Section 09 84 00 Felt Ceilings & Walls - Baffles & Beams

**PART 1 GENERAL**

1. SUMMARY
	1. Section Includes:
		1. Polyester felt fiber ceiling components.
		2. Suspension systems
	2. Related Sections / Work:
		1. Section 09 84 33 - Sound-Absorbing Wall Units
		2. Section 09 84 36 - Sound-Absorbing Ceiling Units
		3. Section 09 51 10 - Suspended Acoustical Ceilings: Conventional grid-supported acoustic ceilings
		4. Sections 05 40 00 – Cold-Formed Metal Framing
		5. Sections 09 20 00 – Plaster and Gypsum Board
		6. Sections 09 90 00 – Paintings and Coatings
		7. Division 23 – Heating, Ventilating and Air Conditioning
		8. Division 26 – Electrical
	3. Qualification Data:
		1. Test Reports: Certified reports from independent agency substantiating compliance to governing requirements.
		2. Certificates: Manufacturer’s certifications that products comply with specified requirements, including test reports showing compliance with specified tests and standards.
			1. Data substantiating manufacturer and installer qualifications.
			2. Certified data attesting fire rated materials comply with specifications.
		3. Manufacturer's Instructions: Detailed installation instructions and maintenance data.
2. REFERENCES
	1. 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"
	2. Green Guard Gold Certified
	3. LEED-CI 2009: Applicable LEED Environmental Categories and Credits and performance requirements as indicated in LEED for Commercial Interiors 2009:
		1. Material and Resources (MR)
			1. MRc4 – Building Product Disclosure and Optimization – Material Ingredients
		2. Indoor Environmental Quality (IEQ)
			1. IEQc4.6 – Low-Emitting Materials – Ceiling and Wall Systems
			2. IEQpc24 – Acoustics
	4. LEED v4 ID+C: Applicable LEED v.4 Environmental Categories and Credits and performance requirements as indicated in LEED v4 for Interior Design + Coordination:
		1. MR Credit: Building Product Disclosure & Optimization – Material Ingredients
		2. EQ Credit: Low-Emitting Materials
		3. EQ Credit: Indoor Air Quality Assessment
		4. EQ Credit: Acoustic Performance
3. SUBMITTALS
	1. Product Data: Manufacturer's published literature, including specifications.
	2. LEED Submittal Data: Manufacturer's product data for each product specified in this section per ecoscorecard.com.
	3. 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.
	4. Shop Drawings: Submit shop drawings for reflected ceiling plans (RCP's), drawn to scale, and indicating penetrations and ceiling mounted items. Show the following details:
		1. Reflected Ceiling Plan(s): Indicating felt ceiling layout, ceiling mounted items and penetrations.
		2. Suspension System, Carrier and Component Layout.
		3. Details of system assembly and connections to building components.
	5. 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.
		1. 11" long felt panel units.
		2. 11" long samples of each suspension component.
4. QUALITY ASSURANCE
	1. Manufacturer/Installer Qualifications:
		1. Provide felt ceiling system and suspension system components produced by a single manufacturer to provide consistent quality in appearance and physical properties, without delaying the work.
		2. Perform installations using a firm with installers having no less than 3 years of successful experience on projects of similar size and requirements.
	2. Regulatory Requirements:
		1. Fire Rating Performance Characteristics:
			1. Surface Burning Characteristics: Tested per ASTM E84 and complying with Class A requirements as follows:
				1. Flame Spread: 25 or less
				2. Smoke Developed: 450 or less
		2. Structural Criteria: Install and certify system to comply with structural requirements of governing codes.
		3. Installation Standard for Suspension System: Comply with ASTM C 636.
	3. Pre-installation Conference: Conduct a conference, prior to start of installation, to review system requirements, shop drawings, and all coordination needs.
5. DELIVERY, STORAGE AND HANDLING
	1. Deliver system components in manufacturer's original unopened packages, clearly labeled.
	2. Store components in fully enclosed dry space. Carefully place on skids, to prevent damage from moisture and other construction activities.
	3. Handle components to prevent damage to surfaces and edges, and to prevent distortion and other physical damage.
6. PROJECT CONDITIONS
	1. Begin system installations only after spaces are enclosed and weather-tight, and after all wet work and overhead work have been completed.
	2. Prior to starting installations, allow materials to reach ambient room temperature and humidity intended to be maintained for occupancy.
7. WARRANTY
	1. Provide specified manufacturer's warranty against defects in workmanship or discoloration.
	2. This warranty shall remain in effect for a minimum period of one (1) year from date of initial acceptance.
8. MAINTENANCE & EXTRA MATERIALS
	1. Maintenance Instructions: Provide manufacturer's standard maintenance and cleaning instructions for finishes provided. Given the unique and special nature of our Felt ceiling products, steps should be taken (before and during installation, as well as over the lifetime of the ceiling) to avoid or minimize static and the accumulation of dust, lint, dirt or airborne particles on or around the felt.
	2. 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 Felt Ceiling Units: 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.

**PART 2 PRODUCTS**

1. MANUFACTURER
	1. Provide Felt panel ceiling system manufactured by Maxxit Ceilings & Walls, Toronto, Ont. Canada
	2. Substitutions not permitted
2. SYSTEM MATERIALS
	1. Felt panel ceiling system for interior installations (choose from one of the following systems):
		1. Linear Baffle - Straight
			1. Baffle Height **(Specify up to 48” maximum height)**
			2. Baffle Length **(Specify up to 8’ maximum length)**
			3. Baffle Spacing **(Custom[specify])**
		2. Custom **(Contact Maxxit for design parameters)**
			1. Vertically Curved Straight Baffle
			2. Vertically Curved Crossroads Baffle System
	2. Panel Profile Type: 3/8" and ½” (nominal) thick PET (polyester) felt (60% recycled PET fiber)
		1. Straight baffle blade – specialized scissor clip for 15/16” grid and EZ access adjustable for 1.5” Unistrut fasteners slide into baffle channel and attached to respective suspension systems.
	3. Linear Suspension System Options:
		1. 15/16” x 1-1/2” T-Grid suspension system – Heavy Duty Class per ASTM C635
			1. 15/16” x 1-1/2” x 12’ Main Tees spaced 4’ on center maximum
			2. 15/16” x 1-1/2” x 4’ Cross Tees spaced 4’ on center maximum
			3. 15/16” x 1-1/2” x 2’ Cross Tees as required per application
		2. Direct Hung Baffle
		3. Hangers:
			1. Hanger Wire: 12 gauge galvanized carbon steel hanger wire.
			2. Threaded Rod
			3. Aircraft Cable
	4. Surface Texture: Soft
	5. Edge Profile: Square
	6. Panel Finish/Color: 37 standard felt colors
3. ACCESSORY MATERIALS
	1. Suspension Hook assembly with 1/16” Stainless Steel Woven Wire (Aircraft Cable). Hook assembly grips and locks cable in place for vertical adjustment. Hook designed to install in top of factory punched Felt Panel continuous rail or clip.

**PART 3- EXECUTION**

1. EXAMINATION
	1. Examine substrates and structural framing to which acoustical felt panels 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 felt panel ceilings.
	2. Proceed with installation only after unsatisfactory conditions have been corrected.
2. PREPARATION
	1. Coordination: Furnish layouts for cast-in-place anchors, clips, and other ceiling anchors whose installation is specified in other Sections.
	2. Measure each ceiling area and establish layout of acoustical felt pan units to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width units at borders, and comply with layout shown on reflected ceiling plans.
3. INSTALLATION
	1. General: Install acoustical felt panel ceilings, per manufacturers shop drawings provided, per manufacturer's written instructions and to comply with publications referenced below.
		1. ClSCA "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
	2. 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.
		6. Level grid to 1/8" in 10' from specified elevation(s), square and true.
		7. Adjust suspension system runners so they are square (within .5 degree from 90 degrees) and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
	3. Secure bracing wires to ceiling suspension members and to supports acceptable to Architect/Engineer and/or inspector. Suspend bracing from building's structural members and/or structural deck, as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs (unless directed otherwise).
	4. Scribe and cut acoustical felt panel units for accurate fit at penetrations by other work through ceilings. Stiffen edges of cut units as required to eliminate evidence of buckling or variations in flatness exceeding referenced standards for stretcher-leveled felt sheet.
	5. Install acoustical felt panel units in coordination with suspension system. Fit adjoining units to form flush, tight joints. Scribe and cut units for accurate fit at borders and around construction penetrating ceiling.
4. ADJUST AND CLEAN
	1. Adjust components to provide uniform tolerances.
	2. Replace all ceiling panels that are creased, faded, or otherwise damaged.
	3. Clean exposed surfaces with vacuum or dusting. If necessary, panels can be wet cleaned with water, or non-solvent, non-abrasive commercial type cleaner.

**End of Section**