SECTION 07 42 44

COMPOSITE WALL PANELS

PART 1 – GENERAL

1.1 PURPOSE

A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

A. X.

1.3 SUMMARY

A. Section Includes:
   1. Prefinished, composite panel, in compliance with the fire hazard classifications as required by IBC 2015 and NFPA 285.
   2. Extruded aluminum mounting system.
      a). System summary: Drained/back-ventilated aluminum composite panel mounting system, tested to meet or exceed V3, W3 in accordance with AAMA 509, modeled in compliance with the insulation requirements of IECC, fabricated by a Premium MCM Fabricator, as defined by the Metal Construction Association.

B. Related Sections:
   1. Section 05 40 00 – Cold-Formed Metal Framing.
   2. Section 07 25 00 – Weather Barriers.
   3. Section 07 62 00 – Sheet Metal Flashing and Trim.
   4. Section 09 21 16 – Gypsum Board Assemblies

C. References:
   1. American Architectural Manufacturers Association (AAMA)
      a). AAMA 509-09: Voluntary Test and Classification Method for Drained and Back Ventilated Rain Screen Wall Cladding Systems; current edition.
      b). AAMA 605-05: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels; current edition.
   2. ASTM International (ASTM)
      a). ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus; current edition.
      b). ASTM B221-08 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; current edition.
      c). ASTM D822: Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings; current edition.
      d). ASTM D1308: Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; current edition.
      e). ASTM D1781: Standard Test Method for Climbing Drum Peel for Adhesives; current edition.
      f). ASTM D1929: Standard Test Method for Determining Ignition Temperature of Plastics; current edition.
      g). ASTM D2244: Standard practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; current edition.
      h). ASTM D2247: Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity; current edition.
      i). ASTM D2794: Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact); current edition.
      j). ASTM D3359: Standard Test Methods for Measuring Adhesion by Tape Test; current edition.
      k). ASTM D3363: Standard Test Method for Film Hardness by Pencil Test; current edition.
      l). ASTM D4214: Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films; current edition.

m). ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials; current edition.
n). ASTM E162: Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source; current edition.
o). ASTM E283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; current edition.
p). ASTM E330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, Curtain Walls by Uniform Static Air pressure Difference; current edition.
q). ASTM E331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; current edition.

3. ICC Evaluation Service (ICC-ES)
   a). ICC-ES Acceptance Criteria 25: Acceptance Criteria for Metal-Faced Plastic Core Wall Panels on Noncombustible Exterior Walls; current edition.
4. International Building Code (IBC); current edition.
5. International Code Council:
   a). International Energy Conservation Code (IECC); current edition.
6. International Organization For Standardization (ISO)
   a). ISO 17025: General requirements for the competence of testing and calibration laboratories; current edition.
7. National Fire Protection Association (NFPA)
   a). NFPA 285: Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-bearing Wall Assemblies Containing Combustible Components; current edition.
8. Underwriters Laboratories (UL)
   a). ANSI/UL 263: Fire Resistance Ratings, Certifications Directory; current edition.

1.4 SYSTEM DESCRIPTION

A. System Requirements:
   1. Rainscreen System: Panel system utilizing aluminum extrusion with integral concealed support system. Continuous joint spline: 4mm thick, in material and finish as required by finish schedule. No field sealant, gasketing, exposed flashing or trim required (coping required at parapet conditions)

B. Delegated Design Requirements:
   1. Fabricator: Responsible for designing system, including anchorage to structural system and necessary modifications to meet specified requirements and maintain visual design concepts.
      b). Employ registered professional engineer, licensed to practice structural engineering in jurisdiction where Project is located, to certify compliance with system performance requirements.
      c). Drawings: Diagrammatic and are intended to establish basic dimension of units, sight lines, and profiles of units.
      d). Provide concealed fastening.
      e). Attachment Considerations: Account for site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening and fracturing connections.

C. Performance Requirements: Certify compliance with requirements listed below, based on manufacturer's test data for testing conducted by independent laboratory. Laboratory results older than eight (8) years from date of submittal shall not be acceptable. If current test results are unavailable or unacceptable, subcontractor shall conduct testing to certify compliance, without impact to the construction schedule.
   1. Maximum Perimeter Framing Deflection: Normal to plane of wall between supports, deflection of secured perimeter framing members shall not exceed L/175 or 3/4 inch, whichever is less.
   2. Maximum Panel Deflection: Not exceed L/60 of full span normal to plane of wall.
   3. Maximum Anchor Deflection: Not exceed 1/16 inch.
   4. Maximum Permanent Deflection of Framing Members: Not exceed L/100 of span length at 1-1/2 times design pressure and components shall not experience failure or gross permanent distortion. At connection points of framing members to anchors, permanent set shall not exceed 1/16 inch.
   5. Rainscreen classification: meet or exceed V3, W3 when tested in accordance with AAMA 509.
   6. Air infiltration: Not to exceed 0.04cfm per square foot of wall specimen area, when tested to 6.24psf in accordance with ASTM E283.
   7. Static water infiltration: No uncontrolled water shall pass into the room-side of the wall assembly when tested at a differential static pressure of 15psf in accordance with ASTM E331.

8. Bond Integrity: When tested for bond integrity, ASTM D1781 (simulating resistance to panel delamination), there shall be no adhesive failure of bond between core and skin nor cohesive failure within core, based on following values.
    a). Bond Strength: 214 PSI (vertical pull)
    b). Peel Strength:
        1). 22.5 inch pound/inch dry.
        2). 22.5 inch pound/inch after 8 hours in water at 200º F.
        3). 22.5 inch pound/inch after 21 days soaking in water at 70º F.

D. Structural Performance: Provide metal-faced composite wall panel assemblies capable of withstanding the effects of the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E 330:
1. Design Wind Loads: As indicated on structural drawings.
2. Deflection Limits: Metal-faced composite wall panel assemblies shall withstand wind loads with deflections in compliance with paragraph 1.2 C above.

E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): Minus 20 º to plus 180 º F ambient; 180 º F material surfaces.

F. Interface With Adjacent Systems:
1. Accommodate allowable tolerances and deflections for structural members in installation.
2. Attachments of panel support system are to be to minimum 16 gauge metal stud system.

G. Code Compliance:
1. Composite Wall Panels shall meet the requirements of IBC 1407.

1.5 SUBMITTALS

A. General: Submit in accordance with Division 01.

B. Product Data: Submit following:
1. Product data for entire system, including panels, concealed flashings, and finishes.
2. Color charts for finish indicating manufacturer’s colors available for selection.
3. Samples of warranties customized for this project.

C. Shop Drawings: Submit for installation of system, including panel fabrication, jointing, corners, concealed flashings, gutters, weeps, copings, fascia, soffits, and accessories.
1. Stamp with seal and signature of professional engineer responsible for design.
2. Submit detail drawings of panel connections, draining, ventilating and weep details.
3. General contractor to coordinate details for sheathing and metal stud system support for the panel system.
4. Detail connections, fastener penetrations through air barrier, method and materials used to seal penetrations.
5. Coordinate transitions and interfacing with all surrounding fenestration products or adjacent construction.
6. Coordinate how trim members are spliced, sealed, terminated and provide water tight conditions with fenestration products and surrounding conditions.
7. Coordinate how sheathing and air barrier terminate, interface and seal to fenestration products and surrounding conditions to make water tight installation.
8. Submit R-value averaging of proposed wall assembly, in compliance with the insulation requirements for steel-framed walls as determined by IECC 2015 table 502.1.2. Model design criteria should match ASTM E283 test specimen in size and detailing.

D. Test Data: Submit as required by IBC Section 1407.

E. Samples: Submit minimum 3 by 5 inch in size illustrating composition and color.

F. Informational Submittals: Submit following packaged separately from other submittals:
1. Design data for system indicating compliance with delegated design requirements.
2. Test Reports: Certified test reports showing compliance with performance requirements.
    a). Submit full laboratory report, demonstrating that system meets or exceeds rainscreen classification of V3, W3 when tested in accordance with AAMA 509.
3. Certifications specified in Quality Assurance article.
4. Qualification Data: All required qualification data.
5. Fabricator instructions.
6. Manufacturer's field reports.

G. Closeout Submittals: Submit warranty in accordance with Division 01.

1.6 QUALITY ASSURANCE

A. Independent Laboratory Qualifications: Demonstrate compliance with ISO 17025.
B. Engineer Qualifications: Registered professional engineer licensed to practice structural engineering in jurisdiction where Project is located, with minimum of five years' experience in design of metal wall systems and structural stud design.
C. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this Section with minimum 10 years' experience.
D. Fabricator Qualifications: Company specializing in fabricating work specified in this Section with minimum 10 years' experience. Fabricator shall be a certified as a Premium MCM Fabricator by Metal Construction Association Fabricator's Council, and shall be preauthorized by aluminum-faced composite panel manufacturer. Fabricator shall document 10 projects of similar nature in past five years.
E. Installer Qualifications: Certified acceptable to fabricator, with experience on at least 10 projects of similar nature in past five years.
F. Certifications:
   1. Fabricator's certification that Installer is approved to perform work.
   2. Fabricator's certification that products furnished for Project meet or exceed specified requirements.
   3. Engineer's Certifications.

G.

1.7 FIELD MOCK-UPS

A. General: Comply with Division 01.
B. Sample Installation:
   1. Construct on-site mock-up 10 feet long by 10 feet tall as directed.
   2. Show jointing, corners, weeps, and typical construction techniques.
   3. Accepted Field Sample: May not be part of completed Work

1.8 PRE-INSTALLATION CONFERENCE

A. Schedule pre-installation conference in accordance with Division 01.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading: Protect finish panel faces, including plastic sheet protection wrap.
B. Acceptance at Site: Inspect each panel and accessory as delivered and confirm that finish is undamaged. Do not install damaged panels.
C. Storage and Protection: Comply with fabricator's printed requirements.

1.10 PROJECT CONDITIONS

A. Environmental Requirements: Comply with manufacturer's written requirements under which products can be installed.

1.11 WARRANTY

A. Special Warranties: Prepare and submit in accordance with Division 01.
   1. Factory Finish: 30-year Warranty Stating Finish will be:
      a). Free of fading or color change in excess of 5 Delta E units, ASTM D2244.
      b). Will not chalk in excess of numeral rating of 8 for colors and 6 for whites, ASTM D4214.
   2. Fabricator/Installer Warranty: Standard form in which Fabricator agrees to repair or replace metal panels that fail due to improper fabrication or installation techniques:
      a). Warranty Period: One year from Date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Composite Metal Panel Manufacturers:
   1. Alucobond, manufactured by 3A Composites USA, Inc.
   2. Alpolic, Mitsubishi Plastics Composites America, Inc.
   3. Reynobond, Alcoa Architectural Products.

4. Substitutions: Document 1 million square feet of successful product installation on domestic projects, compliant with quality assurance, testing, and performance requirements specified herein. Document full compliance with IBC 2015 and ICC-ES Acceptance Criteria 25.

2.2 MATERIALS

A. Composite Panels:
   1. Aluminum-faced panel with thermoplastic core.
      a). Overall Panel thickness: 0.157 inches.
      b). Aluminum Face: 0.0197 inches, with strippable protective film. Protective film: heavy and opaque if required to indicate finish grain direction.
      c). Aluminum Backer Sheet thickness: 0.0197 inches.
      d). Aluminum Alloy: ASTM B209 3003 at coated finish
B. Composition: Two sheets of aluminum sandwiching core of extruded thermoplastic material formed in continuous process with no glues or adhesives between dissimilar materials. Products laminated sheet by sheet or in batch process using glues or adhesives between materials shall not be acceptable.
   1. Non-Rated Core: Standard Polyethylene Core, with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing agency acceptable to authorities having jurisdiction:
      a). Flame-Spread Index: 25 or less
      b). Smoke-Developed Index: 450 or less
   2. Fire-Retardant Core: Complies with NFPA 285, with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:
      a). Flame-Spread Index: 15 or less.
      b). Smoke-Developed Index: 105 or less.
C. Finish/Color: Refer to Appendix.

2.3 ACCEPTABLE FABRICATORS

A. Premium MCM Fabricators, as certified by the Metal Construction Association and approved by Architect ten (10) days prior to bid and in accordance with Division 1.

2.4 MISCELLANEOUS METAL FRAMING

A. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653/A 653M, G40 (Z120) hot-dip galvanized or coating with equivalent corrosion resistance unless otherwise indicated.
B. Subgirts: As required by structural calculations. Minimum requirement is manufacturer's standard C- or Z-shaped sections 0.079-inch (nominal thickness).
C. Zee Clips: As required by structural calculations. Minimum requirement is 0.079-inch (nominal thickness).
D. Base or Sill Angles: As required by structural calculations. Minimum requirement is 0.079-inch (nominal thickness).
E. Hat-Shaped, Rigid Furring Channels:
   1. Nominal Thickness: As required by structural calculations. Minimum requirement is as required to meet performance requirements.
   2. Depth: 7/8 inch.
F. Cold-Rolled Furring Channels: As required by structural calculations. Minimum requirement is minimum 1/2-inch wide flange.
   1. Nominal Thickness: As required by structural calculations. Minimum requirement is as required to meet performance requirements.
   2. Depth: 3/4 inch.
   3. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with nominal thickness of 0.079-inch.
   4. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch (diameter wire, or double strand of 0.048-inch diameter wire.
G. Fasteners for Miscellaneous Metal Framing: As required by structural calculations. Minimum requirement is of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.

2.5 ACCESSORIES

A. Joint spline: 4mm thick, 3-1/4-inch minimum width, in material and finish as required by finish schedule. Continuous along the short panel dimension, terminating in hairline seams along the long panel dimension.
B. Panel Extrusions: Extruded aluminum, ASTM B221.
C. Concealed Flashings: Formed aluminum sheet, minimum 0.030 inch, ASTM B209, post-finished to match panels.
D. Stiffeners: Formed of extruded aluminum, adhered to interior side of metal wall panel with structural silicone and VHB tape, and designed to tie-in to extrusions. Spacing: single, full-width span per every 19.99 square feet of panel area. Demonstrate compliance with structural review and IBC 2006: in event of a contradiction, more stringent requirement will govern. No alternate type stiffeners shall be permitted, such as galvanized steel angles, plates, subgirt or aluminum composite material.
E. Escutcheon plates: 2” thick, or as directed by architect. Plates: Fabricated from the same sheet stock and batch as the face material. Hem outside edge to conceal material core. Maintain 1/16-inch joint between inside edge and adjacent material.

2.6 FABRICATION

A. General: Fabricate and finish metal-faced composite wall panels and accessories at the factory to greatest extent possible, by fabricator’s standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
B. Fabricate metal-faced composite wall panels in a manner that allows proper ventilation on interior side of panel and with joints between panels designed to minimize bulk water penetration.
C. Metal-Faced Composite Wall Panels: Factory form panels in a continuous process with no glues or adhesives between dissimilar materials. Trim and square edges of sheets with no displacement of face sheets or protrusion of core material.
    1. Form panel lines, breaks, and angles to be sharp and true, with surfaces free from warp and buckle. Exposed gaps or pinholes will not be acceptable.
    2. Fabricate panels with panel stiffeners, as required to comply with deflection limits, attached to back of panels with structural silicone sealant or VHB tape.
    3. Fabricate material as necessary to install all panels with finish grain direction arrows oriented as shown on approved shop drawings.
    4. Dimensional Tolerances:
        a). Length: Plus or minus 1/16 inch.
        b). Width: Plus or minus 1/16 inch.
        c). Thickness: Plus or minus 0.008 inch.
        d). Panel Bow: 0.8 percent maximum of panel length or width.
        e). Squareness: 1/16 inch maximum.
D. Sheet Metal Accessories: Fabricate concealed flashings to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.
    1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
    2. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
    3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
    4. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended by metal-faced composite wall panel manufacturer.
        a). Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal-faced composite wall panel manufacturer for application, but not less than thickness of metal being secured.
E. System Characteristics:
    1. Concealed fastener, drained/back-ventilated rainscreen principle.
    2. Weight: 1.12 pounds per square foot.
    3. Pan depth: 1 inch, formed out of 1” route-and-return perimeter panel legs.
    4. System depth (dimension from exterior face of panel to air barrier): 2 1/4 inch.
    5. Horizontal joint: Continuous, extruded horizontal track, with extruded clip attachment. Clip profile: receives continuous joint spline, as specified. Air barrier shall not be visible through the horizontal joint. Install ¼-inch by ¾-inch ventilation slots/weep holes into the bottom horizontal panel leg. Vent slots should

be installed at equal spaces, not to exceed 30 inches on center. Treat ventilation slots with oversized baffles. Exposed fasteners within the joint will not be acceptable.

6. Vertical joint: Clip profile anchored to vertical I-beam stiffener. Clip profile: receives continuous joint spline, as specified. Air barrier shall not be visible through the vertical joint. Exposed fasteners within the joint will not be acceptable.
7. Base detail: Continuous, extruded horizontal track, with extruded clip attachment. Joint spline deleted to allow for proper ventilation. Concealed base flashing: controls bulk water and condensation by shedding moisture to the outside of the building. Allow 8 inches of vertical clearance between base of panel and landscaping. Grade must allow proper drainage of ground water. Submersion of panel system or any other components of the wall assembly shall not be permitted. Exposed fasteners within the joint will not be acceptable.
8. Top detail: Coping material shall be offset 1/4-inch from face of material to allow for proper ventilation. Exposed fasteners within the joint will not be acceptable.

2.7 FINISH

A. PPG DURANAR XL four-coat fluoropolymer coil coatings, AAMA 620/621 and the performance requirements (section 7) of American Architectural Manufacturers Association (AAMA) 2605-05 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels. Finishes formulated from Lumaflon resins such as Megaflon and Coraflon shall not be acceptable.
   1. Color: Refer to Appendix.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Fabricator present, for compliance with requirements for installation tolerances, metal-faced composite wall panel supports, and other conditions as shown on reviewed and accepted shop drawings for conditions affecting performance of the Work.
   1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal-faced composite wall panel manufacturer.
   2. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal-faced composite wall panel manufacturer.
   3. Verify that weather-resistant membrane has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
B. Examine roughing-in for components and systems penetrating metal-faced composite wall panels to verify actual locations of penetrations relative to panel joint locations of panels before panel installation.
C. Prepare written report, endorsed by Fabricator, listing conditions detrimental to performance of the Work, and issue to Architect as formal submittal.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Framing: Install subgirts, base angles, sills, furring, and other miscellaneous wall panel support members and anchorage according to ASTM C 754 and structural engineer’s written instructions. Confirm that all penetrations through the air barrier have been sealed.

3.3 METAL-FACED COMPOSITE WALL PANEL INSTALLATION

A. General: Install metal-faced composite wall panels according to Fabricator's written instructions in orientation, sizes, and locations indicated on Drawings. Install panel’s perpendicular to girts and subgirts unless otherwise indicated. Anchor panels and other components of the Work securely in place to the structural studs, with provisions for thermal and structural movement.
   1. Commence metal-faced composite wall panel installation and install minimum of 300 sq. ft. in presence of Fabricator’s general superintendent or authorized representative.
   2. Install all panels with finish grain direction arrows oriented as shown on approved shop drawings.
   3. Flash metal-faced composite wall panels at perimeter of all openings. Do not begin installation until air barrier and flashings that will be concealed by panels are installed, properly sealed and tested for water tightness and conditions inspected and accepted by independent inspector before being concealed by the

panel system.
4. Install flashing and trim as metal-faced composite wall panel work proceeds.
5. Provide aesthetic escutcheons for pipe and conduit penetrating the air barrier and exterior walls.

B. Fasteners:
1. Aluminum Wall Panels: Use stainless-steel fasteners for attachment of the girts and sub-girts.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action as recommended by metal-faced composite wall panel manufacturer.

D. Attachment System Installation, General: Install attachment system required to support metal-faced composite wall panels and to provide a complete system per contract documents, including sub-girts, extrusions, tracks, panel clips, and anchor channels.
1. Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery.
2. Do not begin installation until weather barrier and flashings that will be concealed by composite panels are installed.

E. Drained/Back-Ventilated Installation: Provide fabricator’s standard track, clips, and stiffeners for a complete outer leaf, draining to the exterior at base. Install support system at locations and, spacing, required by structural engineer. Attach wall panels by interlocking extruded clips attached to stiffeners within routed-and-returned flanges of wall panels.
1. Install wall panels to allow individual panels to "free float" and be installed and removed without disturbing adjacent panels.
2. Do not apply sealants to joints unless otherwise indicated on Drawings.

F. Isolate panels from mortar and limestone panels.

3.4 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal-faced composite wall panel assembly including corners, joint splines, concealed flashings, baffles, gussets, closure strips, and similar items.

B. Flashing: Comply with performance requirements, Fabricator's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
1. Install concealed flashing free of visible oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
2. Expansion Provisions: Provide for thermal expansion of concealed flashing. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal-faced composite wall panel units within installed tolerance of 1/4 inch in 20 feet, non-cumulative, on level, plumb, location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage authorized service representative to inspect, observe testing, and adjust completed metal-faced composite wall panel installation, including accessories.

B. Additional tests and inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Prepare test and inspection reports.

3.7 CLEANING

A. Remove temporary protective coverings and strippable films as metal-faced composite wall panels are installed unless otherwise indicated in manufacturers written installation instructions. General contractor to maintain in original condition after installation and document damage by other trades.

B. After metal-faced composite wall panel installation, clear weep holes of obstructions and dirt.

C. Replace metal-faced composite wall panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

PART 4 – APPENDIX

4.1 PRODUCT DATA / CUT SHEETS

A. Alucobond, Alucobond PE technical data
B. Alucobond, Rainscreen System I, typical plan detail

END OF SECTION