

## SECTION 09582 – Open Cell Beam & Baffle Metal Ceiling System

### PART 1 GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

##### A. Section Includes:

1. Non-perforated metal ceiling baffles and beams; perforated panels
2. Ceiling panels (optional)
3. Suspension systems
4. Accessories: provide other necessary items including devices for attachment overhead construction, secondary members, splines, splices, connecting clips, and other devices required for a complete installation.
5. Supplemental support framing: Provide fully engineered secondary framing as required to meet code, conforming to layout shown in drawings, to support direct-hung metal ceilings suspension system.

##### B. Related Sections / Work:

1. Sections 05 40 00 – Cold-Formed Metal Framing
2. Sections 09 20 00 – Plaster and Gypsum Board
3. Sections 09 50 00 – Acoustical Ceilings
4. Sections 09 90 00 – Paintings and Coatings
5. Division 23 – Heating, Ventilating and Air Conditioning
6. Division 26 – Electrical

##### C. Alternatives

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 that 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); Underwriters' Laboratories Classified Acoustical performance; Component design, size,

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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. E 84 – "Standard Test Method for Surface Burning Characteristics of Building Materials"
2. E 488 – "Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements"
3. B 209 – "Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate"
4. C 423 – "Sound Absorption and Sound Absorption Coefficients by Reverberation Room Method"
5. E 580 – "Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint"
6. C 635 – "Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings"
7. C 636 – "Recommended Practice for Installation of Metal Ceiling Suspensions Systems for Acoustical and Lay-in Panels"
8. A 641 – "Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire"
9. A 653 – "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip process"
10. E 1264 – "Classification for Acoustical Ceiling Products"
11. E 1477 – "Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by use of Integrating-Sphere Reflectometers"
12. D 1044 – "Practice for Abrasion Resistance"
13. D 1002 – "Practice for Adhesion Resistance"

### 1.4 System Description

Floating or Wall to Wall Configurations

## 1.5 SUBMITTALS

- A. Product Data: Manufacturer's published literature, including specifications.
- B. Product Certification: Manufacturer's certifications that products comply with specified requirements and governing codes including product data, laboratory test reports and research reports showing compliance with specified standards.
- C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with or supported by the ceilings.
- D. Samples for Verification: Full-size units (or as specified below) of each type of ceiling assembly indicated; in sets for each color, texture, and pattern specified, showing the full range of variations expected in these characteristics. Submit samples for each type specified.
  - I. 6" long metal beam.
  - II. 6" x 6" panel
  - III. 6" long samples of each suspension component.

## 1.4 QUALITY ASSURANCE

- A. Manufacturer/Installer Qualifications:
  - 1. Provide metal ceiling system components produced by a single manufacturer with experience in actual production of specified products and with resources to provide consistent quality in appearance and physical properties, without delaying the work.
  - 2. Provide suspension system components produced by a single manufacturer to provide compatible components for a complete metal ceiling system installation.
  - 3. Perform installations using a firm with installers having no less than 3 years of successful experience on projects of similar size and requirements.
- B. Regulatory Requirements:
  - 1. Fire Rating Performance Characteristics: Install system to provide a flame spread of 0 - 25, complying with certified testing to ASTM E 84.
  - 2. Structural Criteria: Install and certify system to comply with structural and wind load requirements of governing codes.
  - 3. Installation Standard for Suspension System: Comply with ASTM C 636.
- C. Mock-Up: Prior to beginning installation erect a mock-up section, where directed, using all system components.
- D. Pre-installation Conference: Conduct a conference, prior to start of installation, to review system requirements, shop drawings, and all coordination needs.

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### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver system components in manufacturer's original unopened packages, clearly labeled.
- B. Store components in fully enclosed dry space. Carefully place on skids, to prevent damage from moisture and other construction activities.
- C. Handle components to prevent damage to surfaces and edges, and to prevent distortion and other physical damage.

### 1.6 PROJECT CONDITIONS

- A. Begin system installations only after spaces are enclosed and weather-tight, and after all wet work and overhead work have been completed.
- B. Prior to starting installations, allow materials to reach ambient room temperature and humidity intended to be maintained for occupancy.

### 1.7 WARRANTY

- A. Provide specified manufacturer's warranty against defects in workmanship, discoloration, or other defect considered undesirable by the Architect or Employer.
- B. This warranty shall remain in effect for a minimum period of one (1) year from date of initial acceptance.

### 1.8 MAINTENANCE & EXTRA MATERIALS

- A. Maintenance Instructions: Provide manufacturer's standard maintenance and cleaning instructions for finishes provided.
- B. Extra Materials: Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents. Only typical system components are included with attic stock.
  - 1. Acoustical Metal Ceiling Beams: Full-size units equal to two percent (2%) of amount installed.
  - 2. Ceiling Suspension System Components: Quantity of each grid and exposed component equal to two percent (2%) of amount installed.

### 1.9 LEED

- A. Maxxit Metal Ceilings qualify for the following credits:
  - a. Category - Material & Resources
    - i. MR Credit 2.1, 2.2 - Construction Waste Management Divert 50% or 75% from disposal
    - ii. MR Credit 4.1, 4.2 - Recycled Content
    - iii. MR Credit 5.1, 5.2 - Regional Materials (dependent on location)

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1. LEED NC - 10% Extracted, Processed & Manufactured Regionally
2. LEED CI - 20% Manufactured Regionally

### b. Category - Indoor Environmental Quality

- i. EQ Credit 4.1 to 4.6 - Low-Emitting Materials

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. Protero™ Beam and Baffle ceiling system manufactured by Maxxit Ceilings & Walls:  
200 Admiral Blvd. Mississauga, ON L5T 2N6. Phone 905-206-9349.
- B. Substitutions not permitted.

### 2.2 SYSTEM MATERIALS

Protero Beam & Baffle ceiling system for interior installations providing 15"/16" HD grid Unistrut suspension systems. Material thickness per manufacturer's recommendations.

Baffle & Beam Profiles – Aluminium extrusion

Dimensions

Standard:

- a. 1-3/8" x 3-3/8"
- b. 1-1/2" x 6"
- c. 2" x 6"
- d. Up to 12' long

Custom:

- e. Baffles & Beams
- f. Lengths up to 24' long
- g. Depths – custom sizes
- h. Widths – custom sizes

Spacing between beams determined by design

#### A. Ceiling Beams & Baffles

1. Ceiling Beams and Baffles Type – Protero Network
  1. Color: 'Standard', 'Color Matched'
  2. Size: Beam - Width, Depth, Length

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3. Flame Spread: ASTM E 1264; Class A (HPVA).
4. Recycle Content: Post-Consumer – 31.5% Pre-Consumer – 28.6%
5. Acceptable Product: Protero Networks manufactured by Maxxit

### B. Suspension:

#### 1. Baffles can be suspended from both Unistrut

- a) 1-5/8" x 1-5/8" Unistrut P1000 Channel with 3/8" return flanges designed to interlock with Panel Hanger Bracket, 20' long. Factory-applied black polyester painted finish. Material: 12 Ga. galvanized steel, GR 33
- b) Threaded Rod: .375" diameter galvanized steel threaded rod
- c) EZ access Unistrut connector positively locks baffle in place and releases it to allow baffles to slide for easy plenum access. Connector slides into both baffle channel and Unistrut support channel to hang and secure baffles.
  - a. Finish: (Black)(White)(Other: \_\_\_\_\_)

### C. Perforations available on painted finish options only:

1. Beams (Non-Perforated), Panels (Perforated, 0.0625" – 0.25" hole diameter)

### D. Baffle & Beam Finish:

1. Paint; color to be selected by architect
  - a. Applied Polyester
  - b. Powder Coat
  - c. Decorated Wood-Look Powder Coat
2. Vinyl Film

## 2.3 ACCESSORY MATERIALS

- A. End Caps: End caps to match beam finish
- B. Hanger Brackets: Splice/hanger bracket connector

## PART 3- EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and structural framing to which metal beams attach or abut, with installer present, for compliance with requirements specified in this and other Sections that affect installation and anchorage, and other conditions affecting performance of metal beam ceilings.

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- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.
- B. Survey substrate for wall attachment to assure squareness and proper elevation for baffle & beam installation.

### 3.3 INSTALLATION

- A. General: Install metal baffle & beam ceilings, per manufacturers shop drawings provided, per manufacturer's written instructions and to comply with publications referenced below.
  - 1. CISCA "Ceiling Systems Handbook"
  - 2. Standard for Ceiling Suspension System Installations - ASTM C 636
  - 3. Standard for Ceiling Suspension Systems Requiring Seismic Restraint - ASTM E 580
  - 4. IBC (International Building Code) Standard for Seismic Zone for local area
- B. Suspend ceiling hangers from building's approved structural substrates and as follows:
  - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
  - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter-splaying, or other equally effective means.
  - 3. Where width of ducts and other construction within ceiling plenum produce hanger spacings that interfere with location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Utilize supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
  - 4. Where used secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure; that are appropriate for substrate; and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  - 5. Space hangers not more than 48" on-center, along each member supported directly from hangers, unless otherwise indicated; and provide hangers not more than 12" from ends of each member. Supply supporting calculations from licensed Structural Engineer verifying hanger spacing meets all requirements, when spacing exceeds those recommended.
  - 6. Level Unistrut or grid to 1/8" in 10' from specified elevation(s), square and true.

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3.4 ADJUST AND CLEAN

- A. Adjust components to provide uniform tolerances.
- B. Replace all ceiling components that are scratched, dented or otherwise damaged.
- C. Clean exposed surfaces with non-solvent, non-abrasive commercial type cleaner.

**End of Section**