PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Suspension system for monolithic acoustical ceilings.
2. Rockfon Mono Acoustic FE attached directly onto flat drywall ceiling suspension.
3. Rockfon Mono Acoustic FE Direct adhered to existing flat surfaces.
4. Rockfon Mono Acoustic FE Flecto attached to undulating and curved surfaces.
5. Perimeter trims and accessories.

B. Related Sections:

1. Section 09 22 00 Supports for Plaster and Gypsum Board.
2. Section 09 51 13, Acoustical Panel Ceilings.
3. Section 09 51 53, Direct applied acoustical ceilings.
4. Section 09 53 23, Metal Acoustical Ceiling Suspension Assemblies.
5. Section 09 54 00, Specialty Ceilings.
6. Section 13 48 00, Sound, Vibration, and Seismic Control.
7. Section 21 00 00, Fire Suppression.
8. Division 22, Plumbing.
9. Division 23, Heating, Ventilation and Air Conditioning (HVAC).
10. Division 26, Electrical.

1.3 REFERENCES

A. Abbreviations and Acronyms:

1. CISCA: Ceilings & Interior Systems Construction Association; www.cisca.org.

2. ASTM: ASTM International, formerly known as American Society for Testing and Materials; www.astm.org.

3. UL: Underwriters Laboratories; https://ul.org.

4. ULC: UL Canada; https://canada.ul.com.

B. Reference Standards:

1. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

2. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

3. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

4. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.

5. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.

6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

7. ASTM E1111/E1111M - Standard Test Method for Measuring the Interzone Attenuation of Open Office Components.

8. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; Type IV, Form 3, Pattern G.

9. ASTM E1414/E1414M - Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.

10. Light Reflectance per ASTM E 1477.

11. CAN/ULC S102, Surface Burning Characteristics of Building Materials and Assemblies.

12. International Building Code.

13. UL 2821, GREENGUARD Certification Program Method for Measuring and Evaluating Chemical Emissions From Building Materials, Finishes and Furnishings Using Dynamic Environmental Chambers.

14. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Severe Seismic Restraint

1.4 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meetings: Conduct meeting at Project site. Agenda includes Project conditions, coordination with work of other trades and layout of items which penetrate ceilings.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data including standard product features and options as well as material transparency documentation including Environmental Product Declaration (EPD) and maintenance data.

B. Samples: Submit 6" x 6" samples of specified ceiling panels with applied finish.

C. Shop Drawings: Plan and details of [ceilings] [walls] [islands], including hanger locations, suspension, access hatches and other items that integrate with the system.

D. Rockfon Mono Acoustic Training Certification for the installers used for this installation.

1.6 QUALITY ASSURANCE

A. Submit documentation asserting that the installer has been trained and certified by Rockfon for installation of the Rockfon Mono Acoustic system.

B. Provide suspension, acoustical panel units, joint filler and acoustical surface treatment from a single manufacturer.

C. Coordinate ceiling installation with related trades including wall framing and gypsum, lighting, plumbing, HVAC, security and any other trades integrating with the ceiling.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect system components from excessive moisture in shipment, storage, and handling. Deliver in unopened bundles and store in a dry place with adequate air circulation.

C. Store materials in a dry location with a temperature between 41-86°F and relative humidity between 40% and 60%, maximum 80%.

1.8 PROJECT CONDITIONS

A. Installation area must be enclosed, free from debris and contaminants such as dust and moisture, and fully climatized prior to, during and after installation.

B. Installation area to be well ventilated to facilitate adequate drying of joint compounds and acoustical surface coating.

C. The Mono Acoustic FE system should not be used where there is a negative air pressure in the plenum space as this creates air movement through the face of the ceiling, causing a filter effect on the panel surface, resulting in an uneven visual appearance over time. Use ducted air return or other method to ensure that air pressure is equalized between the room and plenum space above the ceiling.

D. Please refer to the Rockfon Mono Acoustic Specifiers Guide for more details.

2.0 WARRANTY

A. Manufacturer Warranty: Submit a written limited product warranty executed by manufacturer for materials deemed to be defective from the manufacturer for the following periods;

1. Monolithic acoustical panels: 15 year limited product warranty.

2. Chicago Metallic Suspension system: 40 year limited product warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of design; Rockfon Mono Acoustic by Rockfon North America, 4849 South Austin Avenue, Chicago, IL 60638. 1-800-323-7164; www.rockfon.com.

2.2 MATERIALS

A. Rockfon Mono Acoustic ceiling and wall systems by Rockfon.

1. [Rockfon Mono Acoustic FE attached directly onto flat drywall ceiling suspension].

2. [Rockfon Mono Acoustic FE Direct adhered to existing flat surfaces].

3. [Rockfon Mono Acoustic FE Flecto attached to undulating and curved surfaces].

B. Rockfon Mono Acoustic FE system – install onto flat drywall ceiling suspension.

1. Suspension for Rockfon Mono FE Acoustic panels to be Chicago Metallic drywall suspension grid installed in 2′ x 4′ modules, manufactured by Rockfon, 4849 South Austin Avenue, Chicago, IL 60638. 1-800-323-7164; www.rockfon.com.

    a. Rockfon Chicago Metallic 12′ drywall main runners installed 4′ on center. Manufactured from commercial quality steel with factory punched hanger holes and slotting for cross channels 8″ on center.

    b. Rockfon Chicago Metallic 4′ drywall grid cross tees installed 2′ on center. Manufactured from commercial quality steel with ends designed to positively lock into drywall main runners.

    c. 12ga galvanized hanger wires installed maximum 4′ on center along main runners.

2. Rockfon Mono Acoustic FE Panel.

    a. Material; Stone Wool substrate with non-directional facing on front face and high-performance membrane on back side.
    b. Size: 4' x 6' x 1.5"
    c. Edges: FE (Flexible Edge) for Mono Acoustic joint tape and joint compound.
    d. Color; White base for Mono Acoustic Elegant Render spray applied finish.
    e. Noise Reduction Coefficient per ASTM C423: NRC 1.00 bare panel / NRC 0.95 finished system.
    f. Articulation Class per ASTM E1111/E1111M; AC 190.
    g. Seismic Design Category: A through F
    h. Resistance to mold per ASTM D3273; Rating 10 (no mold growth).
    i. Flame spread and smoke developed Class A per ASTM E1264.
    j. Emissions per UL 2818; achieves ULE Greenguard requirements.
    k. Cradle to Cradle Certified Silver
    l. R Value (BTU Units): 5.3.
    m. Light Reflectance: White: 0.87, Color: Color Dependent
    n. Embodied Carbon: 5.06 kg CO_2e per m^2 / 0.47 kg CO_2e per ft^2.

3. Rockfon Mono Acoustic FE panel attachment devices

    a. Rockfon Mono Acoustic Intersection Brackets.

    b. Rockfon Mono Acoustic Fastening Washers.

c. Fasteners; #8 x 2-3/8" Self-drilling sheet metal fasteners for drywall suspension.

4. Rockfon Mono Acoustic FE finish materials designed for Mono Acoustic panels.

a. Choose one of the following joint fillers:
   i. White: Rockfon Mono Acoustic powder filler, mixed with water on jobsite per manufacturer instructions.
   ii. Color: Rockfon Mono Acoustic pre mixed color filler
b. Rockfon Mono Acoustic 1.5" wide joint tape.
c. Rockfon Mono Acoustic Elegant Render, water-based spray-applied fine texture surface applied per manufacturers installation instructions.

5. Rockfon Mono Acoustic FE Perimeter solutions.

a. Along walls use Rockfon Chicago Metallic Knurled Wall Angle: 10' long by 1.5" x 1.5". manufactured from galvanized steel.
b. At floating islands and peninsulas use Rockfon InfinityD perimeter trim: [Straight] [Curved], [4"] [6"] high made from extruded aluminum with grooved taping flange and primed for adhesion of joint compound and paint.
c. Along walls use joint sealant between wall and edge of Rockfon Mono Acoustic FE panel.
d. Install control joints following gypsum ceiling guidelines in ASTM C840.

C. Rockfon Mono Acoustic FE Direct system for adhering to existing flat and smooth ceiling and wall surfaces.

1. Surface for Rockfon Mono Acoustic FE Direct panels.

a. Existing surface to accept Mono Acoustic FE Direct panels to be flat, smooth, dry and free from any material that may deter adhesion. Allowable surfaces include gypsum board, concrete, hardboard, plywood and wood.
b. New surface to accept Mono Acoustic FE Direct panels to be constructed from gypsum board with finished joints, attached to Rockfon Chicago Metallic drywall ceiling suspension.

2. Rockfon Mono Acoustic FE Direct Panel.

a. Material; Stone Wool substrate with non-directional facing on front face.
b. Size: 3' x 4' x 1.5"

c. Edges: FE (Flexible Edge) for Mono Acoustic joint tape and joint compound.
d. Finish: Field spray applied Mono Acoustic Elegant Render. Color, White.
e. Noise Reduction Coefficient per ASTM C423; : NRC 0.95 bare panel / NRC 0.90 finished system
f. Ceiling Attenuation Class per ASTM C1414; CAC 34 based on applying panels to 5/8" gypsum boards.
g. Articulation Class per ASTM E1111/E1111M; AC 190.
h. Resistance to mold per ASTM D3273; Rating 10 (no mold growth).
i. Flame spread and smoke developed Class A per ASTM E1264.
j. Emissions per UL 2818; achieves UL Greenguard requirements.
k. Cradle to Cradle Certified Silver
l. R Value (BTU Units): 5.3.

3. Rockfon Mono Acoustic FE Direct panel attachment.

a. Recommended adhesive; Titebond® GREENchoice Acoustical Ceiling Tile Construction Adhesive (www.titebond.com) .

4. Rockfon Mono Acoustic finish materials designed for Mono Acoustic panels.

a. Choose one of the following joint fillers:
i. White: Rockfon Mono Acoustic powder filler, mixed with water on jobsite per manufacturer instructions.
ii. Color: Rockfon Mono Acoustic pre mixed color filler.
b. Rockfon Mono Acoustic 1.5" wide joint tape.
c. Rockfon Mono Acoustic Elegant Render, water-based spray-applied fine texture surface applied per manufacturers installation instructions.

5. Perimeter solutions.

a. Along walls use joint sealant between wall and edge of Mono Acoustic Direct panel.

d. Control joints; For existing surfaces, install joints following existing construction. For new construction follow gypsum ceiling guidelines in ASTM C840.

D. Rockfon Mono Acoustic FE Flecto system for undulating surfaces.

1. Surface for Rockfon Mono Acoustic FE Flecto panels.

a. Allowable existing surfaces include steel framing, hardboard, plywood and wood.

2. Rockfon Mono Acoustic FE Flecto Panel.

a. Material; Stone Wool substrate with non-directional facing on front face and high-performance membrane on back side.
b. Size; 3' x 4' x 1.5"
c. Minimum bend radius: 5’
d. Edges: FE (Flexible Edge) for Mono Acoustic joint tape and joint compound.
e. Finish: Field spray applied Mono Acoustic Elegant Render. Color, White.
f. Noise Reduction Coefficient per ASTM C423; NRC 0.95 bare panel / NRC 0.90 finished system
g. Resistance to mold per ASTM D3273; Rating 10 (no mold growth).
h. Flame spread and smoke developed Class A per ASTM E1264.
i. Emissions per UL 2818; achieves UL Greenguard requirements.
j. Cradle to Cradle Certified Silver
k. R Value (BTU Units): 5.3.
l. Embodied Carbon: 5.06 kg CO_2e per m² / 0.47 kg CO_2e per ft².

3. Rockfon Mono® Acoustic Flecto panel attachment.

a. Rockfon Mono® Acoustic Intersection Brackets.

b. Rockfon Mono® Acoustic Fastening Washers.

c. Fasteners; #8 x 2-3/8” Self-drilling sheet metal fasteners for drywall suspension.

4. Rockfon Mono® Acoustic finish materials designed for Mono Acoustic panels.

a. Choose one of the following joint fillers:
   i. White: Rockfon Mono Acoustic powder filler, mixed with water on jobsite per manufacturer instructions.
   ii. Color: Rockfon Mono Acoustic pre mixed color filler Rockfon Mono Acoustic 1.5” wide joint tape.
b. Rockfon Mono Acoustic Elegant Render, water-based spray-applied fine texture surface applied per manufacturers installation instructions.

5. Perimeter solutions.

a. Along walls use joint sealant between wall and edge of Mono Acoustic Direct panel.

E. Accessories.

1. Integrate services in a similar fashion as with a typical gypsum panel ceiling, with allowance for 1.5" Mono Acoustic panel thickness.
2. Mono Acoustic access and inspection hatches that accommodate field cut and fit Mono Acoustic panels to be sprayed with Mono Acoustic Elegant Render.
    a. Square access and inspection hatch [16" x 16"] [24" x 24"].
    b. For other inspection and access hatches: Coordinate with Electrical division to ensure that light fixtures work with 1.5" thick Mono Acoustic panels and suspension.
3. Light fixtures: Coordinate with Electrical division to ensure that light fixtures work with 1.5" thick Mono Acoustic panels and applicable suspension.
4. Air diffusers: Coordinate with HVAC division to ensure that air diffusers work with 1.5" thick Mono Acoustic panels and applicable suspension. Ensure that there is neutral air pressure between the plenum and the room. Use ducted air-return with Mono Acoustic FE system.
5. Sprinklers: Coordinate with Electrical division to ensure that sprinkler trim works with 1.5" thick Mono Acoustic panels and applicable suspension.
6. Security cameras: Coordinate with Electrical division to ensure that camera housings and trim work with 1.5" thick Mono Acoustic panels and suspension.

PART 3 - EXECUTION

3.1 EXAMINATION

1. Examine suspension assemblies, with installer present, to ensure that they are square and level within 3/32" over 3'-3" (2mm over 1 meter) in all directions.
2. Check that movement joints (if required) are installed to align with the building.
3. Prior to, during and after installation, ensure proper coordination between trades integrating with the Mono Acoustic system including HVAC, electrical and sprinklers.
4. For Mono FE system, confirm that the HVAC air-return system through the plenum is a ducted design providing neutral air pressure between the plenum and the room. Plenum air return with negative air pressure in the plenum is not allowed and voids the warranty.
5. To optimize drying time of Mono Acoustic filler and Elegant Render, job site temperature should be between 41–104°F (5–40°C) and relative humidity between 40–60%, maximum 80%.
6. If necessary, protect the floor, walls and any furniture at the jobsite by masking prior to installation of joint filler and spray-applied finish.
7. Proceed with installation only after unsatisfactory conditions have been corrected.

8. Seismic compliance: Verify that installation method and suspension are appropriate for the project's assigned Seismic Design Category (A through F) per ASCE 7 and the governing IBC edition. Coordinate with the structural engineer of record where required.

3.2 INSTALLATION

A. Rockfon Mono Acoustic is for interior use only and is to be installed only by Certified Rockfon Mono Acoustic Installers following Rockfon Mono Acoustic installation instructions.

B. Always follow good safety practices including wearing protective equipment and maintaining safe jobsite conditions.

C. For Mono Acoustic FE system.

1. Install 12' Chicago Metallic drywall suspension main runners 4' on center supported by 12 ga hanger wire [or pencil rod] every 4' on center. Install 4' Chicago Metallic drywall grid cross tees 2' on center to create 2' x 4' framing.
2. Installation of drywall suspension for Mono Acoustic FE is similar to installing for gypsum ceiling panels, with additional critical tolerances for squareness and level within 3/32" over 3'-3" in all directions.
3. Install [Rockfon Chicago Metallic knurled wall angle along walls] [and] [Rockfon Infinity D perimeter trim at island or peninsula conditions].
4. Attach Rockfon Mono Acoustic panels to suspension using #8 x 2-3/8" long self-drilling sheet metal fasteners through Mono Acoustic Intersection brackets at panel edges and Mono Acoustic Washers in middle of panel underneath furring channels.
5. Apply Mono Acoustic joint tape and Mono Acoustic joint filler layers in accordance with Mono Acoustic installation instructions to maintain the system's acoustical performance.
6. Apply Mono Acoustic spray-applied Elegant Render layers in accordance with Mono Acoustic installation instructions to achieve system's acoustical performance and visual evenness.

D. For Mono Acoustic FE Direct system.

1. Install 3' x 4' Mono Acoustic FE Direct panels to existing flat surfaces in accordance with Mono Acoustic installation instructions using Titebond® GREENchoice Acoustical Ceiling Tile Construction Adhesive (www.titebond.com).

2. Apply Mono Acoustic joint tape and Mono Acoustic joint filler layers in accordance with Mono Acoustic installation instructions to maintain the system's acoustical performance.
3. Apply Mono Acoustic spray-applied Elegant Render layers in accordance with Mono Acoustic installation instructions to achieve system's acoustical performance and visual evenness.

E. For Mono Acoustic FE Flecto system.

1. Install Rockfon Mono Acoustic FE Flecto in accordance with Rockfon Mono Acoustic installation instructions.
2. Install 3' x 4' Rockfon Mono Acoustic FE Flecto panels to existing framing made from steel, hardboard, plywood or wood with a minimum bend radius of 5'.
3. Fit Rockfon Mono Acoustic FE Flecto panels to framing and attach using fasteners suitable for the framing material and Mono Acoustic Washers.
4. Apply Rockfon Mono Acoustic joint tape and Mono Acoustic joint filler layers in accordance with Mono Acoustic installation instructions to maintain the system's acoustical performance.
5. Apply Rockfon Mono Acoustic spray-applied Elegant Render layers in accordance with Mono Acoustic installation instructions to achieve system's acoustical performance and visual evenness.

3.3 REPAIR

A. Remove damaged or compromised components; replace with undamaged components. Refer to the Maintenance section in the installation guide for more details.

3.4 CLEANING

A. Dry clean exposed surfaces carefully with vacuum cleaner & soft brush operating at low power.

B. Small areas of dirt can be covered using Mono Acoustic Elegant Render applied using a pencil paint brush. Apply a blocker covering surface discoloration before painting if needed.

C. For large areas requiring repair, contact a trained and certified Mono Acoustic installer.

D. Mono Acoustic must not be cleaned with water or wiped with a wet cloth.