Division 07 95 00
JointMaster Master Specification

***Specifier Note: Specification provided by:**
JointMaster, a Division of Inpro Corporation
S80 W18766 Apollo Dr. Muskego WI 52150
Inprocorp.com 800.222.5556

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY *Specifier Note: Delete items below in red not applicable to this project.

A. Section includes:
B. Scope of Work
   1. Interior expansion control systems
   2. Exterior expansion control systems
   3. Parking, Open-Air structure and Plaza expansion joint systems.
   4. Expansion Joint accessories including provisions for fire rated assemblies, moisture barriers, waterproofing, acoustic and thermal measures.
C. Provide all labor, materials and services to perform operations in connection with furnishing, delivery, and installation of work related to this section.

1.03 RELATED WORK

A. Related work includes but is not limited to:
   1. Cast-In-Place Concrete: Section 03300.
   2. Unit Masonry: Section 04810.
   3. Structural Steel: Section 05120.
   4. Light Gage Metal Framing: Section 05400.
   5. Roofing and Waterproofing: Section 07500
   6. Roof Expansion Assemblies - 07716
   7. Sheet Metal Flashing and Trim: Section 07620.
   8. Joint Sealants as Weather Seals: Section 07900
   9. Cement Plaster: Section 09210.
   10. Gypsum Wallboard: Section 09260.

1.04 REFERENCES

A. Work shall be performed following applicable Local, State, and Federal codes and regulations.
B. Publications listed herein are part of this specification. See below for standards where applicable to the product listed:
   1. American Society for Testing and Materials (ASTM):
      a. ASTM B221, “Standard Specifications for Aluminum and Aluminum-Alloy Extrusions.”
      b. ASTM B209, “Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.
      c. ASTM E1399 “Cyclic Movement and Measuring of Minimum/Maximum Joint Widths of Architectural Joint Systems.”

d. ANSI/U.L. No. 263, UL2079, ULCS115, EN1366-4 Fire Rated Testing fort full rated period. Underwriter's Laboratories shall classify adjacent substrate assemblies.
e. ASTM E1612, Standard Specification for Preformed Architectural Compression Seals for Buildings and Parking Structures.
f. ASTM C1363, U & R Value Thermal Performance Testing

2. American National Standards Institute (ANSI):
   a. ANSI A137.1/A326.3 (2018), "Method for Measuring Dynamic Coefficient of Friction on Hard Flooring Materials"

1.05 DEFINITIONS

A. Product Movement capabilities
   1. Product operating range defined as a percentage of the nominal joint width.
   2. Industry standard requirements: 25%+- operating range for Thermal conditions. 50%+- operating range for Seismic and Windsway conditions.
   3. 100%+- operating range for Seismic and Windsway conditions with Lateral Shear capable systems that allow for movement parallel to joint orientation.

B. Product "Load" descriptions:
   1. Standard Loads: common applications with high volume pedestrian crossing. Applicable for typical office settings or other spaces where occasional rubber wheeled traffic (i.e.- mail carts, trolleys, light weight cleaning equipment and luggage) will be encountered. 500 lb. [230 kg] maximum.
   2. Moderate Loads: suggests applications where occasional heavier maintenance equipment with soft rubber tires (such as gurneys, light duty scissor lifts, motorized cleaning equipment) would be added to the Standard traffic definition. The systems in this category are comprised of heavier aluminum extrusions and thicker walled extruded rubber seals. 1000 lb [450 kg] maximum.
   3. Heavy Duty Concentrated Loads: reserved for project conditions where heavy loads (i.e.- vehicles, mobile medical equipment, coin carts, materials handling equipment) are common. Capable of multi-directional movement and resistance to recurring lateral impact forces. Typical 2000 lb. [910 kg] maximum. *9000 lb. [4080 kg] (*Specific models only).

1.06 SYSTEM DESCRIPTION

A. Joint coverplate systems shall permit daily thermal expansion and contraction of building elements, minor foundation settlement, and common windsway movements of the structure without disengagement.
   1. Joint system details shall clearly indicate X-axis joint movement capabilities (horizontal contraction/ expansion). Y-axis joint movement (in-plane shear), and Z-axis movement (vertical shear) may be requested of the Manufacturer if applicable.
   2. Movement capabilities shall be clearly defined as a percentage of the nominal joint width or with distinct dimensions defined on product details.

B. Joint Systems shall allow for seismic movement (if applicable), matching requirements as defined within the Project Specific Structural Specifications.

C. Fire Rated Assemblies shall be tested by registered Third Party Testing Agencies in accordance with UL2079, ULC S115, EN1366-4 classified systems. Expansion joint assembly fire rating shall match or exceed the fire rating of adjacent construction.

1.07 QUALITY ASSURANCE

A. Architectural Joint Cover Manufacturer: Furnish horizontal and vertical systems from a Manufacturer with a minimum of ten (10) years of experience in the design, engineering and fabrication of expansion joint systems.
B. Fire Rated Assembly Manufacturer: Furnish horizontal and vertical rated systems from a single Manufacturer to ensure compatibility. Intersection of/ or transition between dissimilar systems is not allowed unless reviewed and approved by AHJ.
C. Installer: Contractor with not less than three (3) years of successful experience in the installation of systems similar to those required by Project.

1.08 ACTION SUBMITTALS

A. Manufacturer's Specifications, technical data, installation instructions, and detail drawings for each proposed system.
B. Listings/ Certifications of all Fire Rated Assemblies secured through Registered Third Party Testing Agency.
C. Representative sample of specified systems 4" [100mm] minimum length (if required by Project Architect)
D. UL Environmental GreenGuard Gold Certification required for any Synthetic Rubber seals to be utilized in project. Ensure low VOC readings are reported by Third Party Registered Testing Agency for building projects with Health Care or Educational intent.

1.09 DELIVERY AND STORAGE

A. Manufacturer to provide protective film on all exposed cover plate components.
B. Deliver joint systems to jobsite in new, clean, unopened cartons or crates of sufficient size and strength to protect materials during transit.
C. Inspect materials upon arrival. Store components in original containers in a clean, dry location. Ensure temperature or moisture sensitive components are stored in a tempered location.
D. Contractor to provide temporary protective covers on all installed finished surfaces. Protection is required to guard against both surface abrasions as well as overloading of horizontal deck components by construction traffic.

1.10 SEQUENCING

A. Submittals shall be completed and remitted to the Project Architect within 4 weeks after award of subcontract.
B. Subcontract for the work of this section shall be planned to allow sufficient time for Manufacturer's production and delivery scheduling.

1.11 WARRANTY

A. Standard JointMaster/InPro Corporation limited warranty against material and manufacturing defects for a period of not less than five (5) years when installed in accordance with Manufacturer's recommendations.

PART 2 – PRODUCTS

2.01 MANUFACTURER

A. Manufacturer must be capable of providing a full range Interior and Exterior Architectural Joint Cover systems as well as a full complement of expansion joint accessories.
B. Manufacturer must be capable of providing project specific details accurate to the building construction type.
C. Substitutions: To be reviewed by Architect of Record
D. Requests for substitutions will be considered in accordance Section 01 60 00

2.02 MATERIALS

A. Aluminum: Alloy types of 6061-T6, 6063-T6, 6005A, or 5052-H32 sheet goods
    1. Floor systems: Mill finish standard
    2. Walls and Ceilings: Standard Class II Clear Anodized [Color Anodized, Kynar Painted, Custom Color Painted optional]
B. Stainless Steel: Alloy Type 304 for plates and strips.
    1. Brushed #4 surface finish standard
C. Elastomeric Seals: Synthetic rubber seals comprised of a dual extrusion Santoprene rubber for heat welding of all transitions and seams for a monolithic, weathertight installation. EPDM and Neoprene substitutions are not allowed due to their lack of ability to meet this specific requirement.
    1. All Santoprene seals must be certified as low VOC as certified by UL Environmental GreenGuard Gold Certification
D. Horizontal and Vertical Moisture Barrier (optional accessory): Min. 45 mil thick fabric reinforced EPDM with optional watertight drain assemblies.
E. Horizontal and Vertical Insulated Moisture Barrier (optional accessory):
    1. Min. R Value of 15 as tested through ASTM 1363 by Certified Third Party Testing
    2. Must meet ASTM E1399 Cyclic movement requirements matching movement requirements specific to project.

2.03.01 INTERIOR FLOOR JOINT SYSTEMS

***Specifier Note: Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.**

A. Single Seal joint systems
    1. Recessed and Surface Mount systems
    2. Joint range applications 1-3” [25-75mm]
    3. Joint operating range 25%+- of total nominal joint width
    4. New and existing construction applications
    5. Santoprene Seal traits:
        a. Achieves UL Greenguard Gold Certification for low VOC offgassing
        b. Dual durometer extruded Santoprene with Shore Hardness of 60 Shore A and 40 Shore D to ensure longevity of installation. Single durometer seals shall not be allowed.
        c. Flat seal must maintain inherent dimensional stability and include structural spine inserts (where applicable) allowing for additional load resistance.
        d. Seals must be heat welded at butt seams and changes in direction

6. Frames adaptable to multiple floor finishes
7. Addresses Standard Loading conditions
8. Recessed/ Flush floor system 101 Series
9. Surface mounted floor system 104, 105, 106 Series
10. New to Existing floor system 107, 108, 109, 120, 141 Series

B. Dual Seal and Coverplate Joint Systems
1. Recessed Mounting system
2. Standard Joint range applications 2-12” [50-300mm]
3. Joint operating range 50%+- (100%) of total nominal joint width
4. Specific systems must be capable of flooring infill thickness of 3/8” [10mm]
5. Concealed hardware configuration
6. Santoprene Seal traits:
    a. Achieves UL Greenguard Gold Certification for low VOC offgassing
    b. Dual durometer extruded Santoprene with Shore Hardness of 60 Shore A and 40 Shore D to ensure longevity of installation. Single durometer seals shall not be allowed.
    c. Flat seal must maintain inherent dimensional stability and include structural spine inserts (where applicable) allowing for additional load resistance.
7. Addresses Standard Loading conditions
8. Recessed/ Flush floor system 221, 223 Series

C. Glide Plate Joint Systems
1. Recessed Mounting System
2. Joint range applications 1-6” [25-150mm]
3. Joint operating range 50%+- of total nominal joint width
4. Adaptable to multiple floor finishes
5. Coverplate and frames must be segregated by high durometer seals to eliminate system rattle.
6. Concealed hardware configuration
7. Addresses Standard Loading conditions
8. Recessed/ Flush floor system 300 Series
9. New to Existing floor system 320 Series

D. General Purpose/ Centerbar-Driven Joint Systems
1. Recessed and Surface Mounting systems
2. Standard Joint range applications 2-18” [50-450mm]
3. Joint operating range 50%+- of total nominal joint width. Increased movement range available upon request.
4. Specific systems must be capable of flooring infill thickness of 3/8” [10mm]
5. System shall employ use of steel centerbar components at 18” [450mm] on center maximum spacing. Centerbar functions to provide positive pressure on coverplate and recenters system following cyclic movement.
6. Smooth transition system options must be offered to avoid jarring of rolling equipment loads transitioning over expansion joint. .
7. Industrial system options consisting of extruded or fabricated wings recessed into the deck matching the thickness of the centerplate. Centerplate profile with beveled edges of an angle ensuring ADA compliancy.
8. Addresses Moderate Loading conditions.
9. Recessed/ Flush floor system 421, 426, 428 Series
10. Recessed / Flush floor smooth-faced systems 432, 432R Series

E. Inpro 500 Series grouping of coverplate options offering flooring infill, heavy duty point loading, and moderate to extremely wide expansion joints Narrow Sightline/ Infillable Finishes Pan Coverplate Systems
    1. Recessed Mounting system applicable to Base-Isolated structures, New-to-Existing, and or Recessed/ Flush coverplate systems
    2. Standard Joint range applications 2-36” [50-900mm]
    3. Joint operating range 50%+- of total nominal joint width. Increased movement range To 100%+- available upon request.
    4. Centerplate pan profile depth equal to a minimum 1¾” [44mm] standard to allow for deep floor finishes.
    5. Integral flat Santoprene seals shall be offered to address thermal concerns and prevent dirt and water traps without the use of sealants. If desired, Architect may choose optional use of backer rod and polyurethane sealants in lieu of seals.
    6. Standard product addresses Moderate Loading conditions with the option to alter profile for Heavy Concentrated Loads.
    7. Inpro 501, 501R, 502 Series Floor Coverplate Pans

F. Heavy Duty Joint Systems
    1. Recessed Mounting system
    2. Standard Joint range applications 2-36” [50-900mm] *Extents vary per system
    3. Joint operating range 50%+- of total nominal joint width. Increased movement range available upon request.
    4. Addresses Heavy Duty Loading conditions.
    5. Interior Mass Transit Floor Heavy Duty joint cover. Interlocking cover assembly designed for low maintenance for high volume pedestrian and heavy, frequent rolling loads. Applicable to mall, airport, hospital project applications.
        a. Nominal joint width 1-4” [25-100mm]
        b. 733 and 733R Series
    6. Smooth-faced, heavy duty Datacenter Floor Coverplate System- Zero-Bump system option to avoid jarring of any rolling loads transitioning over expansion joint. 1” [25mm] deep frames to avoid rebar impact.
        a. Nominal joint width 2-9” [50-225mm]
        b. 787NS Series
    7. Material-handling Industrial Cover system- Consists of crowned heavy duty plates for interior or exterior applications. High durometer traffic pads perform impact and vibration dampening.
        a. Nominal joint width 4-32” [100-800mm]
        b. 797 Series Floor cover

G. Standard Surface Mount Coverplate Systems
    1. Surface mounted profiles mechanically fastened to a single side of the expansion joint opening.
    2. Standard Nominal Joint applications 2-12” [50-300mm]
    3. Joint operating range 50%+- of total nominal joint width
    4. New and existing construction applications.
    5. Addresses Standard and Moderate Loading conditions
    6. Surface Mount floor systems 801, 806, 807, 808 Series

2.03.02 INTERIOR WALL AND CEILING JOINT SYSTEMS

***Specifier Note: Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.**

A. Single Flat Seal joint systems
    1. Recessed and Surface Mount framing systems
    2. Joint range applications 1-3” [25-75mm]
    3. Joint operating range 25%+- of total nominal joint width
    4. New and existing construction applications
    5. Santoprene Seal traits:
        a. Achieves UL Greenguard Gold Certification for low VOC offgassing
        b. Dual durometer extruded Santoprene with Shore Hardness of 60 Shore A and 40 Shore D to ensure longevity of installation. Single durometer seals shall not be allowed.
        c. Flat seal must maintain inherent dimensional stability and include structural spine inserts (where applicable) allowing for additional load resistance.
        d. Seals must be heat welded at butt seams and changes in direction
    6. Recessed/ Flush wall/ ceiling system 101, 104, 112 Series
    7. Surface Mount wall/ ceiling system 113, 116, 118 Series

B. Pleated Seal joint systems
    1. Recessed and Surface Mount framing systems
    2. Joint range applications 2-24” [50-600mm]
    3. Joint operating range 50%+- of total nominal joint width
    4. New construction applications
    5. Santoprene Seal traits:
        a. Achieves UL Greenguard Gold Certification for low VOC offgassing
        b. Dual durometer extruded Santoprene with Shore Hardness of 75 to ensure longevity of installation.
        c. Flat seal profile must maintain inherent dimensional stability, linear lines and include allowances for alignment pins
        d. Seals must be heat welded at butt seams and changes in direction
    6. Recessed/ Flush wall/ ceiling system 611, 612, 115 Series
    7. Surface Mount wall/ ceiling system 114 Series

C. Dual Seal with Coverplate Joint Systems
    1. Recessed Mount system
    2. Standard Joint range applications 2-18” [50-450mm]
    3. Joint operating range 50%+- of total nominal joint width
    4. Specific systems must be capable of gypsum board infill thickness of 3/8” [10mm]
    5. Concealed hardware configuration
    6. Santoprene Seal traits:
        a. Achieves UL Greenguard Gold Certification for low VOC offgassing
        b. Dual durometer extruded Santoprene with Shore Hardness of 60 Shore A and 40 Shore D to ensure longevity of installation. Single durometer seals shall not be allowed.
        c. Flat seal must maintain inherent dimensional stability and include structural spine inserts (where applicable) allowing for additional load resistance.
        d. Seals must be heat welded at butt seams and changes in direction
    8. Clear Anodized Class II Anodized Finish provided when applicable

9. Recessed/ Flush wall/ ceiling system 221, 223 Series

D. Glide Plate Joint Systems
   1. Recessed and/or Surface Mounted System
   2. Joint range applications 1-36” [25-900mm] *Extents vary per system
   3. Joint operating range 50%+- of total nominal joint width (100%+- available by request on select systems)
   4. Adaptable to multiple wall finishes
   5. Concealed hardware configuration
   6. Recessed/ Flush Glide Plate system with clear anodized Class II Finish. Coverplate and frames must be segregated by high durometer seals to eliminate system rattle.
      a. Nominal joint width 2-12” [50-300mm]
      b. 300 Series wall/ ceiling system
   7. Inpro 350 Series- grouping of aesthetic and functional Interior Wall system covers to address dynamic Seismic and Lateral Shear protection over moderate to extremely wide expansion joints
      a. Seismic cover installed using magnetic security system allowing for generous daily thermal joint movement without disengagement. System to absorb seismic events to allow full compression, expansion and lateral shearing of joint (in addition to lateral shear cycles) to 100%+- joint movement. Coverplates utilize stainless arrest cables ensuring against impeding egress routes.
      b. Nominal joint width 6-36” [150-900mm]
      c. 353 Series Recessed/ Flush floor/ wall pan coverplate allowing for infill of project wall finishes.
         1. Inpro 355 Series Surface floor/ wall mounted system option
      d. 357C Series Recessed/ Flush floor/ wall coverplate pan system utilizing Composite Metal Panel system providing Fire, Impact and Dent resistance with hidden hardware
         1. Inpro 359C Surface mounted system floor/ wall option

E. General Purpose/ Centerbar-Driven Joint Systems
   1. Recessed and Surface Mounting systems
   2. Standard Joint range applications 2-24” [50-600mm]
   3. Joint operating range 50%+- (100%) of total nominal joint width.
   4. Increased movement range available upon request.
   5. System shall employ use of steel centerbar components at 18” [450mm] on center maximum spacing. Centerbar functions to provide positive pressure on coverplate and recenters system following cyclic movement.
   6. Clear Anodized Class II Anodized Finish
   7. Surface Mount 491 wall/ ceiling Series

F. Standard Surface Mount Coverplate
   1. Surface mounted profiles mechanically fastened to a single side of the expansion joint opening.
   2. Standard Nominal Joint applications 2-6” [50-150mm]
   3. Joint operating range 50%+- (100%) of total nominal joint width
   4. New and existing construction applications.
   5. Clear Anodized Class II Anodized Finish
   6. Surface Mount system 801, 811 wall/ ceiling Series

G. Vertical Foam- precompressed with water resistant Silicone Face:
   1. Standard Joint range applications 2-12” [50-300mm]

2. Joint operating range 50%+- of total nominal joint width
3. Pre-compressed open cell polyurethane foam impregnated with a polymer sealing compound to optimize hydrophobic qualities. Monolithic foam manufacturing process ensures against multiple issues surrounding laminated systems on the market.
4. High density (1.5lb/sqft min.) with a fully cured, modified silicone rubber top coat, factory applied then provided in a pre-compressed state silicone in (34) standard color options
5. Bonding Adhesives and/or hydrophobic epoxy adhesive that is compatible with concrete, steel or wood as recommended by the manufacturer.
6. 1200 foam wall/ ceiling Series

2.03.03 EXTERIOR HORIZONTAL DECK JOINT SYSTEMS

***Specifier Note: Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.**

A. Heavy Duty Joint Deck Systems
   1. Recessed/ flush Mounted systems
   2. Standard Joint range applications 2-24" [50-600mm]
   3. Joint operating range 50%+- of total nominal joint width. Increased movement range available upon request.
   4. For Waterproofing measures - reference range of accessory product options under 2.03.06.
   5. Passenger Vehicle-capable Coverplate System- option to avoid jarring of any rolling loads transitioning over expansion joint. Achieved with tapered center plate profile and sloped frames to achieve a vertical change-in-plane not to exceed 3/16" [4.5 mm] (or 10% slope) at any point.
      a. Integral sound dampening seals.
      b. Serration patterns on surface to address slip resistance
      c. Employs use of heavy duty stainless steel centerbar components at 18" [450mm] on center maximum spacing.
      a. Nominal joint width 2-12" [50-300mm]
      b. 787 Vehicular capable 787 Series
   6. Material-handling Industrial Cover system- - Consists of crowned heavy duty aluminum or stainless steel for exterior applications.
      a. High durometer traffic pads perform impact and vibration dampening
      b. Nominal joint width 4-32" [100-800mm]
      c. 797 Series 100%+- mvmnt. Heavy duty coverplate
      c. 797L Series 100%+- mvmnt. Lateral shear, heavy duty hinged coverplate

B. Compression Seal Waterproof Systems
   1. Recessed Mounting systems
   2. Standard Joint range applications 1-4" [25-100mm]
   3. Joint operating range 50%+- of total nominal joint width.
   4. Visible face holds linear lines during expansion and compression. Webbing profile to provide a uniform horizontal and vertical load resistance. Material must be heat weldable allowing for watertight seams and transitions. Highly resistant to UV degradation, extreme temperatures, and chemicals.
   5. Epoxied Waterproof Rubber Seal Series- suitable for heavy pedestrian and moderate vehicle loadings

a. !nstalled with two-part hydrophobic epoxy. Profile must incorporate sidewall ribs to pool epoxy and add surface area for aggressive adhesion to deck.
b. AR Epoxy Seal Waterproofing system

6. Winged Seal Series- suitable for heavy duty and vehicular loadings
   a. Installed with tack coat and elastomeric header.
   b. Profile must incorporate dual barbed wings and header keyway for secure placement of system utilizing elastomeric nosing
   c. CR Winged Seal Waterproofing System
7. Splitslab Waterproofing Series- For use in conjunction with structural deck waterproofing system tie-in at expansion joint covers
   a. Variable height upstand heights available for a wide range of topping slab thicknesses -or- structural angle mount options to maximum project specific capability
   b. . Aluminum or Stainless Steel cover plates can be added for high loads or pedestrian foot traffic.
   c. Alternate counterflashing types available to coordinate with fluid-applied or single-ply membrane deck waterproofing systems
   d. SR Splitslab Waterproofing Series

2.03.04 EXTERIOR VERTICAL WALL JOINT SYSTEMS

***Specifier Note: Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.**

A. Exterior Rubber Pleated Seal system
   1. Standard Nominal Joint applications 2-24” [50-600mm]
   2. Joint operating range 50%+- of total nominal joint width
   3. Integral flexible moisture barrier membrane. 2 ply reinforced EPDM 45 mil thick membrane with nylon mesh reinforcing element
   4. New and existing construction applications.
   5. Pleated Santoprene Seal traits:
      a. Overall seal bellows depth requires 5/8” [15.875 mm]. in order to maintain inherent stability and linear lines after installation
      b. Seal Wall thickness not less than 1/8” [3.175 mm] for high abrasion resistance.
      c. Seal durometer of 70 shore A
      d. No EPDM or Neoprene substitutions allowed
      e. Manufacturer must carry a color range of a minimum of (6) six standard color options. Custom seal colors must be available upon request.
      f. UL Greenguard Gold certification for little to no VOC offgassing
   6. Recessed/ Flush system 615, 616 Series

B. Exterior Metal Coverplate system
   1. Recessed and Surface Mount frame systems
   2. Standard Joint range applications 2-24” [50-600mm]
   3. Integral flexible moisture barrier membrane. Reinforced EPDM 45 mil thk. membrane with nylon reinforcement
   4. New and existing construction applications
   5. Baseboot and drain fittings (optional) to discharge water intrusion to exterior.
   6. Recessed/ Flush system 300E
   7. Surface Mount system 300E, 491E, 651 Series

C. Inpro 650 Series – grouping of aesthetic and highly functional Exterior Coverplate options for use in Moderate to Extremely wide seismic and lateral shear required exterior applications

1. Flush Mount system with Seismic-capable 100%+- compression and expansion cycling ability and 100%+- lateral shear capable
2. Standard Joint range applications 2-36" [50-900mm]
3. Preassembled panel system on heavy duty barrel hinges. System secured in position with high strength neodymium magnets with corrosion resistant ceramic coating allowing for generous daily windsway and seasonal thermal movement prior to system activation. Use of centering/tensioning bar not permitted as they limit lateral movement.
4. Waterproofing accessories specified separately.
5. Composite Metal Panel Faced Vertical Coverplate Assembly.
    a. Provide with integral IBC-listed Fire and Impact-resistant Composite Metal Panel cladding.
    b. Finishes: Specified with AAMA 2605 Certified Fluoropolymer Resin paint finish (PVDF) available in a range of standard colors providing a 20 yr.finish Warranty. Clear anodized Class I finish standard all aluminum profiles.
    c. Code Evaluation Reports: ASTM E84/ ASTM E119/ NFPA 285/ ICC ES ESR-2653/ City of Los Angeles Report 26008/ Miami Dade Notice of Acceptance 14-0610/ ULC S134
    d. Corresponding roof cover provides sightline alignment and full compliment of pre- designed transition caps
    e. 650C Exterior Composite Panel Seismic Series
6. Infillable Finishes Pan Coverplate Assembly.
    a. Assembly capable of receiving a wide range of building finishes. Maximum infill weight 8 lbs/sqft [40 kg/sqM]. Average depth of pan 3/4" (19mm).
    b. Finishes: Clear anodized Class I finish standard all aluminum profiles.
    c. Code Evaluation Reports: ASTM E84/ ASTM E119
    d. Corresponding roof cover provides sightline alignment and full compliment of pre- designed transition caps
    e. 650 Exterior Pan Seismic Series

D. Vertical Foam- precompressed with water resistant Silicone Face:

1. Standard Joint range applications 2-12" [50-300mm]
2. Joint operating range 50%+- of total nominal joint width
3. Pre-compressed open cell polyurethane foam impregnated with a polymer sealing compound to optimize hydrophobic qualities. Monolithic foam manufacturing process ensures against multiple issues surrounding laminated systems on the market.
4. High density (1.5lb/sqft min.) with a fully cured, modified silicone rubber top coat, factory applied then provided in a pre-compressed state silicone in (34) standard color options
5. Bonding Adhesives and/or hydrophobic epoxy adhesive that is compatible with concrete, steel or wood as recommended by the manufacturer.
6. 1200 foam wall/ ceiling Series

E. Exterior Wall Joint Bellows System

1. Standard Joint range applications 2-8" [50-200mm]
2. Joint operating range 50%+- of total nominal joint width
3. Flexible roofing membrane affixed to flanges, adhered and mechanically fastened to substrate'
    a. Bellows: 0.060 in. (1.5 mm) thick non-reinforced EPDM, TPO, or PVC bellows

adhered and mechanically combined to metal flanges by bifurcation process.
b. Flange Metal: Hot dipped Galvanized, Stainless Steel, Aluminum, or Copper or flexible membrane for heatwelded seams.
c. Provide matching factory-fabricated corners, transitions, intersections and terminations.
d. 676 Series

2.03.05 EXTERIOR ROOF JOINT SYSTEMS

*Specifier Note: Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.

A. Roof Expansion Joint Bellows System
1. Standard Joint range applications 2-18" [50-450mm]
2. Joint operating range 50%+- of total nominal joint width
3. Flexible roofing membrane, supported by a closed cell foam sheetgood to form positive domed bellows. Afixed to flanges, adhered and mechanically fastened to substrate
a. Bellows: 0.060 in. (1.5 mm) thick non-reinforced EPDM, TPO, or PVC bellows adhered and mechanically combined to metal flanges by bifurcation process.
b. Bellow Supports: Closed cell foam, 3⁄8 in. (9.5 mm) minimum thickness.
c. Flange Metal: Hot dipped Galvanized, Stainless Steel, Aluminum, or Copper or flexible membrane for heatwelded seams.
d. Provide matching factory-fabricated corners, transitions, intersections and terminations.
4. 672, 674 Series

B. Metal Coverplate Roofing system
1. Standard Joint range applications 2-24" [50-600mm]
2. Curb mounted cover, seismic-capable movement capability
3. Joint operating range 50%+- of total nominal joint width
4. Integral flexible moisture barrier membrane available for all models. Reinforced EPDM 45 mil thk membrane with nylon reinforcement standard. PVC and TPO options also exist.
5. New and existing construction applications
6. Baseboot, transition covers and drain fittings (optional) to discharge water intrusion to exterior.
7. Curb mounted 651, 661 Series

C. Inpro 650 Series – grouping of aesthetic and highly functional Exterior Coverplate options for use in Moderate to Extremely wide seismic and lateral shear required exterior applications
1. Roof curb mount with Seismic-capable 100%+- compression and expansion cycling ability and 100%+- lateral shear capable
2. Standard Joint range applications 2-36" [50-900mm]
3. Preassembled panel system on dual hinges for maximum X, Y, Z movement values allowing for generous daily windsway and seasonal thermal movement prior to system activation. Use of centering/tensioning bar not permitted as they limit lateral movement.
4. Waterproofing accessories specified separately.
5. Compact, low profile design without the use of outriggers to facilitate Facility Maintenance circulation of roof. Collapsible externsion arms ensure against movement conflict with adjacent structures, parapets, RTUs, etc.

6. Provide with integral IBC-listed Fire and Impact-resistant Composite Metal Panel cladding.
7. Finishes: Specified with AAMA 2605 Certified Fluoropolymer Resin paint finish (PVDF) available in a range of standard colors providing a 20 yr.finish Warranty. Clear anodized Class I finish standard all aluminum profiles.
8. Code Evaluation Reports: ASTM E84/ ASTM E119/ NFPA 285/ ICC ES ESR-2653/ City of Los Angeles Report 26008/ Miami Dade Notice of Acceptance 14-0610/ ULC S134
9. Corresponding roof cover provides sightline alignment and full compliment of pre- designed transition caps

10.650C Exterior Composite Panel Roof Series

2.03.06 ACCESSORY SYSTEMS

Specifier Note:** **Delete items below in red not required. Reference online website resources for Features and Benefits of each proposed system to determine compatibility with your project specific needs.

A. Fire Rated Barriers and Blanket Systems
   1. Rated Fire Barrier system options ranging from 1-4 Hour Rating requirements with options meeting the following requirements:
   2. Tested by Accredited Third Party Architectural Testing and Listing Agency in accordance with UL 2079, ULC-S115, and EN1366 at its full rated period.
   3. Product selection options:
      a. 2 and 3 hour Mineral Wool and Firecaulk Fire Barrier System meeting 20%+- movement for Thermal applications on joints of 1- 3" [25-75mm] nominal width.
         1. 925 Fire rated Mineral wool and sealant 1-3" [25-75mm]

      b. 1, 2 and 3 hour Silicone-faced pre-compressed Fire Rated Foam for movement conditions up to 50%+- for seismic applications on joints. 26 standard colors available. Pre-formed, open cell, crosslinked EVA copolymer polyethylene material. Low density, impermeable, ethylene vinyl acetate or nitrogen blown polyethylene foam installed in compression. Fastened with PSA and/or 2-part epoxy
         1. 995 Fire rated Foam Horizontal applications 1-5" [25-235mm]
         2. 995 Fire rated Foam Vertical applications 1-6" [25-150mm]

      c. 2 hour Fire Rated Blanket systems for small joint openings with 50%+- movement for seismic applications on joints 2- 4" [50-100mm] nominal width. Pre-attached flanges and male/female seam configuration. Patented compression installation spring system for non-invasive installation. Prefabricated male/ female seam configuration required for consistent fire protection. No mechanical fastening or continuous firecaulk required.
         1. Fireline F140 Horizontal applications 2-4" [50-100mm]

      d. 2 and 3 hour Fire Blanket systems 50 or 80%+- movement capability up to and including 36" (900mm) maximum joint openings. Male/ female seam configuration and preattached mounting flanges. Multiple flange types are available to meet to be top mounted, inside mounted or bottom mounting conditions of joint installations.
         1. Fireline F520 Horizontal applications 6-24" [150-600mm]
         2. Fireline F520 Vertical applications 6-24" [150-600mm]

g. 2 and 3 hour Fire Blanket systems 50 or 80%+- movement capability up to and including 36" (900mm) maximum joint openings. Integral high temperature waterproofing membrane with tested drain penetration (optional). Male/ female seam configuration and preattached mounting flanges. Multiple flange types are available to meet to be top mounted, inside mounted or bottom mounting conditions of joint installations.

1. Fireline Waterguard- Horizontal applications 6-24" [150-600mm]

B. Moisture Barrier for vertical and horizontal applications

1. Reinforced EPDM 45 mil thk membrane with nylon mesh reinforcement. Optional drain fittings available in .375" and 1" inside diameter. On center spacing of drains to be determined by Plumbing Engineer of Record. Seams and directional transitions designed to ensure watertight seal and positive condensation drainage.
   a. Inpro RVB Series- contact Rep. for appropriate system to align with project specific movement needs

C. Insulated Thermal Moisture Barrier for vertical and horizontal applications

1. Reinforced EPDM 45 mil thk membranes sandwiching commercial grade batt insulation adhered and pinned together to resist slump and cyclic movement (movement must match the capabilities of the specified coverplate systems). Maintains R-value equivalent to the exterior and roof assemblies on project. Seams and directional transitions designed to ensure watertight seal and positive condensation drainage.
2. Submittal to include: ASTM test reports created by a certified third party Architectural product testing agency.
   a. PRODUCT — TEST METHOD

PRODUCT	TEST METHOD	
Insulated Moisture Barrier	ASTM C1363	Thermal Performance Test
	ASTM E283	Pressure Test for Rate of Air Leakage
	ASTM E330	Dynamic Structural Performance Test
	ASTM E331	Static Water Penetration Test

   b.. Inpro IVB Series

D. Waterproof Foam Seals

1. Closed Cell Waterproof Foam
   a. Submittal to include: ASTM test reports created by a certified Third Party Architectural product testing agency.
   b. PRODUCT — TEST METHOD

PRODUCT	TEST METHOD	
Closed Cell Foam	ASTM E283	Pressure Test for Rate of Air Leakage
	ASTM E330	Dynamic Structural Performance Test
	ASTM E331	Static Water Penetration Test

   c. Field heatwelded seams and transitions. Glues and adhesives not allowed.
   d. 1100 Series Closed cell Foams- high heat or elevated architectural applications 50%+- movement capability
   e. 1150 Series Closed cell Foams – contact with grade or chemical laiden environments 25%+- movement capability
2. Vertical Foam- precompressed with water resistant Silicone Face:
   a. Standard Joint range applications 2-12" [50-300mm]
   2. Joint operating range 50%+- of total nominal joint width

3. Pre-compressed open cell polyurethane foam impregnated with a polymer sealing compound to optimize hydrophobic qualities. Monolithic foam manufacturing process ensures against multiple issues surrounding laminated systems on the market.
4. High density (1.5lb/sqft min.) with a fully cured, modified silicone rubber top coat, factory applied then provided in a pre-compressed state silicone in (34) standard color options
5. Bonding Adhesives and/or hydrophobic epoxy adhesive that is compatible with concrete, steel or wood as recommended by the manufacturer.
6. 1200 foam wall/ ceiling Series

2.04 FABRICATION

A. Field assemble components provided in standard lengths with pre-packaged fasteners and accessories whenever possible.
B. Fabricate special transitions and corner fittings as required. Miter and heat weld elastomeric seals for monolithic splices and transitions.

PART 3 – EXECUTION

3.01 INSPECTION

A. Prior to starting work, verify that structural gap and blockout dimensions are in conformance with manufacturer's submittal data. Do not begin work until all unsatisfactory substrate conditions are resolved. See manufacturer for recommended tolerances.
B. Carefully inspect installed work of other Trades and verify that such work is complete to allow the work of this section to commence.
C. Schedule inspection of all Waterproofing measures and Fire Rated life safety product prior to installation of coverplate systems –or- provide allowance for removal of 10% of coverplate systems for inspection before final acceptance.

3.02 INSTALLATION

A. Joint systems: Install in accordance with manufacturer's instructions.
B. Align work plumb, level and flush with adjacent surfaces. Allowances should be made where actual structural gap at time of installation varies from nominal design gap. No shimming of frames is permitted.
C. Coordinate with work of other Sections.
D. If concrete blockouts (rebates) are required, ensure continuous support equal to surrounding substrate structural values.
E. Fire Rated Assemblies: Where required, install to manufacturer's instructions.
F. Moisture Barrier: Where required, install to manufacturer's instructions.

3.03 PROTECTION AND CLEANING

A. Protect the completed Expansion Control system work from damage during construction. Damage protection includes surface abrasion and overloading of coverplate by materials handling equipment and construction waste/debris,
B. Protection from environmental factors required throughout installation process until Project Closeout. Protection includes but is not limited to rain events, moisture protection, exposure to temperature fluctuations or direct sunlight for temperature sensitive product offerings.
C. Prior to project closeout, clean all exposed surfaces with a suitable cleaner. Manufacturer suggests Xylene for Santoprene seals, ensure non-solvent cleansers are not utilized throughout product lifespan.