

**SECTION 09 51 13**  
**AXIOM® INDIRECT LIGHT COVE PERIMETER SYSTEM**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

**1.2 SUMMARY**

A. Section Includes:

1. Pre-engineered perimeter transition system

B. Related Sections:

- Section 09 51 00 – Acoustical Ceilings
1. Section 09 20 00 – Plaster and Gypsum Board
  2. Divisions 23 – HVAC
  3. Section 26 50 00 Lighting

C. Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products which have not been approved by Addenda, the specified products shall be provided without additional compensation.
2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); panel design, size, composition, color, and finish; suspension system component profiles and sizes; compliance with the referenced standards.

**1.3 REFERENCES**

A. American Society for Testing and Materials (ASTM):

1. ASTM C 635 Standard Specifications for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
2. ASTM C 636 Recommended Practices for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
3. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
4. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures
5. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components
6. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

B. American National Standards Institute (ANSI)

1. ANSI H35.1 Properties and Characteristics of Wrought Aluminum Alloys

**1.4 Systems Description**

## 1.6 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for perimeter components and each type of suspension system required.
- B. Samples: Minimum 3 inch wide samples of specified component.
- C. Shop Drawings: Layout and details of acoustical ceilings. Show locations of items that are to be coordinated with, or supported by the ceilings.

## 1.7 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide perimeter trim components and grid components by a single manufacturer.
- B. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver perimeter trim components to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing components permit them to reach room temperature and stabilized moisture content.
- C. Handle components carefully to avoid damage.

## 1.9 PROJECT CONDITIONS

- A. Space Enclosure:  
Building areas to receive ceilings shall be free of construction dust and debris. Products with can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

## 1.10 WARRANTY

- A. Perimeter Transition System: Submit a written warranty executed by the manufacturer, agreeing to repair or replace components that fail within the warranty period. Failures include, but are not limited to:
  - 1. Rusting and manufacturer's defects
- B. Warranty Period:
  - 1. Perimeter Transition Components: Ten (10) years from date of substantial completion.
  - 2. Armstrong commercial transition components, suspension systems and ceiling products have a thirty (30) year warranty when installed together and used under normal conditions.
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

### A. Ceiling Panels:

1. Armstrong World Industries

### B. Suspension Systems:

1. Armstrong World Industries

### C. Axiom® Indirect Light Coves

1. Armstrong World Industries

### D. Lighting Fixture

1. Vode® Lighting ZipWave™, Axis Lighting Cove Perfekt™ or Litecontrol 17L fixtures.

## 2.2 ACOUSTICAL CEILING UNITS (select the appropriate ACT panel, suspension system and suspension system hub before finalizing the specification)

### A. Acoustical Panels Type ACT (Calla® Panel Selection):

#### A. Acoustical Panels Type AP

1. Surface Texture: Smooth
2. Composition: Mineral Fiber
3. Color: White
4. Size: Refer to drawings
5. Edge Profile: Square Tegular 9/16IN for interface.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton 0.85.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton 35.
8. Sabin: N/A
9. Articulation Class (AC): ASTM E 1111; 170
10. Flame Spread: ASTM E 1264; Class A (HPVA)
11. Light Reflectance White Panel: ASTM E 1477; 0.86
12. Dimensional Stability: HumiGuard Plus
13. Recycle Content: Post-Consumer - 3% Pre-Consumer Waste - 73%
13. Acceptable Product: Calla, as manufactured by Armstrong World Industries

### B. Acoustical Panels Type ACT (Lyra® Panel Selection):

1. Surface Texture: Fine
2. Composition: Fiberglass
3. Color: White
4. Size: Refer to drawings
5. Edge Profile: Tegular 9/16" for interface.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, N/A
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, N/A
8. Flame Spread: ASTM E 1264; Class A
9. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.90
10. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
11. Antimicrobial Protection
12. Acceptable Product: Lyra, as manufactured by Armstrong World Industries

### C. Acoustical Panels Type ACT (Ultima® Panel Selection):

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24'x 24"
5. Edge Profile: Tegular 9/16" for interface
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, N/A
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, N/A
8. Flame Spread: ASTM E 1264; Class A
9. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.90
10. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
11. Recycle Content: Post-Consumer - 1% - 2% Pre-Consumer Waste - 76%
12. Acceptable Product: Ultima, as manufactured by Armstrong World Industries

**D. Acoustical Panels Type ACT (Optima Panel Selection):**

1. Surface Texture: Fine
2. Composition: Fiberglass
3. Color: White
4. Size: Refer to drawings
5. Edge Profile: Tegular 9/16" for interface.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, N/A
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, N/A
8. Flame Spread: ASTM E 1264; Class A
9. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.90
10. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
11. Recycle Content: Post-Consumer - 1% - 2% Pre-Consumer Waste - 71%
12. Acceptable Product: Optima®, as manufactured by Armstrong World Industries

**2.3. ACOUSTICAL SUSPENSIONS SYSTEM**

A. Acoustical Suspension System:

**I. Suprafine® Selection**

1. Composition: Hot-dipped Galvanized Steel
2. Color: White
3. Profile Height: 1-11/16in
4. Profile: PeakForm® with SuperLock™ Main runner clip and XL<sup>2</sup> Stake-on end detail on Cross-tee
5. Flange: 9/16"
6. Acceptable Product: Suprafine® XL® 9/16" Exposed Tee System as manufactured by Armstrong World Industries.

**II. Interlude® Selection**

1. Composition: Hot-dipped Galvanized Steel
2. Color: White
3. Profile Height: 1-11/16in
4. Profile: Square bulb with XL<sup>2</sup> Stake-on clips on Main runner and Cross-tee
5. Flange: 9/16" Interlude dimensional design
6. Acceptable Product: Interlude® XL® 9/16" Dimensional Tee System as manufactured by Armstrong World Industries.

**III. Silhouette® 1/4" Selection**

1. Composition: Hot-dipped Galvanized Steel
2. Color: White
3. Profile Height: 1-3/4in
4. Edge Profile: for interface with Silhouette® XL® 9/16" Bolt Slot - 1/4" Reveal.

5. Flame Spread: ASTM E 1264;
6. Acceptable Product: Silhouette XL 9/16" Bolt Slot - 1/4" Reveal, as manufactured by Armstrong World Industries.

#### **IV. Armstrong Silhouette® 1/8" Selection**

1. Composition: Hot-dipped Galvanized Steel
2. Color: White
3. Profile Height: 1-3/4in
4. Edge Profile: for interface with Silhouette XL 9/16" Bolt Slot - 1/8" Reveal.
5. Flame Spread: ASTM E 1264;
6. Acceptable Product: Silhouette® XL® 9/16" Bolt Slot - 1/8" Reveal, 76198 as manufactured by Armstrong World Industries.

## **2.4 PERIMETER INDIRECT LIGHT COVES**

- A. Product/Manufacturer: Axiom® Indirect Light Coves; Armstrong World Industries, Inc.
- B. System: An extruded aluminum light cove system fully concealed integrated design to create a light cove profile with integrated Axis Lighting Cove Perfekt, Vode Lighting ZipWAVE or Litecontrol 17L light fixture, installs with Armstrong® Ceiling Solutions acoustical and drywall suspension systems. Commercial quality extruded aluminum alloy 6063 trim channel, factory finished in baked polyester paint (white) color to match intersecting grid system. Commercial quality aluminum unfinished t-bar connection clips; galvanized steel splice plates.
- C. Components:
  1. Axiom® Indirect Light Cove Systems: Aluminum extrusions factory attached to formed sheet aluminum with a distinct architectural detail groove for compatible lighting fixtures. Special bosses are designed to connect AXTBC T-bar connector clip and splice plate; to provide positive mechanical lock with no visible fasteners. Factory finished matching approved samples.
  2. Axiom® Indirect Light Cove Straight sections:
    - A. Axiom Indirect Ceiling to Ceiling Light Coves, Knife Edge Detail
      1. AXIDLCCKE812 – 12" Indirect Ceiling to Ceiling Knife Edge®
      2. AXIDLCCKE812S – 12" Indirect Ceiling to Ceiling Knife Edge, Slotted
      3. AXIDLCCKE1014 – 14" Indirect Ceiling to Ceiling Knife Edge
      4. AXIDLCCKE1014S – 14" Indirect Ceiling to Ceiling Knife Edge, Slotted
      5. AXIDLCCKE1216 – 16" Indirect Ceiling to Ceiling Knife Edge
      6. AXIDLCCKE1216S – 16" Indirect Ceiling to Ceiling Knife Edge, Slotted
      7. AXIDLCCKE1418 – 18" Indirect Ceiling to Ceiling Knife Edge
      8. AXIDLCCKE1418S – 18" Indirect Ceiling to Ceiling Knife Edge, Slotted
      9. AXIDLCCKE1620 – 20" Indirect Ceiling to Ceiling Knife Edge
      10. AXIDLCCKE1620S – 20" Indirect Ceiling to Ceiling Knife Edge, Slotted
    - B. Axiom Indirect Ceiling to Ceiling Light Coves, Classic Edge Detail
      1. AXIDLCC4812 – 12" Indirect Ceiling to Ceiling Classic
      2. AXIDLCC4812S – 12" Indirect Ceiling to Ceiling Classic, Slotted
      3. AXIDLCC41014 – 14" Indirect Ceiling to Ceiling Classic
      4. AXIDLCC41014S – 14" Indirect Ceiling to Ceiling Classic, Slotted

5. AXIDLCC41216 – 16” Indirect Ceiling to Ceiling Classic
  6. AXIDLCC41216S – 16” Indirect Ceiling to Ceiling Classic, Slotted
  7. AXIDLCC41418 – 18” Indirect Ceiling to Ceiling Classic
  8. AXIDLCC41418S – 18” Indirect Ceiling to Ceiling Classic, Slotted
  9. AXIDLCC41620 – 20” Indirect Ceiling to Ceiling Classic
  10. AXIDLCC41620S – 20” Indirect Ceiling to Ceiling Classic, Slotted
- C. Axiom Indirect Ceiling to Wall Light Coves, Knife Edge Detail
1. AXIDLCWKE48 – 8” Indirect Ceiling to Wall Knife Edge
  2. AXIDLCWKE48S – 8” Indirect Ceiling to Wall Knife Edge, Slotted
  3. AXIDLCWKE610 – 10” Indirect Ceiling to Wall Knife Edge
  4. AXIDLCWKE610S – 10” Indirect Ceiling to Wall Knife Edge, Slotted
- D. Axiom Indirect Ceiling to Wall Light Coves, Classic Edge Detail
1. AXIDLCW448 – 8” Indirect Ceiling to Wall Classic
  2. AXIDLCW448S – 8” Indirect Ceiling to Wall Classic, Slotted
  3. AXIDLCW4610 – 10” Indirect Ceiling to Wall Classic
  4. AXIDLCW4610S – 10” Indirect Ceiling to Wall Classic, Slotted
3. Axiom® Indirect Light Cove Corners, each corner is factory finished and sided to accommodate the straight section of the axiom indirect light cove.
- A. Axiom Indirect Ceiling to Ceiling Light Coves, Knife Edge® Detail
1. AXIDLCCKE812IC – 12” Indirect Ceiling to Ceiling Knife Edge, Inside Corner
  2. AXIDLCCKE812OC – 12” Indirect Ceiling to Ceiling Knife Edge, Outside Corner
  3. AXIDLCCKE1014IC – 14” Indirect Ceiling to Ceiling Knife Edge, Inside Corner
  4. AXIDLCCKE1014OC – 14” Indirect Ceiling to Ceiling Knife Edge, Outside Corner
  5. AXIDLCCKE1216IC – 16” Indirect Ceiling to Ceiling Knife Edge, Inside Corner
  6. AXIDLCCKE1216OC – 16” Indirect Ceiling to Ceiling Knife Edge, Outside Corner
  7. AXIDLCCKE1418IC – 18” Indirect Ceiling to Ceiling Knife Edge, Inside Corner
  8. AXIDLCCKE1418OC – 18” Indirect Ceiling to Ceiling Knife Edge, Outside Corner
  9. AXIDLCCKE1620IC – 20” Indirect Ceiling to Ceiling Knife Edge, Inside Corner
  10. AXIDLCCKE1620OC – 20” Indirect Ceiling to Ceiling Knife Edge, Outside Corner
- B. Axiom Indirect Ceiling to Ceiling Light Coves, Classic Edge Detail
1. AXIDLCC4812IC – 12” Indirect Ceiling to Ceiling Classic, Inside Corner
  2. AXIDLCC4812OC – 12” Indirect Ceiling to Ceiling Classic, Outside Corner
  3. AXIDLCC41014IC – 14” Indirect Ceiling to Ceiling Classic, Inside Corner
  4. AXIDLCC41014OC – 14” Indirect Ceiling to Ceiling Classic, Outside Corner
  5. AXIDLCC41216IC – 16” Indirect Ceiling to Ceiling Classic, Inside Corner
  6. AXIDLCC41216OC – 16” Indirect Ceiling to Ceiling Classic, Outside Corner
  7. AXIDLCC41418IC – 18” Indirect Ceiling to Ceiling Classic, Inside Corner
  8. AXIDLCC41418OC – 18” Indirect Ceiling to Ceiling Classic, Outside Corner

- 9. AXIDLCC41620IC – 20" Indirect Ceiling to Ceiling Classic, Inside Corner
- 10. AXIDLCC41620OC – 20" Indirect Ceiling to Ceiling Classic, Outside Corner
- C. Axiom Indirect Ceiling to Wall Light Coves, Knife Edge Detail
  - 1. AXIDLCWKE48IC – 8" Indirect Ceiling to Wall Knife Edge, Inside Corner
  - 2. AXIDLCWKE48OC – 8" Indirect Ceiling to Wall Knife Edge, Outside Corner
  - 3. AXIDLCWKE610IC – 10" Indirect Ceiling to Wall Knife Edge, Inside Corner
  - 4. AXIDLCWKE610OC – 10" Indirect Ceiling to Wall Knife Edge, Outside Corner
- D. Axiom Indirect Ceiling to Wall Light Coves, Classic Edge Detail
  - 1. AXIDLCW448IC – 8" Indirect Ceiling to Wall Classic, Inside Corner
  - 2. AXIDLCW448OC – 8" Indirect Ceiling to Wall Classic, Outside Corner
  - 3. AXIDLCW4610IC – 10" Indirect Ceiling to Wall Classic, Inside Corner
  - 4. AXIDLCW4610OC – 10" Indirect Ceiling to Wall Classic, Outside Corner
- 4. Axiom® Indirect Light Cove Accessories
  - 1. AXBTSTR – Axiom Drywall Bottom Trim
  - 2. AXCCLT45 – 45 Degree Tee Bar Connector Twist (for use with Knife Edge Axiom Trim)
  - 3. AXTBC – T-Bar Connector Clip (for use with Classic Axiom Trim)
  - 4. AX4SPLICE – Axiom splice Plate
  - 5. AXIDLCWC – Axiom Indirect Light Cove Wall Clip (for use with the ceiling to wall Axiom Indirect Light Cove)

## **2.5 LIGHTING FIXTURE**

- A. Product/Manufacturer: Axis, Vode or Litecontrol
- B. Product Name: Axis Cove Perfekt, Vode ZipWave or Litecontrol 17L
- C. Ceiling Grid Compatibility: Armstrong World Industries
- D. Color: Finished Trim in white

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

### **3.2 PREPARATION**

- A. Coordinate panel layout with mechanical and electrical fixtures.

### **3.3 INSTALLATION**

- A. Install suspension system and panels in accordance with manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction
  - 1. Install seismic components if required by the building code. Seismic components to be specified on the architectural plans by the project engineer or design team.

2. Refer to the manufacture's indirect light cove installation instructions as a reference when installing this product.

### **3.4 ADJUSTING AND CLEANING**

- A. Clean exposed surfaces of trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

**END OF SECTION**