

## SECTION 07 42 13.23 - METAL COMPOSITE MATERIAL WALL PANELS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes: MP-1 wall panel system comprised of:

1. Metal composite material (MCM) panels.
2. Panel system.
3. Aluminum plate for curved panel systems.
4. MCM-faced interior access panel.

B. Related Requirements:

1. Section 06 40 00 "Architectural Woodwork" for interior access panel substrate.
  - a. Plywood panel substrate provided for facing in this Section.
- ~~1.2.~~ Section 07 05 43 "Cladding Support Systems."
- ~~2.3.~~ Section 07 21 00 "Thermal Insulation."
- ~~3.4.~~ Section 07 27 00 "Air Barriers."
- ~~4.5.~~ Section 07 62 00 "Sheet Metal Flashing and Trim."

#### 1.2 DEFINITIONS

- A. MCM: Metal composite material; cladding material formed by joining two thin metal skins to polyethylene or fire-retardant core and bonded under precise temperature, pressure, and tension.
- B. PER: Pressure-equalized rainscreen system designed for no water intrusion, with equal pressure within air cavity and outside cladding barrier.

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, panel system fabricator and Installer, panel system manufacturer's representative, and installers whose work interfaces with or affects panel systems, including installers of openings and adjacent finishes.
2. Examine support conditions for compliance with requirements, including alignment between and attachment to structural members.
3. Review flashings, special panel details, wall penetrations, openings, and condition of other construction that affect panel system.
4. Review temporary protection requirements for system assembly during and after installation.
5. Review procedures for repair of panels damaged after installation.
6. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel, system, and accessory.
- B. Shop Drawings:
  - 1. Include fabrication and installation layouts of panel system; details of edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trim, flashings, closures, accessories, and special details.
  - 2. Accessories: Include details of flashing, trim, and anchorage, at a scale of not less than 1-1/2 inches per 12 inches.
  - 3. Provide signed and sealed drawings, by a qualified design professional in Project jurisdiction, of panel system showing compliance with performance requirements and design criteria identified for this Project.
- C. Samples for Verification, Color: For each type of panel required, with factory-applied color finishes.
  - 1. MCM Panel, Coil-Coated: Not less than 6 by 8 inches.
  - 2. Aluminum Plate, Applied Finish: For post-fabricated powder-coated color, not less than 6 by 8 inches.
- D. Samples for Verification, Fabrication: For curved panel system. Panel sample need not be in the specified color.
  - 1. Curved Panel System: Approximately 30 by 30 inches demonstrating curved panel system facia with Project radius and extending 6-inches flat at ends of arc and with curved soffit return of full depth; minimum 12 inches tall.
- E. Delegated Design Submittals: For panel system, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Test and Evaluation Reports:
  - 1. Product Test Reports: For each MCM panel and panel system, for tests performed by qualified testing agency .
    - a. MCM Panel Manufacturer's Material Test Reports: Certified test reports showing compliance with specific performance or third-party listing documenting compliance in accordance with the IBC.
    - b. Fabricator's Panel System Test Reports: Certified test reports showing system compliance with specific performance or third-party listing documenting compliance in accordance with the IBC.
  - 1) PER System: Tested to AAMA 508.
  - 2. Research Reports: For panel systems and anchor attachments, from an agency acceptable to authorities having jurisdiction ICC-ES showing compliance with requirements .

- B. Field Quality-Control Submittals:
  - 1. Field quality-control reports.
- C. Qualification Statements: For fabricator.
- D. Delegated design engineer qualifications.
- E. Sample warranties.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For panels.
- B. Warranty Documentation:
  - 1. Manufacturers' special warranties.
  - 2. Installer's special warranties.

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 years' experience.
- B. Fabricator Qualifications: Approved by panel system manufacturer. Minimum 5 years' experience fabricating panel systems similar to those required for the Project with successful in-service performance of products without failures of panel systems under specified performance requirements.
- C. Installer Qualifications: Fabricator of panel system or entity that employs installers and supervisors who are trained and approved by panel system manufacturer.
- D. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in state where Project is located and who is experienced in providing engineering services of the type indicated.
- E. Testing Agency Qualifications: An agency acceptable to authorities having jurisdiction.

#### 1.8 MOCKUPS

- A. Build mockups to set quality standards for fabrication and installation.
  - 1. Build mockup of typical panel system as indicated on Drawings, including curved corner, supports, attachments, and accessories.
  - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations by Change Order.
  - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, panels, and other manufactured items so as not to be damaged or deformed. Package panels for protection during transportation and handling.

- B. Unload, store, and erect panels and panel systems in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack panels and panel systems horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store panels to ensure dryness, with positive slope for drainage of water. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Retain strippable protective covering on MCM panels during installation.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of panel system to be performed in accordance with manufacturers' written instructions and warranty requirements.

1.11 COORDINATION

- A. Coordinate panel system installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.12 WARRANTY

- A. MCM Integrity Warranty: Manufacturer agrees to repair or replace components of MCM panels that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures including rupturing, cracking, or puncturing.
    - b. Deterioration of metals and other materials beyond normal weathering.
  - 2. Warranty Period: 10 years from date of Substantial Completion.
- B. Panel Finish Warranty: Manufacturer agrees to repair finish or replace MCM panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
    - a. Color fading more than 5 Hunter units when tested in accordance with ASTM D2244.
    - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
    - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
  - 2. Finish Warranty Period: 20 years from date of Substantial Completion.
- C. Panel System Warranty: System manufacturer's standard form in which manufacturer agrees to repair or replace components of Panel systems that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 35 25 "Delegated Design Requirements," to design panel system.
- B. Seismic Performance: No failure or deterioration of the system when laterally racked to 3/4 inch in both directions and repeated for three cycles in accordance with AAMA 501.4. System must pass the static water test as described in ASTM E331 following the seismic racking.
- C. Structural Performance: Panel systems to withstand the effects of the following loads, based on testing in accordance with ASTM E330/E330M:
  - 1. Wind Loads: As indicated on Drawings.
  - 2. Other Design Loads: As indicated on Drawings.
  - 3. Deflection Limits: For wind loads, no greater than 1/180 for perimeter, and 1/100 for center of panel, of the span.
- D. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E331 at the following test-pressure difference:
  - 1. Test-Pressure Difference: 6.24 lbf/sq. ft.
- E. Pressure Cycling: Provide PER system with a pass rating in accordance with AAMA 508.
  - 1. Lag between the cavity and the cyclic wind pressure to not exceed 0.08 seconds.
  - 2. Maximum differential between the cavity and the cyclic wind pressure to not exceed 50 percent of the maximum test pressure.
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

### 2.2 METAL COMPOSITE MATERIAL (MCM) WALL PANELS

- A. Metal Composite Material (MCM) Wall Panels: Provide MCM panels fabricated from two metal facings bonded to a solid, extruded thermoplastic core.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Alfrex, LLC. ACM, or comparable product by one of the following:
    - a. ALPOLIC
    - b. ALUCOBOND; 3A Composites USA, Inc
  - 2. Core: FR.
  - 3. Panel Thickness: 0.157 inch (4 mm).
  - 4. Bond Strength: 22.5 in-lb/in. when tested for bond integrity in accordance with ASTM D1781.
  - 5. Fire Performance: Flame-spread index less than 25 and smoke-developed index less than 450, in accordance with ASTM E84 or UL 723.
- B. MCM Panel Materials:

1. Aluminum-Faced Panels: ASTM B209/B209M alloy as standard with manufacturer, temper as required to suit finish and forming operations with 0.020-inch- thick, aluminum sheet facings.
  - a. Exterior Finish: Two-coat fluoropolymer.
    - 1) Color: Alfrex 2-coat Solids, "Sea Wolf" JY-6175.
- C. Aluminum Plate for Curved Panels: Tension-leveled, smooth aluminum sheet, ASTM B209/B209M alloy as standard with manufacturer, temper as required to suit finish and forming operations; 0.1875 inch thick.
  1. Exterior Finish: Two-coat fluoropolymer.
    - a. Color: Match MCM panel color and gloss.

## 2.3 PANEL SYSTEM

- A. PER Panel System: Provide factory-formed and -assembled, MCM- and aluminum-plate-faced panels formed into profile for PER system installation, drained at horizontal joints and at base of wall. Include attachment assembly components, panel stiffeners, and accessories required for compartmentalized and weathertight system.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Protean ACM-3000RS or comparable product by one of the following:
    - a. NorthClad Rainscreen Solutions.
    - b. Skyline Sheet Metal, Inc.
    - c. Keith Panel Systems.
  2. Panel Edge Return Fastening: Countersunk screw or rivet.
  3. Curved Panels: Same as MCM system with aluminum plate facing. Form curved panels with solid returns for top and bottom of panels. Exposed return kerf cut segments on curved panels is prohibited.
  4. Reveal, Joint Width: 3/8-inch.
    - a. Modify fastener face of clips as required for installation.
    - b. Offset cladding supports to offset edge clips to maintain minimum fasteners.
  5. Perimeter Closure: Close panel system abutting other materials with spline or color-match extrusion and fastener heads.
    - a. At bottom of panels with other finishes or openings below, retain with manufacturer's continuous J-clip.
  6. System Panel Depth: 1-1/2 inches.
    - a. Increase panel depth at curved assemblies plus 1/2-inch is acceptable.
- B. Attachment Assembly Components: Manufacturer's standard Clips formed from extruded aluminum.
  1. Parapet Clip: Manufacturer's standard parapet clip perpendicular to face and not extending beyond inside face of panel facing at system edge return.

- a. Systems without standard parapet clips: Modify standard panel clip as required to provide attachment as indicated. Supplement manufacturer's standard clips with aluminum angle and other aluminum extrusions to provide attachments indicated.
  - b. Provide aluminum clip profile required for attachments indicated without extending above top of panel elevation.
- C. Labeling: Comply with labeling requirement of applicable building code.

## 2.4 ACCESSORIES

- A. Subframing and Furring: Provided and installed under Section 07 05 43 "Cladding Support Systems."
- B. System Accessories: Provide components required for a complete, weathertight wall system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of MCM panels unless otherwise indicated.
  - 1. Weep Sponges: Manufacturer's standard weep sponge or composite material to absorb moisture in bottom of exposed panel returns with weep holes.
- C. Flashing and Trim: Provide flashing and trim formed from same material as MCM panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent MCM panels.
- D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Use gasketed or approved coated fasteners between dissimilar metals.
  - 1. Aluminum Panels: Use aluminum or stainless steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
  - 2. Provide exposed fasteners with heads matching color of MCM panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- E. Panel Sealants: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in MCM panels and remain weathertight; and as recommended in writing by MCM system manufacturer.
- F. Panel Adhesives for Facing Plywood: Adhesive recommended in writing by MCM panel manufacturer for adhering to plywood substrates.

## 2.5 FABRICATION

- A. Fabricate and finish MCM panels at the factory, by panel manufacturer's standard procedures and processes, as necessary to fulfill indicated panel performance requirements demonstrated by laboratory testing.
- B. Shop-fabricate panel systems and accessories by fabricator's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with requirements of MCM panel manufacturer, of indicated system profiles, and with dimensional and structural requirements.

1. Fabricate panels to dimensions indicated on Drawings based on an assumed design temperature of 70 deg F. Allow for ambient temperature range at time of fabrication.
2. Formed MCM panel lines, breaks, and angles to be sharp and straight, with surfaces free from warp or buckle.
3. Fabricate panels with sharply cut edges and no displacement of face sheet or protrusion of core.
4. Fabricate curved panels and curved components without distress on faces, without visible facets and with smooth finished surfaces.
5. Fabricated Panel Tolerances: Shop-fabricate panels to sizes and joint configurations indicated on Drawings.
  - a. Width: Plus or minus 0.079 inch at 70 deg F.
  - b. Length: Plus or minus 0.079 inch at 70 deg F.
  - c. Squareness: Plus or minus 0.079 inch at 70 deg F.
6. Fabricate panel system joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.
7. Attach routed-and-turned panel flanges to perimeter extrusions with manufacturer's standard fasteners and structural silicone adhesive.
  - a. Adhere MCM to plywood access panel backer provided under Section 06 40 00; fasten edges using fasteners matching those used in standard panels with sufficient length to penetrate wood substrate 3/4-inch excluding
  - b. Provide welded aluminum angle frame for attachment where screw lengths matching standard panels are unavailable. Coordinate with Section 06 40 00 for perimeter of backer rabbet for panel hardware.
8. Locate weep holes on bottom of returns with shop-formed holes without burrs and with clean edges, located on the ends and center of returns and spaced no more than 36-inches o.c. and between panel countersunk screws.
  - a. Install weep sponges over holes and retain sponges on vertical faces only.
9. Modify clip extrusions to permit for joint and panel configurations shown on Drawings.
- C. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's written instructions and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Comply with Section 07 62 00 "Sheet Metal Flashing and Trim."
  1. Provide flashing and trim materials from MCM supplier to match panels.
    - a. Material thickness determined by exposure. See Section 07 62 00.
  2. 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.
  3. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
  4. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams.
  5. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate sealant and to comply with SMACNA standards.



6. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
7. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal manufacturer.
  - a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal manufacturer for application, but not less than thickness of metal being secured.
8. Scupper Sleeve: Fabricate in aluminum of thickness and in profile indicated. Provide required anchorage and supports for attachment to panel system. Route and return faces of MCM prior to adhering sleeve to panel. Finish match panel facing with extrusion and plate metal finish.
  - a. Coordinate with existing scupper openings. Field verify and include locations on Shop Drawings.

## 2.6 FINISHES

- A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Coil-Coated Metal Finish:
  1. PVDF Fluoropolymer: AAMA 2605, two-coat fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- D. Extrusion and Plate Metal Finish: For curved panels and post-finished formed flashings and trim:
  1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  2. Product: Confirm with MCM manufacturer for color matching using equivalent of Sherwin Williams Fluoropon or PPG Duranar, to match MCM coil coating color.
  3. Application: Air-dry system by Crosslink Paints or MCM and its finish manufacturer's recommendation for matching MCM coil-coated panels.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, panel system supports, and other conditions affecting performance of the Work.

1. Examine wall framing to verify that girts, angles, channels, studs, and other structural panel system support members and anchorage have been installed within alignment tolerances required by panel system 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 panel system manufacturer.
  - a. Verify that air- or water-resistive barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Examine roughing-in for components and assemblies penetrating panel system to verify actual locations of penetrations relative to seam locations of panels before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION OF PANEL SYSTEM

- A. General: Install panel system in accordance with system manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Anchor panel system securely in place, with provisions for thermal and structural movement.
  1. Shim or otherwise plumb substrates receiving panel system.
  2. Flash and seal panel system at perimeter of all openings. Fasten with self-tapping screws.
  3. Install screw fasteners in predrilled holes.
  4. Locate and space fastenings in uniform vertical and horizontal alignment.
  5. Install flashing and trim as panel system work proceeds.
  6. Align bottoms of panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with concealed self-tapping screws.
  7. Provide weathertight escutcheons for all items penetrating system.
  8. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by panels system manufacturer.
  9. Attach panels to supports at locations, spacings, and with fasteners recommended by manufacturer to meet listed performance requirements.
- B. Attachment Assembly, General: Install attachment assembly required to support panels and to provide a complete weathertight wall system, including tracks, drainage channels, anchor channels, perimeter extrusions, and panel clips.
  1. Install subframing, furring, and other panel support members and anchorages in accordance with ASTM C955.
  2. Install support system at locations, at spacings, and with fasteners recommended by panel system manufacturer to meet listed performance requirements.
- C. PER Panel System: Install vertical tracks and horizontal tracks providing compartmentalization at locations, at spacings, and with fasteners recommended by system manufacturer.
  1. Attach panels by interlocking panel clips into channels in a sequential series.
  2. Insert matching panel spline into channels at joint reveal locations.
  3. At perimeter of panels, use splines not sealant for closing system.
    - a. Where sealant is required to maintain performance, install angles finished to match of MCM materials and back return leg set in 1/8-inch bed of sealant and conceal

sealant from view. Adjust adjacent details acceptable to Architect for providing closure and maintaining system performance.

- D. Install panels to allow individual system panels to "free float" and be installed and removed without disturbing adjacent system panels.
- E. Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
  - 1. Install accessory components required for a complete panel system assembly including trim, copings, corners, seam covers, flashings, sealants, fillers, closure strips, and similar items. Provide types indicated by panel system manufacturer.
- F. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.
  - 1. Install exposed flashing and trim that is without buckling and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install trim to fit substrates and to result in waterproof performance.
  - 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

### 3.3 INSTALLATION TOLERANCES

- A. Shim and align panel system within installed tolerance of 1/4 inch in 20 ft., non-accumulative, on level, plumb, and location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections:
  - 1. Water-Spray Test: After installation, test area of assembly as directed by Architect for water penetration in accordance with AAMA 501.2.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect completed panel system installation, including accessories.
- C. Panel system will be considered defective if it does not pass test and inspections.
- D. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.
- E. Prepare test and inspection reports.

3.5 CLEANING

- A. Remove temporary protective coverings and strippable films as panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, clean finished surfaces as recommended by panel manufacturer. Maintain in a clean condition during construction.
- B. After installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

3.6 PROTECTION

- A. Replace panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
  - 1. Architect to determine acceptance of repairs.

END OF SECTION