insulation allowed.</li> <li>5. Acoustical insulation:                             <ol style="list-style-type: none"> <li>a. Wall insulation to be R-11 mineral or fiberglass blankets; manufacturers as listed on number 2 above.</li> <li>b. Provide acoustical insulation in office walls, restroom walls, corridors and classroom walls. Install from top of floor plate to bottom of structure above.</li> </ol> </li> </ol>

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07 21 29	SPRAYED INSULATION	<ol style="list-style-type: none"> <li>1. Acoustical: K-13 Spray-on acoustical insulation by International Cellulose Corporation.</li> <li>2. Applicator shall be approved by manufacturer to install product.</li> <li>3. Must meet ASTM E 1042 testing requirements.</li> <li>4. Minimum fiber recycled content to be 75%.</li> <li>5. NRC of 0.75 per ASTM C 423 with 1” of material.</li> <li>6. Color: Black</li> <li>7. Certification required from manufacturer to ensure product contains no fiberglass, asbestos or other man-made fibers.</li> <li>8. Mock-up required before proceeding with installation.</li> <li>9. No urea-formaldehyde resins.</li> </ol>
07 22 00	ROOF AND DECK INSULATION	<ol style="list-style-type: none"> <li>1. Spray foam insulation preferred for rafter cavities if the budget allows. Use closed-cell polyurethane foam. ATSM C 1029</li> <li>2. Mineral fiber blanket, or rigid insulation board are second choice in preference; friction fit.</li> <li>3. Polyisocyanurate rigid board insulation per manufacturer’s recommendations as required per EPDM roofing manufacturer.</li> </ol>
07 24 00	(EIFS) EXTERIOR INSULATION & FINISH SYSTEMS, OR STUCCO	<ol style="list-style-type: none"> <li>1. Not allowed.</li> </ol>
07 27 00	AIR BARRIERS	<ol style="list-style-type: none"> <li>1. Interior vapor retarder shall be installed on outside face of wall sheathing.</li> <li>2. Continuous Air Barrier: Vaproshield “WrapShield SA” self-adhering vapor permeable air barrier sheet membrane is the preferred product.</li> <li>3. Install with manufacturer’s recommended seam tape.</li> <li>4. Primers, cleaners, sealants and flexible flashings as recommended by manufacturer of air barrier.</li> <li>5. Pre-installation conference and mock-up installation</li> </ol>

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		required before installation of any of these products.
07 31 13	ASPHALT SHINGLES	<ol style="list-style-type: none"> <li>1. Malarkey Artic Seal 401 or Titanium PSU 30 on entire roof with roof pitches between 3:12 and 4:12.</li> <li>2. Malarkey Artic Seal 401 or Titanium PSU 30 at all overhangs, valleys, and ridges with roof pitches greater than 4:12.</li> <li>3. Malarkey The Alaskan 3-Tab shingle shall be based bid asphalt shingle; 15-year workmanship, 35-year material warranty. Malarkey Legacy Laminated Architectural Shingle shall be alternate bid; 20-year workmanship, 50-year material warranty. Both versions shall feature “Scotchgard” protection.</li> <li>4. Sheet metal valleys per below.</li> <li>5. No asphalt shingles allowed below 3:12 pitch.</li> <li>6. See valley spec at the end of this Division.</li> </ol>
07 41 13	METAL ROOF PANELS	<ol style="list-style-type: none"> <li>1. Use metal roof panels if considering roof mounted photo voltaic panels on this project.</li> <li>2. AEP Span: Span-Lok hp 16” wide, 2” standing seam rib.</li> <li>3. 22 Ga. preferred.</li> <li>4. Dura Tech 5000 finish preferred.</li> <li>5. Use S-5! Colorgard Snow Retention system at all areas above exterior doorways and pedestrian walkways near building perimeter.</li> </ol>
07 46 00	SIDING	<ol style="list-style-type: none"> <li>1. Pre-finished metal products preferred for low maintenance, high durability products.</li> <li>2. No exposed wood, use fiber cement products in lieu of wood siding and trim.</li> <li>3. CMU with anti-graffiti coating – see Div. 4.</li> </ol>

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07 53 23	EPDM ROOFING (FOR LOW SLOPE APPLICATIONS)	<ol style="list-style-type: none"> <li>1. Carlisle SynTec, 60 mil, or Firestone equivalent.               <ol style="list-style-type: none"> <li>a. Black finish.</li> <li>b. Fully adhered.</li> <li>c. Class 1 and windstorm resistance of 1A-90.</li> <li>d. Use manufacture's Polyisocyanurate tapered boards.</li> <li>e. Provided manufacturer's pressure-sensitive molded walkway pads as deemed necessary per maintenance staff.</li> <li>f. Use manufacturer's 40-mil self-adhering air and vapor barrier as a temporary roof membrane for no more than 30-days.</li> <li>g. Entire roof assembly shall all be installed by a manufacturer's authorized applicator.</li> <li>h. Pre-installation conference required before installation.</li> <li>i. 15-year standard warranty regarding prevention of water penetration for entire roof system.</li> <li>j. Defective work shall be corrected within two-years of substantial completion.</li> </ol> </li> <li>2. Clad metal flashing as necessary.</li> <li>3. Consider 90 mil as an additive alternate bid item</li> </ol>
07 62 00	SHEET METAL FLASHING & TRIM	<ol style="list-style-type: none"> <li>1. 24-gauge minimum preferred.</li> <li>2. Pre-finished with standing seam coping joints over Ice &amp; Water-Shield type product or EPDM membrane.</li> <li>3. 26-gauge, No.304 stainless steel for scuppers.</li> <li>4. Solder joints.</li> <li>5. Follow SMACNA standards.</li> <li>6. See below for valley spec.</li> </ol>
07 71 23	METAL GUTTERS and DOWNSPOUTS	<ol style="list-style-type: none"> <li>1. 22 gauge minimum for gutters. See 5 below for gutter guard.</li> <li>2. Downspouts 12' above grade to be min 4" diameter ABS pipe.</li> <li>3. Downspouts below 12' above grade to be schedule 10 galvanized pipe with welded joints and cleanout. Connect to subsurface piping at / or just above grade. Downspouts should be removable, not set in concrete.</li> </ol>

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		<p>Seal around downspout and tightline.</p> <p>4. Exterior through wall scuppers shall be Josam or Watts bronze “cow tongue” type downspout nozzle.</p> <p>5. Gutter guard: 22 gauge minimum powder coated steel or aluminum, with ½” perforated holes forming 48% open area.</p>
07 72 00	ROOF SPECIALTIES	<p>1. Curb-mount all accessories.</p> <p>2. Install loop-type safety anchors along ridges for moderate to steep sloped roofing systems.</p> <p>3. Roof restraint fall protection systems shall be designed for low-slope roof systems; Guardian CB anchor system or similar cable based system as approved.</p> <p>4. Cor-a-vent X-5 ridge vent on asphalt shingle vented roofs.</p> <p>5. Low slope roof drains &amp; overflow: Zurn RD2120 or approved equal.</p> <p>6. See below for valley spec.</p>
07 81 00	APPLIED FIREPROOFING	<p>1. Grace Construction Products: Monokote Z-106/G, and Isolotek International; Cafco 400.</p> <p>2. Product meets the following standards:</p> <p style="padding-left: 20px;">a. ASTM E84, ASTM E605, ASTM E736, ASTM E759, ASTM E760, ASTM E761, ASTM E937, ASTM E859, ASTM G21, ASTM E136, ASTM E1354, ASTM C423, ASTM518</p> <p>3. Warranty shall cover defective work for 2-years after Substantial Completion.</p> <p>4. Pre-installation Conference: Schedule one week prior to installation begins, include installers. Review preparation and installation procedures and coordination and scheduling necessary for related work.</p>

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07 84 00	FIRESTOPPING	<ol style="list-style-type: none"> <li>1. Elastomeric Silicone Firestopping:               <ol style="list-style-type: none"> <li>a. 3M Fire Barrier Water Tight Sealant 3000WT</li> <li>b. Hilti CP 601S</li> <li>c. STI SIL300 Firestop Sealant</li> </ol> </li> <li>2. Foam Firestopping:               <ol style="list-style-type: none"> <li>a. 3M Fire Barrier Rated Foam FIP</li> <li>b. Hilti CP 620 Firestop Foam</li> </ol> </li> <li>3. Other Firestopping:               <ol style="list-style-type: none"> <li>a. Owens Corning Thermafiber</li> <li>b. Pecora AC-20 FR</li> </ol> </li> </ol>
07 90 05	JOINT SEALERS	<ol style="list-style-type: none"> <li>1. Type A -Exterior sealant: Dow Corning 791 and 795, Tremco Spectrem 1, 2, 3 and 4-TS, Pecora 865, 895 and 898.               <ol style="list-style-type: none"> <li>a. Applications for use: Control, expansion and soft joints for masonry. Joints between concrete and other materials. Joints between metal frames and other materials. Joints at curtain walls, storefronts, aluminum break metal and other substrates.</li> </ol> </li> <li>2. Type B –Exterior Metal Lap Joint sealant: Tremco Butyl Sealant and Pecora BC-158.               <ol style="list-style-type: none"> <li>a. Applications for use: Concealed sealant bead in sheet metal work and siding overlaps.</li> </ol> </li> <li>3. Type C –Interior sealant: Tremco Tremflex 834 and Pecora AC-20 +Silicone.               <ol style="list-style-type: none"> <li>a. Applications for use: Interior wall and ceiling control joints including top, bottom and corners of all gypsum acoustical partitions. Joints between door and window frames and wall surfaces. Other interior joints for which no other type of sealant is indicated.</li> </ol> </li> <li>4. Type D –Acoustical sealant: Pecora AIS-919 and Tremco Tremflex 834.               <ol style="list-style-type: none"> <li>a. Applications for use: Interior acoustical sealant for interior walls, ceilings and floors.</li> <li>b. For concealed locations only.</li> </ol> </li> </ol>

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		5. Type E – Vapor retarder sealant: 1 part polyurethane type such as Tremco Dymonic FC.

**NOTES:** Valley Specification: This is to be used on *all* composition roofs with valleys.

1. At valley lay continuous ice & water shield from eave to ridge at 36-inches wide minimum coverage.
2. Lay in raised edge “W” valley flashing and install per SMACNA Standards.
3. Install Ice & water shield on each side of “W” flashing. Lap 6” min over flashing and run continuous from eave to ridge.
4. Cut shingles in valley. Start narrow at the ridge and widen toward the eave. Trim shingle points and seal down.