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DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION - C07210: BUILDING INSULATION

PART I - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Perimeter wall insulation (supporting backfill).
2. Concealed building insulation.
3. Vapor retarders.

PART II - PRODUCTS

2.1 FOAM-PLASTIC BOARD INSULATION

A. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV, 1.60 lb/cu. ft. (26 kg/cu. m), with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively.

1. Available Manufacturers:

- a. DiversiFoam Products, Mendota, IL 61342
- b. Dow Chemical Company, Midland, MI 48674
- c. Owens Corning, Toledo, OH 43659

2.2 GLASS-FIBER BLANKET INSULATION

A. Available Manufacturers:

1. Owens Corning - Eco Touch, Toledo, OH 43659 (preferred)
2. CertainTeed Corporation, Valley Forge, PA 19482
3. Johns Manville, Denver, CO 80202

B. Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type II, Class C; Category 1 (membrane is a vapor barrier), faced with kraft faced vapor-retarder membrane on one face.

2.3 AIR BARRIER

A. Air Barrier (Building Felt): ASTM D266 one layer of 30 pound (Type II) asphalt saturated roofing felt.

2.4 VAPOR RETARDERS

A. Polyethylene Vapor Retarders: ASTM D 4397, 6 mils (0.15 mm) thick, with maximum permeance rating of 0.13 perm (7.5 ng/Pa x s sq. m).

B. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

C. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and with demonstrated capability to bond vapor retarders securely to substrates indicated.

2.5 AUXILIARY INSULATING MATERIALS

A. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by insulation manufacturers for sealing joints and penetrations in vapor-retarder facings.

B. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.

PART III - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions to products and application indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 INSTALLATION OF PERIMETER INSULATION

A. On vertical surfaces, set insulation units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer.

1. If not otherwise indicated, extend insulation a minimum of 24 inches (610 mm) below exterior grade line.

B. Protect below-grade insulation on vertical surfaces from damage during backfilling by applying protection course with joints butted. Set in adhesive according to insulation manufacturer's written instructions.

3.3 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between foam-plastic insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Install mineral-fiber insulation in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.

2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

3. Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures.

4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

5. For wood-framed construction, install mineral-fiber blankets according to ASTM C 1320 and as follows:

a. With faced blankets having stapling flanges, secure insulation by inset, stapling flanges to sides of framing members.

E. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:

1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.

2. Apply insulation standoffs to each spindle to create cavity width indicated between concrete substrate and insulation.

3. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.

4. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.

3.4 INSTALLATION OF AIR BARRIER AND VAPOR RETARDER

A. Air Barrier (Building Felt): Install horizontally; begin by aligning bottom edge with base of wall 24-inches from a corner, print side out. Providing a 6-inch minimum horizontal lap and a 2-inch vertical lap. Work from the bottom up, taping all seams.

B. Vapor Retarders:

1. Batt Insulation: Vapor retarder face shall be installed on the warm side of construction, unless otherwise indicated. Tape joints and ruptures in vapor retarder and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

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2. Polyethylene Film: Use a combination of mechanical fasteners and sealant to attach to top plate, bottom plate and stud end. Place film over sealant without tension and press to provide contact. Secure to stud every 24-inches. Overlap edges a minimum 6-inches at vertical and horizontal edges.

a. Extend vapor retarder to extremities of areas to be protected from vapor transmission where batt insulation cannot reach. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarder.

Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarder.

END OF SECTION C07210

SECTION - C07464 - FIBER REINFORCED HYBRID (RAINSREEN) SIDING
PART I - GENERAL

SECTION INCLUDES

Board and Panel (Rainscreen) Siding for walls and soffits with batten strips and accessory trims and flashings. For exterior and interior use refer to the drawings.

DELIVERY, STORAGE, AND HANDLING

Store products in manufacturer's unopened packaging until ready for installation.

Store in ventilated areas with constant minimum temperature of 60 degrees F (16 degrees C) and maximum relative humidity of 55 percent.

WARRANTY

See Section C01700 - Contract Closeout, for additional warranty requirements.

Correct defective Work within one year period after Date of Substantial Completion.

Provide fifteen (15) year manufacturer warranty for materials.

PART II - PRODUCTS

REGULATORY REQUIREMENTS

Conform to applicable code for fire retardant requirements.

MANUFACTURERS

Fiber Reinforced Decking:

1. Resysta North America, Inc., Chino, CA 91710

MATERIAL

Fiber Reinforced Hybrid (Rainscreen) Siding: shall be an extruded composite consisting of a proprietary blend of approximately 60% rice husks, 22% common salt and 18% mineral oil.

Properties: Manufacturer to supply information regarding the various properties and characteristics of its product(s).

Fiber reinforced hybrid siding shall be workable, sandable and stainable similar to normal wood products.

SIDING

Board Siding: RESPC120612

1. Size: 0.51 inches (13 mm) thick, 5.51 inches (140 mm) high nominal board with .394 inch (10 mm) interlocking shiplap reveal.

2. Maximum Span: 16 inches.

3. Profile: Flat face with ribbed back and grooved shiplap edge.

4. Surface Texture: Sanded.

Corner Strip Closure (Outside End Corners): RESF12812

1. Size: 1/2-inch (12.7 mm) thick by 8-inches (63.5 mm) wide by length.

2. Install miscellaneous trims as shapes as required to provide a complete assembly.

FINISH

Stains and Sealer: Select from manufacturer's standard glaze colors.

1. Manufacturer Provided Stain Color:

a. FVG C 14 "Siam". Use Sherwin Williams SW6104 Kaffee paint on any ceiling or wall penetrations to match C 14. SW Pro Industrial Multi-Surface Acrylic Coating should be used on any metal surfaces such as mechanical vents. SW Pro Mar 200 Zero VOC in Eggshell finish should be used on all other surfaces such as drywall, wood, etc.

b. Alternate: FVG C 28, where approved by owner. Use Sherwin Williams SW7523 Burnished Brandy to match C 28

2. Sealer: 2K Protection Sealant

Use of non-manufacturer water borne or oil-based stain is not recommended and may violate the product warranty.

ACCESSORIES

Nails and Screws: Corrosion resistant type; non-staining, of size and strength to securely and rigidly retain the work, prefinished to match siding finish.

Flashing: Galvanized steel

Accessory Components: Fascias, Starter strips, and Trim of same material and finish as siding.

Prime Paint: Latex base primer enamel.

PART III - EXECUTION

EXAMINATION

Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.

Verify that weather barrier has been installed over substrate completely and correctly.

Confirm metal flashings are installed at sills, heads of wall openings, and horizontal joints of sheet materials.

Do not proceed with installation until unacceptable conditions have been corrected.

If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

PREPARATION

Prime paint surfaces in contact with cementitious materials.

INSTALLATION

Install siding in accordance with manufacturer's instructions.

1. Prep cut outs to allow for expansion gaps at inside and outside corners.

2. Provide joint gaps as indicated on Drawings. Typical joint width is approximately 3/8-inch.

Attach vertical support battens (furring) securely to framing, not sheathing, with horizontal components true to level and vertical components true to plumb, providing a weather resistant installation.

1. Place vertical support battens (furring) to allow screw attachment within two inches of the end of the horizontally placed siding panels.

2. Confirm battens provide minimum 3/4-inch airspace between siding and weather barrier.

Manufacturer to ship pre-stained and pre-sealed individual planks. All trim and fascia panel trim boards will be shipped unfinished. GC is responsible for staining and sealing those elements prior to installation. Apply finish stain (1 Coat Stain, 2 Coats Sealant).

1. Where alternate color is used manufacturer will ship unfinished boards and thus GC will be responsible for all staining and sealing as described above.

Fasten siding in place, level and plumb.

1. Arrange for staggered joint (ship's deck) pattern.

2. Install siding for natural shed of water.

3. Position cut ends over bearing surfaces. Sand cut edges smooth and clean.

Install corner strips. Countersink screws at all exposed fasteners. See section I.

Install joint sealers between siding/soffit/trim and adjacent construction, using procedures specified elsewhere.

Touch-up prefinished paint surfaces that are disfigured. Unsightly touch-up will require removal and replacement of affected siding.

H.	Sand work smooth and set exposed nails and screws. Ease sharp edges with 80-100 grit sandpaper for color uniformity prior to staining.	
	Install manufacturer supplied wood dowel plugs over all exposed "countersunk" screw hole locations. Sand down dowels to be flush with finish wall face & apply finish stain (1 Coat) to match. Manufacturer to supply an adequate amount of additional stain for GC's use.	
3.4	TOLERANCES	
A.	Maximum Variation From Plumb and Level: 1/4-inch per 10 feet (6 mm/3 m).	
B.	Maximum Offset From Joint Alignment: 1/16-inch (1.5 mm).	
3.5	PROTECTION	
A.	Protect installed products until completion of project.	
B.	Touch-up, repair or replace damaged products before Substantial Completion.	
END OF SECTION C07464		
SECTION - C07530: THERMOPLASTIC MEMBRANE ROOFING		
PART I - GENERAL		
SUMMARY		
1.1	Contractor shall furnish and install a 50 mil, single ply membrane roofing system that is fabricated of a well-inserted low shrink, Anti-wicking Polyester Fabric and has a thermoplastic coating laminated to both sides as manufactured by Duro-Last Roofing Inc.	
A.	Insulation: Refer to drawings for required thickness and R-Value, Polyisocyanurate, mechanically fastened. (Minimum Prototypical R-Value is 18.5 and prototypical thickness is 3"). Site adapt architect to verify & adjust plans per local regional requirements for actual thickness and R-Value required)	
1.2	RELATED WORK	
C.	Flexible and Sheet Metal Flashing: SECTION C07600	
D.	Roof Sheet Metal and Trim: SECTION C07620	
E.	Roof Hatches: SECTION C07720	
1.3	QUALITY ASSURANCE	
A.	Installer Qualifications: A qualified installer, approved by manufacturer to install manufacturer's products	
1.	Contact: Lindsay Beuthin, Regional Sales Manager, (800) 248-0280, ext 2110. Installer must be authorized.	
B.	Source Limitations: Obtain components for membrane roofing system from approved roofing membrane manufacturer.	
C.	Fire-Test-Response Characteristics: Provide membrane roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction.	
1.	Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.	
1.4	WARRANTY	
A.	Special Warranty: Manufacturer's standard form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing and flashing system that fail in materials or workmanship within 15 years from date of Substantial Completion. Failure includes roof leaks. It is the Owner's intent to secure a system warranty for the membrane roofing and roof flashing under one manufacturer's warranty, with one contractor.	
PART II - PRODUCTS		
PVC ROOFING MEMBRANE		
2.1	PVC Sheet: ASTM D 4434; Type III, fabric reinforced.	
1.	Manufacturers:	
a.	Duro-Last Roofing, Inc., Saginaw, MI 48601 (See National Account)	
2.	Thickness: 50 mils (1.0 mm), nominal	
3.	Exposed Horizontal Face Color: White	
4.	Exposed Vertical Face Color: Tan	
2.2	ROOF SHEET METAL FLASHING AND TRIM	
A.	See Section 07620 for roof flashing associated with a "Complete System."	
2.3	AUXILIARY MATERIALS	
A.	General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.	
B.	Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet membrane.	
C.	Bonding Adhesive: Manufacturer's standard solvent-based bonding adhesive for membrane, and solvent-based bonding adhesive for base flashings.	
D.	Metal Termination Bars: Manufacturer's standard pre drilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick, with anchors.	
E.	Metal Battens: Manufacturer's standard aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch (25 mm) wide by 0.05 inch (1.3 mm) thick, pre punched.	
F.	Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.	
G.	Miscellaneous Accessories: Provide pourable sealers, performed cone and vent sheet flashings, performed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, slip sheet, and other accessories.	
2.4	ROOF INSULATION	
A.	Polyisocyanurate Board Insulation, see drawings for required thickness and R-Value: ASTM C 1289, Type II, felt or glass-fiber mat face on both major surfaces, must be approved by Duro-Last.	
B.	Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches (1:48), unless otherwise indicated.	
C.	Provide performed saddles, crinkles, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.	
2.5	INSULATION ACCESSORIES	
A.	Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.	
B.	Cold Fluid-Applied Adhesive: Manufacturer's standard cold fluid-applied adhesive formulated to adhere roof insulation to substrate.	
C.	Cover Board: ASTM C 208, Type II, Grade 2, cellulosic-fiber insulation board, 1/2 inch (13 mm) thick.	
D.	Cover Board: DOC PS 2, Exposure 1, oriented strand board, 7/16 inch (11 mm) thick.	
E.	Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch (13 mm) thick.	
2.6	WALKWAYS AND PROTECTION PADS	
A.	Flexible Walkways: Extruded factory-formed pad from recycled roof membranes and oriented strand polyester reinforcement.	
1.	Duro-Last Roofing, Inc., Saginaw, MI 48601 (See National Accounts) "Roof Trak III"	

PART III - EXECUTION	
3.1	SUBSTRATE BOARD INSTALLATION
A.	Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
3.2	INSULATION INSTALLATION
A.	Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
B.	Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.
C.	Install tapered insulation under area of roofing to conform to slopes indicated.
D.	Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
1.	Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof. Contact Duro-Last Engineering Services to determine fastening requirements.
E.	Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Loosely butt cover boards together and fasten to roof deck.
1.	Fasten to resist uplift pressure at corners, perimeter, and field of roof.
3.3	MECHANICALLY FASTENED ROOFING MEMBRANE INSTALLATION
A.	Install roofing membrane over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
1.	Install sheet according to ASTM D 5082.
B.	Mechanically or adhesively fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing. Contact Duro-Last Engineering Services to determine fastening requirements.
C.	Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
1.	Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.
D.	In-Splice Attachment: Secure one edge of roofing membrane using fastening plates or metal battens centered within membrane splice and mechanically fasten roofing membrane to roof deck. Field-splice seam.
E.	Through-Membrane Attachment: Secure roofing membrane using fastening plates or metal battens and mechanically fasten roofing membrane to roof deck. Cover battens and fasteners with a continuous cover strip.
3.4	BASE FLASHING INSTALLATION
A.	Install sheet flashings and performed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
B.	Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
C.	Flash penetrations and field-formed inside and outside corners with sheet flashing.
D.	Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
E.	Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
3.5	WALKWAY AND PROTECTION PAD INSTALLATION
A.	Flexible Walkways: Install walkway products in locations indicated. Heat-weld (hot air) attachment skirts to roof membrane per manufacturer's written instructions.
3.6	FIELD QUALITY CONTROL
A.	Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
B.	Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
C.	Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.
END OF SECTION C07530	
SECTION - C07600: FLEXIBLE AND SHEET METAL FLASHING	
PART I - GENERAL	
SECTION INCLUDES	
A.	Elastomeric flashing for walls, doors and windows.
B.	Metal flashings indicated on the drawings.
C.	Mechanical equipment support curb sheetmetal caps and flashings.
D.	Note: The owner preferences a product with a higher pre-consumer and/or post-consumer recycled content under the condition that there is not a significant increase in price between the product options. Under the condition that there is not a significant increase in price between the product options.
RELATED SECTIONS	
A.	Unit Masonry Assemblies: SECTION C04810
B.	Thermoplastic Membrane Roofing: SECTION C07530
C.	Sealants and Caulking: SECTION C07920
D.	Roof Sheet metal Flashing and Trim: SECTION C7620
REFERENCES	
A.	Publications: Perform sheetmetal work in accord with recommendations in the latest edition of the Architectural Sheet Metal Manual, as published by the Sheet Metal and Air Conditioning National Contractor's Association.
GUARANTEE	
A.	In addition to the requirements specified, sheetmetal work shall be completely watertight. The Contractor shall furnish in writing guarantees providing for repairs to sheetmetal work at no additional cost to the Owner. Guarantee shall include repair of all leaks or defects in sheetmetal/materials and workmanship appearing within two years of date of acceptance by the Owner.
PART II - PRODUCTS	
FLEXIBLE (ELASTOMERIC) FLASHING	
A.	Elastomeric Flashing: Flashing and accessories for installation in cavity wall construction. Including but not limited to:
1.	Wall bases
2.	Heads of openings
3.	Window sills
4.	Shelf angles and lintels
5.	Wall discontinuities in the cavity
B.	Provide a water proof EPDM membrane through-wall flashing integrated with the wall assembly's water resistive barrier and cavity drainage system. Provide a EPDM membrane flashing of 0.40 mil (40 mil) thickness consisting of cured, dimensional stable, non-reinforced with talc removed surfaces.
C.	Provide accessories as required, including but not limited to:
1.	Splice tape, compound, primer and cleaner
2.	Bonding adhesives
3.	Lap sealants
4.	Corner patch
5.	Termination bar

PART III - EXECUTION	
SHEETMETAL FLASHING	
A.	Galvanized Sheetmetal: Zinc-coated steel ASTM A653, coated designation G-90, in thickness of 22 gauge 36-inch to 48" coil length.
B.	Sheetmetal Minimum Gauges: Gauges are based on galvanized sheetmetal. Where other metal is used, use equivalent weights in tables from the Sheet Metal Manual.
1.	Hook Strips 22 ga
2.	Joint Covers 22 ga
3.	Special Flashing 22 ga
4.	Pitch Pans 24 ga
5.	Window Sill Flashing 22 ga
2.4	MISCELLANEOUS MATERIALS
A.	Screws and Bolts: Galvanized, plated or non-ferrous metal.
B.	Solder: Composition 40% lead and 60% tin for use with galvanized sheet.
C.	Soldering Flux: Federal Specification O-F-506, Form A or B or equal commercial product as approved on the job.
D.	Mastic: Flashing cement, equal ot BESTILE, Manville Products Coporation.
E.	Bituminous Paint: ASTM C1187,NA-TAZ, Pure Asphalt Company, Chicago, IL or equal.
PART III - EXECUTION	
ELASTOMERIC FLASHING INSTALLATION	
A.	General: Install as shown on the drawings and at all locations normally considered good practice. Trim cut flashings clean to provide a finished installation where no flashing surfaces are visible
B.	Wall Flashing: Install where shown on the drawings, 1/2-inch inward from outside face of wall and extend up and through wall as indicated, joints lapped 4 inches minimum with laps bedded in sealant.
C.	Door and Window Flashing: Install at all sills and heads, whether or not shown on the drawings. Install 1/2-inch inward from outside face of wall and extend 6" on each side of opening, up and through wall as indicated. Dam ends of flashing to prevent water penetration at ends. Sheeting shall not be allowed to hang free prior to completion of wall finish, but shall be nailed to framing (behind sheathing) with nails and discs.
3.2	SHEETMETAL INSTALLATION
A.	General:
1.	Disimilar Materials Contact: Where sheetmetal is shown contacting concrete, masonry materials, steel, other dissimilar metal, or is contacting wood, keep sheetmetal from direct contact with the dissimilar materials by a coating of bituminous paint applied to a thickness of 15 mils.
2.	Surfaces to which sheetmetal will be applied shall be true, smooth, clean, dry and free from defects which might lead to distortion of metal work. Install all sheetmetal work in accordance with approved standards in reference manual, and coordinate with work of other trades, particularly the roofing trade for proper sequence of flashing work.
3.	Proper and adequate provisions shall be made in fabrication, installing and fastening sheetmetal work for expansion and contraction of metal and other materials entering in the work's that pulling, splitting, opening of joints, warpage or other failure of the work shall be prevented. Expansion joints in sheetmetal shall be placed not farther than 40 feet apart.
B.	Underlayment: Install building paper under all sheetmetal covering over wood nailers or blocking. Lap joints two inches and nail at 16-inches on center, or secure with flashing cement.
C.	Seams: Finish seams neatly with lines trimmed true and sharp. Number of joints shall be as few as is consistent with commercial sizes of materials.
1.	Flat seams, not less than 1/2-inch in width, shall be either single locked and sweated with solder, or double locked and malletted flat.
2.	Loose locked seams shall be single locked.
D.	Cross joints shall be loose locked and filled with elastomeric sealant.
E.	Cleats: When applied as an exposed covering, fasten sheet metal to wood nailers with 2-inch by 3-inch cleats of same kind and weight of metal, spaced not over 12-inch center to center along hems, with one end of cleat turned into hem and opposite end secured with two fasteners and turned back over fasteners.
3.4	CLEAN-UP
A.	Upon completion of work of this section remove related debris from premises.
END OF SECTION C07600	



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