

SECTION 09 51 13
AXIOM® INDIRECT LIGHT LEDGE 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:

1. Section 09 51 00 – Acoustical Ceilings
2. Section 09 20 00 – Plaster and Gypsum Board
3. Divisions 23 – HVAC
4. 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 can be installed at temperatures 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, Inc.

B. Suspension Systems:

1. Armstrong World Industries, Inc.

C. Axiom Indirect Light Ledge

1. Armstrong World Industries, Inc.

D. Drywall Suspension Systems:

1. Armstrong World Industries, Inc.

E. Accessories:

1. Armstrong World Industries, Inc.

F. Lighting Fixture

1. Vode 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 (Armstrong Calla Panel Selection):

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%
14. Acceptable Product: Calla, as manufactured by Armstrong World Industries, Inc.

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: Armstrong 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: Armstrong 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: Armstrong Optima, as manufactured by Armstrong World Industries

2.3. ACOUSTICAL SUSPENSIONS SYSTEM

A. Acoustical Suspension System:

I. Armstrong 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 XL² 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. Armstrong Interlude Selection

1. Composition: Hot-dipped Galvanized Steel
2. Color: White
3. Profile Height: 1-11/16in
4. Profile: Square bulb with XL² 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. Armstrong 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 AXIOM® INDIRECT LIGHT LEDGE

- A. Product/Manufacturer: Axiom® Indirect Light Ledge; 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 Cove Perfekt, Vode ZipWAVE or Litecontrol 17L light fixture, installs with Armstrong drywall suspension systems. Commercial quality extruded aluminum alloy 6063 trim channel, factory finished in baked polyester paint (white).
- C. Components:
 1. Axiom Indirect Light Ledge – Aluminum extrusions with a distinct architectural detail groove for compatible lighting fixtures. Aluminum extrusions is design with a taping flange and design for integration with 5/8" drywall Special bosses are designed to connect to axiom splice plates; to provide positive mechanical lock with no visible fasteners. Factory finished matching approved samples.
 2. Axiom Indirect Light Ledge – Straight Sections
 - A. Ceiling-to-Ceiling
 1. AXILLCC2D - Ceiling-to-Ceiling 2" Classic Edge Detail
 2. AXILLCCKD - Ceiling-to-Ceiling Knife Edge, Drywall
 - B. Ceiling-to-Wall
 1. AXILLCW2D - Ceiling-to-Wall 2" Classic Edge Detail
 2. AXILLCWKD - Ceiling-to-Wall Knife Edge, Drywall
 3. Axiom Indirect Light Ledge – Each corner is factory finished and sided to accommodate the straight section of the Axiom indirect light ledge.

- A. Ceiling-to-Ceiling
 - 1. AXILLCC2DIC - Ceiling-to-Ceiling 2" Classic Edge Detail Inside Corner
 - 2. AXILLCC2DOC - Ceiling-to-Ceiling 2" Classic Edge Detail Outside Corner
 - 3. AXILLCCKDIC - Ceiling-to-Ceiling Knife Edge, Drywall Inside Corner
 - 4. AXILLCCKDOC - Ceiling-to-Ceiling Knife Edge, Drywall Outside Corner
- B. Ceiling-to-Wall
 - 1. AXILLCW2DIC - Ceiling-to-Wall 2" Classic Edge Detail Inside Corner
 - 2. AXILLCW2DOC - Ceiling-to-Wall 2" Classic Edge Detail Outside Corner
 - 3. AXILLCWKDIC - Ceiling-to-Wall Knife Edge, Drywall Inside Corner
 - 4. AXILLCWKDOC - Ceiling-to-Wall Knife Edge, Drywall Outside Corner
- 4. Axiom Indirect Light Ledge End Plates – Each end plate is factory finished and sided to accommodate the straight section of the Axiom Indirect Light Ledge.
 - 1. AXILL2DEP- Classic 2" Drywall Edge Detail
 - 2. AXILLKDEP- Knife Edge, Drywall End Plate
- 5. Axiom Indirect Light Ledge Accessories
 - A. AX4SPLICE – Axiom Splice Plate

2.5 DRYWALL SUSPENSIONS SYSTEM

- 1. Armstrong® Drywall Grid Suspension Systems all main beams and cross tees shall be commercial quality hot-dipped galvanized steel
 - A. Tee: manufactured main beam- 1-1/2" knurled face with ScrewStop™ reverse hem by 1-11/16 inches high. Drywall Main Beams are factory punched with cross-tee routs and hanger wire holes and SuperLock™ main beam clip for a strong secure connection and fast accurate alignment. Both ShortSpan® Framing System and Drywall Main Beams are Heavy-duty performance per ASTM C635
 - 1. HD8906 - 12ft HD Drywall Main Beam 1-1/2IN
 - B. Cross Tees: manufactured main beam- 1-1/2" knurled face with ScrewStop™ reverse hem by 1-1/2 inches high with factory punched cross tee routs and hanger wire holes and XL stake on clip for a strong secure connection.
 - 1. XL8965 - 6ft Drywall Cross Tee
 - C. Wall Molding:
 - 1. KAM12 - 12ft Knurled Angle Molding 1-1/4" Face
 - D. Hanger wire: a Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least time three times the design load, but not less than 12-gauge.
 - 1. Accessories:
 - 2. DWC - Drywall Clip

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 manufacturer'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